Welcome to North Harris Montgomery Community College District (NHMCCD) and welcome to your future. I congratulate you for your decision to pursue higher education opportunities and appreciate that you have chosen NHMCCD to help you achieve your goals. In today’s economy, the need for higher education and training has never been greater. Whether your future includes earning an associate’s degree, training for a new career, updating current job skills or transferring to a four-year university, you have come to the right place.

The college district includes five comprehensive colleges - North Harris College, Kingwood College, Tomball College, Montgomery College, and Cy-Fair College. In addition, with six satellite centers – Carver Center, Parkway Center, East Montgomery County Improvement District (EMCID), Center for Business and Technology Training, Willow Chase Center, and Fairbanks Center – we have a site convenient to you. Our colleges and centers offer a wide variety of technical programs ranging from computer and engineering technology to nursing and veterinary technology to help you meet your career goals. Other programs newly available include alternative teacher certification, fire science technology and dental hygiene. If a bachelor’s degree is your goal, hundreds of transfer courses are available that fulfill the requirements of your first two years of coursework. In addition, numerous noncredit courses are offered to help you update your job skills and acquire new technology proficiencies or, through leisure learning classes, to satisfy many personal interests. Moreover, NHMCCD offers many financial aid programs that will help to reduce financial barriers.

We are committed to helping you succeed in whatever life, academic or career goal you choose, and I am confident that you will find that at North Harris Montgomery Community College District, you can “Make It Happen!”

John E. Pickelman, Ph.D.
Chancellor

The college district chancellor is the chief executive officer of the North Harris Montgomery Community College District.
North Harris Montgomery Community College District

Catalog 06/07

Cy-Fair College
9191 Barker Cypress Road / Cypress, TX 77433-1383 / 281.290.3200
www.cy-faircollege.com

Kingwood College
20000 Kingwood Drive / Kingwood, TX 77339-3801 / 281.312.1600
www.kingwoodcollege.com

Montgomery College
3200 College Park Drive / Conroe, TX 77384-4500 / 936.273.7000
www.montgomery-college.com

North Harris College
2700 W. W. Thorne Drive / Houston, TX 77073-3499 / 281.618.5400
www.northharriscollege.com

Tomball College
30555 Tomball Parkway / Tomball, TX 77375-4036 / 281.351.3300
www.tomballcollege.com

The University Center
3232 College Park Drive / The Woodlands, TX 77384-4500 / 281.618.7140
936.273.7510 / www.tuc.edu

District Services & Training Center
5000 Research Forest Drive / The Woodlands, TX 77381-4399
832.813.6500 / www.nhmccd.edu

A district of comprehensive, public, two-year colleges, North Harris Montgomery Community College District offers academic, workforce development, continuing education, and general programs and services, as well as customized contract training. Residents in the following independent school districts have voted to join the college district and qualify for in-district tuition rates: Aldine, Conroe, Cypress-Fairbanks, Humble, Klein, Magnolia, New Caney, Splendora, Spring, Tomball and Willis.

NHMCCD 34th Annual Catalog
## Phone Numbers

*All phone numbers have a 281 area code unless otherwise noted.*

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- General Associate Degree Requirements
- Additional Associate Degrees
- Graduation
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- Requirements for the Associate of Science
- Associate of Arts in Teaching
- Requirements for the Associate of Arts in Teaching
- Transferability
- Graduate Guarantee
- Field of Study Program Offerings
- Area of Concentration Offerings
- University Center Degree Plans
- Associate of Applied Science Degree
- Certificate Programs and General Requirements
- Requirements for the Associate of Applied Science Degree
- Associate of Applied Science Degrees and Certificates (Star Chart)
- Prefixes Assigned to Programs and Disciplines
- Course Revision Crosswalk

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### Fall Semester 2006

- **Online & phone registration begins**: April 11
- **On-site registration begins**: May 1
- **Faculty returns**: Aug. 21
- **Last day to register**: Aug. 26
- **Weekday classes begin**: Aug. 28
- **Labor Day holiday**: Sept. 2-4
- **Friday evening, Saturday & Sunday classes begin**: Sept. 8-10
- **Official day of record**: Sept. 11
- **ACT test**: Sept. 23
- **Last day to file for Dec. graduation**: Oct. 1
- **Mid-semester**: Oct. 20
- **ACT test**: Oct. 21
- **THEA test**: Oct. 28
- **Last day to drop class & receive “W”**: Nov. 10
- **Thanksgiving holidays**: Nov. 23-26 (offices closed-classes dismiss Nov. 22, 4:30 pm)
- **ACT test**: Dec. 9
- **Final Exams**: Dec. 11-17
- **End of semester**: Dec. 17
- **Faculty grades due in StarGazer (noon)**: Dec. 18
- **Winter Mini-mester**: Dec. 18-Jan. 5
- **Winter holidays (offices closed)**: Dec. 21-Jan. 3

### Spring Semester 2007

- **Online & phone registration begins**: Nov. 14
- **On-site registration begins**: Nov. 27
- **College offices reopen**: Jan. 4
- **Faculty returns**: Jan. 8
- **Last day to register**: Jan. 13
- **M.L. King Jr. holiday (colleges closed)**: Jan. 15
- **Weekday classes begin**: Jan. 16
- **Friday evening, Saturday & Sunday classes begin**: Jan. 19-21
- **Official day of record**: Jan. 29
- **Last day to file for May graduation**: Feb. 1
- **ACT test**: Feb. 10

### Calendar 06/07

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## Calendar 06/07

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### Summer Terms 2007

- **Online & phone registration begins**......March 6
- **On-site registration begins**......March 26
- **Mini-term begins**......May 14
**Memorial Day holiday**
  (offices closed)......May 26-28
- **Mini-term ends**......June 1
- **Regular summer term begins**......June 4
  (1st summer term June 4-July 10)
  (2nd summer term July 12-Aug. 16)
- **Weekend classes begin**......June 8-10
- **ACT test**......June 9
- **THEA test**......June 16
- **Independence Day holiday**......July 4
  (offices closed)
- **THEA test**......July 28
- **Faculty returns**......Aug. 20
- **End of summer terms**......Aug. 19

### Fall 2007

- **Weekday classes begin** Aug. 27
- **Weekend classes begin** Sept. 7-9
- **Final Exams are Dec. 10-16.**
- Consult Class Schedules for registration dates.
North Harris Montgomery Community College District is accredited by the Commission on Colleges of the Southern Association of Colleges and Schools, 1866 Southern Lane, Decatur, GA 30033-4097, phone 404.679.4501, to award the associate of arts degree, the associate of science degree, and the associate of applied science degree, and certificates.

Membership in

- Alliance for Community College Innovation
- American Association of Collegiate Registrars and Admissions Officers
- American Association of Community Colleges
- American Association of Intensive English Programs
- American Association for Paralegal Educators
- American Health Information Management Association
- American Federation of Art Museums
- American Institute for Foreign Study
- Association of Community College Trustees
- Association of International Education
- Association of Texas Colleges and Universities
- Association of Texas Leadership Programs
- Community Colleges for International Development
- Hispanic Association of Colleges and Universities
- Houston Legal Assistants Association
- International Association for Continuing Education and Training
- International Community Development Council
- League for Innovation
- Learning Resource Network
- Microsoft IT Academy
- National Alliance of Business
- National Association of Collegiate Veterans Program Officials
- National Association of Instructional Administrators
- National Association of Legal Assistants
- National Association of Student Financial Aid Administrators
- National Automotive Education Foundation
- National Council for Workforce Education
- National Council of Instructional Administrators
- National Council on Student Development
- National Federation of Paralegal Associations
- National Institute for Staff and Organizational Development
- National Kitchen & Bath Association
- Phi Rho Pi, The National Junior & Community College Forensic Association & Honor Society
- Southern Association of Collegiate Registrars and Admissions Officers
- Southern Economic Development Council
- Texas Administrators of Continuing Education
- Texas Association of College Technical Educators
- Texas Association of Business
- Texas Association of Collegiate Registrars and Admissions Officers
- Texas Association of Collegiate Veterans Program Officials
- Texas Association of Community Colleges
RECOGNITIONS & MEMBERSHIPS

• Texas Association of School Boards
• Texas Association of Schools of Art
• Texas Association of Student Financial Aid Administrators
• Texas Campus Compact
• Texas Common Course Numbering
• Texas Community College Association
• Texas Community College Teachers Association
• Texas Community College Speech & Theatre Association
• Texas Healthcare and Bioscience Institute
• Texas Higher Education Coordinating Board
• Texas State Cosmetology Commission
• Texas Workforce Commission for Veteran’s Training
• Western Association of Veterans Education Specialists

Programs approved by

• Accrediting Council for Occupational Therapy Education
• American Dental Association
• American Society of Health-System Pharmacists Commission on Credentialing
• American Veterinary Medical Association
• BICSI
• Board of Nurse Examiners for the State of Texas
• Cisco Regional Academy
• Commission on Accreditation for Allied Health Education Programs
• Commission on Accreditation for Physical Therapy Education
• Commission on English Language Program Accreditation
• Committee on Accreditation for Respiratory Care in conjunction with the Commission on Accreditation for Allied Health Education Programs
• Joint Review Committee for Education in Diagnostic Medical Sonography
• Joint Review Committee on Education in Radiologic Technology
• MACTE: Montessori Accreditation Council for Teacher Education
• Microsoft Academy
• Microsoft MOS Certification Test Center
• National League for Nursing Accrediting Commission, Inc.
• Oracle Academic Initiative
• Texas Commission on Alcohol and Drug Abuse
• Texas Commission on Law Enforcement Officer Standards and Education
• Texas Department of State Health Services
• Texas Education Agency
• Texas Commission on Fire Protection
• Texas Consortium for Study Abroad
• Texas Council of Arts in Education
• Texas Distance Learning Association
• Texas Economic Development Council
• Texas Education Theatre Association
• The Community College Speech and Theatre Association
• The Community Leadership Association

STUDENT RIGHTS

Student Right-To-Know

North Harris Montgomery Community College District does not discriminate on the basis of race, color, gender, religion, disability, age, veteran status, nationality, sexual orientation, or ethnicity in provisions of educational opportunities or employment opportunities and benefits.
NHMCCD colleges make statistics available regarding persistence, completion and graduation rates of full-time undergraduate certificate or degree-seeking students. The colleges also report beginning salaries earned by recent graduates.

NHMCCD colleges require specific standards of conduct relating to alcohol and substance abuse, and provide education and consultation to students seeking assistance with alcohol and drug issues.

NHMCCD colleges have in place a process for students to appeal decisions or file formal grievances related to academic progress and student life on campus.

NHMCCD colleges report campus crime statistics.

Please contact the student services office at any college or access the district’s homepage (www.nhmccd.edu) for complete policies and information.

The provisions and information set forth in this catalog are intended to be informational and not contractual in nature. North Harris Montgomery Community College District reserves and retains the right to amend, alter, change, delete or modify any of the provisions of this catalog at any time or in any manner that the administration or Board of Trustees of the North Harris Montgomery Community College District deems to be in the best interest of the college.

The policies and procedures stated herein are for the student’s benefit and assistance. The administration of the district reserves the right to act as final interpreter of this catalog. Additionally, the district reserves the right to change, without prior notice, tuition, fees, requirements and regulations, as obligated by district or legislative action.

The district cannot guarantee that courses listed in this catalog will be offered in any given term or year at any college. Registration for a particular section, course or program will be permitted only until available classroom space or facilities have been filled. NHMCCD reserves the right to cancel any course or section for which enrollment is insufficient.

A student who wishes to review documents regarding the accreditation of North Harris Montgomery Community College District may do so by making an appointment with the chief student-affairs officer.

**Equal Opportunity Statement**

The North Harris Montgomery Community College District is committed to the principle of equal opportunity in education and employment. The district does not discriminate against individuals on the basis of race, color, gender, religion, disability, age, veteran status, nationality, sexual orientation, or ethnicity in the administration of its educational policies, admissions policies, employment policies, scholarship and loan programs, and other district or college administered programs and activities.

Inquiries concerning the district’s policies, compliance with applicable laws, statutes, and regulations (such as Title VI, Title IX, and Section 504), and complaints may be directed to the Human Resources office, 832.813.6646. The vice chancellor and general counsel is designated as the district’s equal opportunity officer and Title IX coordinator. Inquiries about the laws and about compliance may also be directed to the assistant secretary for civil rights, U.S. Department of Education.

**ADA Statement**

NHMCCD is dedicated to providing the least restrictive learning environment for all students. The college district promotes equity in academic access through the implementation of reasonable accommodations as required by The Vocational Rehabilitation Act of 1973, Title V, Section 504 and the Americans with Disabilities Act of 1990 (ADA) which will enable students with disabilities to participate in and benefit from all post-secondary educational programs and activities.
GENERAL INFORMATION

General Information

STATEMENT OF MISSION/PURPOSE

North Harris Montgomery Community College District as a publicly-supported, two-year, comprehensive community college system involves diverse individuals, businesses, and the community in quality educational opportunities for the successful development of knowledge, skills, and attitudes for a rapidly changing world.

Through its colleges and centers, NHMCCD develops learning communities for:

- Technical programs, leading to associate’s degrees or certificates, designed to develop marketable skills and support economic development.
- Academic courses in the arts and sciences to transfer to senior institutions.
- Continuing adult education programs for academic, professional, occupational, and cultural enhancement.
- Developmental education and literacy programs designed to improve the basic skills of students.
- A program of student support services, including counseling and learning resources, designed to assist individuals in achieving their educational and career goals.
- Workforce, economic, and community development initiatives designed to meet local and statewide needs.
- Other purposes as may be directed by the Board of Trustees and/or the laws of the State of Texas.

VALUE STATEMENTS

Learning Communities

We believe that the North Harris Montgomery Community Colleges are dynamic learning communities, distinguished by excellence in teaching, allowing citizens to develop to the full extent of their ability, to succeed in a competitive work environment, and to be effective lifelong learners.

Access with Quality

We believe that the North Harris Montgomery Community College District provides an enriching learning environment which meets the needs of its diverse communities through outreach, access, student support systems and a diverse faculty and staff.

Building Communities and Partnerships

We believe that the North Harris Montgomery Community Colleges are catalysts for promoting a seamless educational journey and for nurturing the intellectual and cultural life of the community.

Economic and Workforce Development

We believe that the North Harris Montgomery Community College District serves as the critical link for economic and workforce development to improve the prosperity of our region through partnerships with business, government, and community organizations.

Human Resources

We believe that the most important resources of the North Harris Montgomery Community College District are the individual faculty and staff members, who are entitled to a supportive
collegial work environment which rewards excellence, provides opportunities for professional development, encourages meaningful involvement in the decision-making process, and provides excellent compensation.

**Technology**

We believe that students achieve their learning goals best as the North Harris Montgomery Community Colleges provide responsive and effective support services, learning resources, current technologies and information systems.

**Information**

North Harris Montgomery Community College District believes that the achievement of the mission and purpose requires an effective system of communication to both internal and external constituencies.

**Leadership**

We believe that the North Harris Montgomery Community Colleges, building on a solid foundation of growth and service, are recognized leaders in the community college movement, making important contributions to the profession through partnerships, innovation, scholarship, creative services and integrated technologies.

**Stewardship**

We believe that the North Harris Montgomery Community College District is committed to rigorous stewardship of the resources entrusted to its care to assure maximum benefit for the community.

**Evaluation**

We believe that it is essential that the North Harris Montgomery Community Colleges – working separately for local effectiveness and working cooperatively as a single district for efficiency – must regularly assess the impact and outcomes of our efforts for continuous improvement.

---

**North Harris Montgomery Community College District**

**at a Glance**

www.nhmccd.edu

Once a student enrolls in North Harris Montgomery Community College District, that person is making a decision to join one of the finest community colleges in the country. Offering a wide range of academic and workforce courses for recent high school graduates and community residents of all ages, NHMCCD is one of the largest and fastest growing community colleges in Texas.

Over 41,000 students register for credit courses each semester with an additional 15,000 in continuing education courses. The college district serves an area over 1,400 square miles, encompassing the school districts of Aldine, Conroe, Cypress-Fairbanks, Humble, Klein, Magnolia, New Caney, Splendora, Spring, Tomball Willis, and the surrounding communities.

NHMCCD comprises North Harris College, Kingwood College, Tomball College, Montgomery College, and Cy-Fair College as well as satellite centers - Carver, Parkway, Career and Technology Center, East Montgomery County Improvement District, Fairbanks, Willow Chase and the Center for Business & Technology Training. The University Center, a partnership with NHMCCD and six Texas universities, provides over 60 bachelor’s, master’s, and doctorate programs.

Innovative programs, nationally renowned faculty and student-centered learning environments make NHMCCD the right choice for students to:

- obtain an associate’s degree or certificate;
- transfer to a university;
- gain new workforce skills;
• change careers;
• attain personal development goals; or
• prepare for college level work.

The staff in our extended learning centers provide seminars, tutoring, computer services, Internet access, study groups and personal assistance to aid student success. Student groups and organizations welcome participation and encourage student involvement.

Education generates a trained workforce, which fuels the community’s economy. Established in 1972, NHMCCD remains committed to workforce training, state-of-the-art technological tools and educational excellence.

NHMCCD is committed to providing educational access for all through satellite centers, distance learning, dual credit courses for high school juniors and seniors, and course offerings when and where students need them. The district offers a variety of workforce certificates and degrees in addition to university general education transfer programs.

Cy-Fair College, the newest addition to NHMCCD, has two convenient locations to serve the Cypress-Fairbanks community. Our Barker Cypress location is nestled upon a beautiful 200-acre site at Barker Cypress and West Road while our Fairbanks Center allows easy access for students residing in the southeast region of Cy-Fair. As a comprehensive community college for the 21st century, both campuses provide a dynamic environment for life-long learning.

Cy-Fair College on Barker Cypress is a state-of-the-art campus for students seeking associate’s degrees or taking university-transfer courses. Among the campus features are computer-based classrooms and labs, specialized labs for technology skills training, fine arts and performing arts facilities, a theater for student and community enjoyment and indoor and outdoor wellness facilities.

The college preserves a strong emphasis on responsiveness, innovation, collaboration, and student access. The vision of the college focuses on a strong commitment to student preparation for the changing world, the removal of barriers that hinder student success and exceptional service to students.
Kingwood College

www.kingwoodcollege.com

Located within the Kingwood community off Hwy 59, Kingwood College serves Kingwood, Humble, Atascocita and east Montgomery County on 264 beautifully landscaped acres.

Students of all ages register at Kingwood College to take part in programs such as:

- Academy for Lifelong Learning
- Associate of Arts in Teaching
- Business and Management
- Computer Gaming and Simulation
- Computer Graphics Technology
- Computer Information Technology
- Cosmetology
- Dental Hygiene
- Interior Design
- Logistics
- Occupational Therapy Assistant
- Nursing – RN and LVN
- Respiratory Care
- Teacher Alternative Certification

Kingwood College offers credit and continuing education classes at the East Montgomery County Improvement District Center (EMCID) at Highway 59 and Community Drive in New Caney. Classes are also offered at Cleveland High School.

For more information contact:

**Kingwood College**
281.312.1600 or 1.800.883.7939

**EMCID Center**
281.312.1750 or 1.800.883.7939

Montgomery College

www.montgomery-college.com

Completed in 1995, Montgomery College is a 320,000-square-foot campus located on 100 acres of pine forest, between The Woodlands and Conroe, Texas.

The college offers more than 40 career programs as well as academic transfer courses in a variety of subjects. Programs of note include criminal justice, physical therapist assistant, biotechnology, vocational nursing, radiologic technology, human services, computer information technology, and management. Academic course offerings include art, music, science, history, government, foreign languages, and English.

Montgomery College also works with its surrounding community, establishing programs such as the Academy for Lifelong Learning for active older adults, a popular series of summer
camps for youth, and a wide variety of educational and cultural events.

The college’s Center for Business & Technology Training (CBTT) in Conroe provides an array of business and technology courses and programs, as well as some transfer classes.

For more information, contact:

Montgomery College  936.321.5161 (metro)
1936.273.7000 (local)
CBTT  936.271.6000

North Harris College

www.northharriscollege.com

North Harris College was the first college in the district, serving students since 1973. Meeting the needs of the community, North Harris College has many unique programs as well as programs shared by all colleges in the district.

Degree programs available at North Harris College include:

- Automotive Technology
- Child Development and Family Studies
- Convergence Technology
- Cosmetology
- Criminal justice
- Health Information Technology
- Hospitality Management
- Interpreter Training Technology
- Management
- Nursing
- Paralegal Studies
- Pharmacy Technology
- Teacher Education

In addition to the 200-acre campus, North Harris College serves students with two satellite centers. Parkway Center is located off Beltway 8 near I-45 at 250 N. Sam Houston Parkway East in the Greenspoint area and Carver Center is located at 2330 S. Victory in Acres Homes.

For more information, contact:

North Harris College  281.618.5400
Parkway Center  281.260.3500
Carver Center  281.618.5800

Tomball College

www.tomballcollege.com

Tomball College, as do all of the colleges in NHMCCD, boasts a class ratio as low as 15-20 students per class. This small class size allows for more one-on-one instruction and provides students and teachers the opportunity to explore learning with more personal attention.

Serving the western sector of the college district, Tomball College provides degrees and certificates in a variety of areas, including:

- Accounting
• Computer Gaming
• Electrician
• Engineering Technology
• Management
• Nursing
• Occupational Therapy Assistant
• Pharmacy Technician
• Veterinary Technology

Willow Chase Center is the primary satellite located at 249 and Grant Road with over 50,000 square feet for classes and computer labs. Tomball College also offers night courses at local high schools.

For more information, contact:

**Tomball College** 281.351.3300
**Willow Chase Center** 281.401.5300

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**The University Center**

[Website: www.tuc.edu](http://www.tuc.edu)

Once you have completed your first two years of college coursework at one of the campuses in NHMCCD, you may want to continue at The University Center (TUC) to earn your bachelor’s or master’s degree or doctorate. A partnership with NHMCCD and six Texas universities, TUC provides programs in over 60 areas of concentration. The partnering universities are:

• Prairie View A&M University
• Sam Houston State University
• Texas A&M University
• Texas Southern University
• University of Houston
• UH - Downtown

Undergraduate and graduate degree programs are offered in many areas, including:

• Business
• Computers
• Criminal Justice
• Educational Leadership
• Engineering
• Healthcare/Nursing
• Liberal Arts
• Mathematics
• Natural Sciences
• Social Sciences
• Teacher Education

Offering the latest in high-tech education, The University Center is fiber optic cabled and is wired with videoconferencing and Internet access in every classroom. This technology, coupled with distance learning options, provides students a variety of formats and times in which they can complete their education.

For more information, contact:

**The University Center** 281.618.7140 or 936.273.7510
Distance Learning
eCampus.nhmccd.edu.

Distance learning allows students to obtain college credit without the need for traveling to one of NHMCCD’s campuses. The content and transferability of the courses are the same as traditional on-campus courses. In a manner similar to courses offered on-campus, instructors in distance learning courses use a variety of learning activities via distance such as discussion, class projects, exams, presentations, and written papers.

All courses are offered under the guidance of a qualified instructor and many require students to complete orientation activities at the beginning of the course. Courses are delivered using a variety of technologies: print, video, audio, internet, and teleweb. Students can complete all Associate of Arts degree requirements through distance learning. Students taking these courses have the same rights and responsibilities as they do in traditional campus-based courses.

For additional information on distance learning, call 832.813.6700 or e-mail distance.learning@nhmccd.edu or visit the web at http://ecampus.nhmccd.edu

Continuing Education

The North Harris Montgomery Community College District (NHMCCD) encourages individuals to engage in lifelong learning through participation in seminars, workshops, forums, activities, and workforce and leisure education programs.

Continuing education courses address the learning needs of a community, including workforce development, GED, ESL, literacy, recreation, and leisure offerings.

Leisure offerings for personal growth or enrichment are provided at each of the colleges. Participants can develop a hobby, learn a skill, learn a language or learn about a new topic. Most offerings are available to adults of any age, with special programs for youth and seniors.

Workforce education offerings prepare individuals for jobs as well as improve current job skills. Certificates are awarded for workforce development programs and courses, some of which lead to industry skills certification. Students earn continuing education units (CEUs) for each workforce development course completed. The CEU is an internationally recognized credit unit for successful completion of learning outcomes in a continuing education course/program. Standards are maintained by the International Association for Continuing Education and Training (IACET) for which NHMCCD is an approved provider for CEUs.

Students completing courses for CEUs have a permanent transcript available on request. One CEU is defined as “ten (10) contact hours of participation in an organized continuing education experience under responsible sponsorship, capable direction, and qualified instruction.” All workforce development courses meet criteria established by the Texas Higher Education Coordinating Board, IACET, and the Southern Association of Colleges and Schools. For more information, contact the individual college that you are interested in attending.

Corporate Training

Each college within NHMCCD offers specialized and customized training for business and industry. A wide variety of employee training is available ranging from basic skills to computer software and technology to leadership and organizational development. Business training consultants at each college work with businesses to develop courses/programs and related employee support activities to improve productivity and service.
Flexibility in class scheduling allows courses to be offered at the business site, on campus, or at other locations suitable to meet client needs. Classes are led by experienced instructors who develop successful learning environments. NHMCCD is actively involved in many community-based partnerships which allow all workforce and economic development activities to function as a market-driven enterprise. Partnerships encompass business consortiums, economic development, institutional/government, and education/business partnerships. For more information, contact the individual college that you are interested in attending.

Community Partnerships
NHMCCD’s Office of External Affairs helps coordinate community economic and small business development activities with each NHMCCD college. The Small Business Development Center (SBDC) and the North Houston Economic Development Alliance provide a central contact point for 10 area chambers of commerce and the North Houston Association. For more information, contact the NHMCCD Office of External Affairs at 832.813.6620.

Clery Act
NHMCCD complies with the Jeanne Clery Campus Security Policy and Crime Statistics Act and the Jacob Wetterling Crimes Against Children and Sexually Violent Offender Registration Act. Relevant information can be found at www.nhmccd.edu at the police link under the “Quick Links” bar.

Racial Profiling
The NHMCCD Police Department prohibits the practice known as racial profiling by its officers. Click on http://www.nhmccd.edu/goto/racialprofiling for more information.

Sex Offender Policy
Effective September 1, 2003, the Texas Code of Criminal Procedure 62.03(h) requires each person who is required to register as a sex offender and who intends to be employed, work with a contractor, or attend classes at an institution of higher education to register with the campus police department within seven days. Current NHMCCD board policy requires that sex offenders seeking to enroll at, provide services to, or be employed with NHMCCD submit information pertinent to his or her offenses to the District Review Committee. The Committee will determine his or her eligibility for enrollment, contracting, or employment at NHMCCD prior to registration or hiring.

Sex Offender Data
Information concerning registered sex offenders can be accessed from the Texas DPS Web site at http://records.txdps.state.tx.us/soSearch/

Inclement Weather
In the event of inclement weather or emergency closing, the Location Executive Officer (LEO) or designee may cancel all or some of the college classes. Generally, such decisions will be made between 5:30 a.m. and 6 a.m. for day classes and by 3 p.m. for evening classes. When off-campus facilities are closed for any reason, the college classes at those sites will also be canceled. The closing announcement will be made on all local radio and television stations. You can sign up to receive instant e-mail notifications by clicking on “Emergency Notices” in the NEWS section of the homepage, www.nhmccd.edu. Clicking on the mailbox will allow you to register for closing information for any or all of our locations.

Computer Maintenance
In order to maintain the highest level of computer services and availability, NHMCCD will perform regular maintenance on computer systems from Saturdays at midnight until noon on Sundays. Due to this maintenance schedule, computer systems may not be available during this timeframe.
North Harris Montgomery Community College District is an open admission district. All new NHMCCD students must fill out and submit an NHMCCD application form located at www.nhmccd.edu/goto/apply or the Texas Common Application for Community Colleges at www.applytexas.org. Returning students must complete and submit a new application if they have not enrolled in either the preceding fall or spring semester.

Admissions Criteria For Credit Courses

Once admitted to NHMCCD, students may elect to attend any college within the district. Admission to NHMCCD does not guarantee admission to a specific limited-enrollment program. You may be admitted to the district by any one of the following conditions:

1. Graduate from a high school accredited by a state department of education and/or a recognized regional accrediting association.
2. Transfer from another college or institution.
3. Obtain GED (General Education Development) certificate by passing the test as certified by a state education agency.
4. Meet international student criteria. If you reside in the United States but are not a citizen, you must present proper documentation for an appropriate visa category (A-L). Additional information relating to academic background, financial support, as well as a personal interview may be required for admission. See admission procedures for international students on page 23.
5. Meet exceptional admission criteria. If you are enrolled in high school and do not have a GED certificate or a diploma from a regionally accredited high school, you may qualify for exceptional admission. Exceptional admission at NHMCCD is designed for students whose academic needs can best be met by the inclusion of college-level instruction.
6. Obtain individual approval. If you do not meet any of the above requirements, you may be admitted with special individual approval, provided sufficient evidence is presented that you can do college-level work. This may include, but is not limited to, standardized written exams, other measurement instruments or a non-written examination for practical course work.

Exceptional Admissions - Definition

College credits earned through the exceptional admission program will be accepted by most institutions on the same basis as other college credit. There is a possibility, however, that a specific college may add additional requirements for transfer purposes. Contact the college admissions office or a high school counselor for more information.

Please note that college-level placement scores and THEA scores are different. The THEA passing scores and the qualifying college placement scores must be noted on the Exceptional Admission form. An exceptional admissions student may apply for financial aid, such as the Texas Public Education Grant. Funds will be awarded if students meet eligibility criteria. Contact the financial aid office at the college of your choice for more information.

Participation in the exceptional admissions program may make some students ineligible for University Interscholastic League (UIL) competition in certain academic areas, depending on the course taken. English and history courses do not affect eligibility. Students should contact their high school adviser for specific UIL requirements.

Exceptional Admissions Process

The following must be submitted to the college admissions office prior to or when registering:

1. Go to our web site at http://newstudent.nhmccd.edu/goto/apply to complete the new student orientation.
2. College admission application available online at www.nhmccd.edu/goto/apply
3. Copy of official test scores
4. Evidence that required course prerequisites have been satisfied
5. College registration form with college classes authorized by high school counselor
ADMISSION POLICIES & PROCEDURES

6. Exceptional admission form signed by student, parents, high school principal or designee which lists the college classes and high school classes, if enrolling in a dual credit course

Additionally, students younger than 16 years of age must receive approval for exceptional admission by the following criteria:

1. Student must meet college-level readiness in writing, reading, and mathematics according to NHMCCD placement scores
2. Student’s parent (or a designated responsible adult) agrees to be available at the college location to monitor the student’s activities outside of class while on a NHMCCD college campus and to be immediately available in case of an emergency

Dual Credit - Definition

Dual credit is part of the North Harris Montgomery Community College District’s exceptional admissions program. It is especially designed for junior and senior secondary education students who qualify to earn high school and college credit simultaneously while still in high school.

NHMCCD colleges have agreements with several high school districts that permit eligible high school students to earn college credit while satisfying high school graduation requirements at the same time.

Upon approval by the high school principal or designee and college admission through the exceptional admissions program, a student may enroll in college courses taught either at the high school or at NHMCCD. Students may enroll in a maximum of two college-level courses per semester. Exceptions require approval by the instructional vice president or designee.

For more information regarding the dual credit program, contact the instructional vice president at any of the colleges.

Dual Credit - Requirements

In order for students to be eligible for dual credit, the following must be in place:

- The high school has an agreement with NHMCCD
- The student is currently enrolled in high school
- The student meets the requirements for exceptional admissions
- The student has approval from high school and parent/guardian

In addition to these requirements, students must meet both the state TSI requirement and the college-level placement requirements.

Student can meet the TSI requirement by:

- Being exempt from the THEA test based on ACT, SAT, or TAKS scores
- Achieving college placement scores on the ASSET, ACCUPLACER, COMPASS or THEA

High school counselors or college dual credit advisors can assist students in this area.

Dual Credit Class Load and Grades

State regulations allow a dual credit student to take a maximum of two college credit courses per semester. When indicators such as grade point average or assessment scores indicate a student may have the academic ability to handle more than two courses, exceptions may be granted by the college’s instructional vice president or designee. Effective fall 2004 dual credit students receive a 50 percent discounted tuition rate. All other fees will be assessed at their regular rate. High school student must complete each college course attempted with a grade of “C” or better in order to continue in the program. For additional information about dual credit, please contact the college instructional vice president.

Joint Admissions

The Joint Admissions program is a partnership that allows NHMCCD students the opportunity to apply and enroll in UH - Downtown, Sam Houston State University, Prairie View A&M, or Texas Southern University while still attending NHMCCD. This ensures that all courses transfer directly into a program-specific bachelor’s degree. Students in this program receive all the benefits of being a typical university student.

For additional information, go to our web site at www.tuc.edu/services/jointadmissions.htm or contact the Articulation University Relations department at The University Center at 936.273.7606.
Admissions Procedures For International Students

NHMCCD is authorized under federal law to enroll non-immigrant students carrying valid visas. Currently there are over 1100 international students from 72 different countries. Students residing in the U.S. but who are not U.S. residents or citizens must present proper documentation for an appropriate visa category. These documents include a copy of the student’s valid passport, visa and I-94 card. Additional information is also required to show proof of their academic background. NHMCCD adheres to Citizenship and Immigration Services (CIS) guidelines. It is the responsibility of the student to have knowledge of CIS regulations pertaining to their visa type.

Enrollment involves three processes: admission, advisement and course registration. Applicants should contact the International Student Adviser at the college where they plan to attend. To be considered for admission to NHMCCD on a student visa, the applicant must present the following items with their completed application forms:

1. An NHMCCD International Student Application, completed and signed by applicant.
2. Evidence of financial support, showing that adequate funding is available to pay for the applicant's educational and living expenses. Applicants will submit the International Student Financial Responsibility Statement, completed and signed by applicant and the Financial Responsibility Statement for International Student Sponsor, if applicable, for each sponsor.
3. Individuals not proficient in English upon arrival will be required to be assessed for placement in the intensive English program.
4. Proof of English proficiency if appropriate can be assessed at the time of enrollment or by submitting one of the following:
   - Test of English as a foreign language (TOEFL) score of 530 or higher on the written version of TOEFL or 197 or higher on the computerized version.
   - Official transcripts from an accredited U.S. college or university showing successful completion of coursework including a college-level writing course (not ESL).
   - Official records from a foreign high school or higher education institution where English is the primary language of instruction may indicate English proficiency.
   - Documented completion of the final level of an intensive English language program approved by NHMCCD.
5. Evidence of high school graduation or college level work including complete official high school records showing completion or college/university transcripts translated into English. Degree-seeking students that have college/university credits outside the U.S. and wish to transfer their credits to NHMCCD, must submit a course-by-course evaluation by the American Association of Collegiate Registrars and Admissions Officers (AACRAO) International Education Services or by a service that maintains current membership in the National Association of Credential Evaluation Services, Inc. (NACES)
6. Transfer students from U.S. schools must also submit the International Student Transfer Information Form, completed by an international student adviser from the student’s previous institution and current copies of relevant documents including passport pages, U.S. visa, Form I-94, I-20, and financial documents.
7. Maintaining F-1 Status Form, signed and dated by applicant.
8. Students need to purchase health insurance or show proof of health insurance.
9. Student must be enrolled in a minimum of 12 semester hours.

Visit our web site at www.nhmccd.edu/goto/ips to access required forms and to learn more about the colleges in our district and the programs each college offers. Once you have been accepted for admission into a college, you will receive a welcome packet containing an I-20 form. All NHMCCD students are subject to the requirements of the Student Success Initiative.

All new (F-1) international students must attend a mandatory international student information session during their first semester. Please check with your international student adviser at your campus.
Types of Courses
North Harris Montgomery Community College District offers various course delivery methods and several ways to enroll. NHMCCD has offerings in Continuing Education and College Credit. Continuing Education courses range from workforce development to GED to leisure pursuits. College Credit courses are geared for students wishing to complete an associate’s degree, complete a certificate or transfer to a four-year university.

Enrollment in courses may be restricted by the college if you do not have the pre-requisite skills or recommended prior learning, as demonstrated by assessment scores and/or transcripts of previous work.

How To Enroll – Continuing Education
1. Obtain a class schedule and registration form from the admissions office or by phoning, writing, or visiting any of the colleges in the North Harris Montgomery Community College District. Forms are also available online at www.nhmccd.edu/goto/apply for registration.
2. Select classes and register online, in person, or by mail, phone or fax.
3. Pay for courses when registering.

Steps to Enrolling – Credit Courses
As an open admissions college district, NHMCCD makes it easy for you to get started. The steps are:

- Complete the new student orientation at http://newstudent.nhmccd.edu
- Submit an admissions form. Forms are available online at www.nhmccd.edu/goto/apply or complete the Texas Common Application for Community Colleges at www.applytexas.org
- Returning students must complete a new application if they have not enrolled in either the preceding fall or spring semester.
- Submit assessment scores or take an assessment test (ASSET, COMPASS, ACCUPLACER or THEA)
- Submit all official transcripts
- Make arrangements in the Counseling or Advising office to discuss instructional plans.
- Apply for Financial Aid if needed.
- Apply for Academic Fresh Start if needed.
- Register for classes.
- Pay Tuition and fees.

Registration Procedures For Non-Degree Seeking Students
A student who is not seeking a degree or certificate from NHMCCD may enroll for a maximum of 12 semester credit hours without being assessed in reading, writing and mathematics, but must meet the required prerequisites for courses. A student who regularly attends another college and plans to enroll only in the summer, must provide documentation of enrollment in another institution prior to enrolling at NHMCCD.

Registration Information
Registration for courses occurs several times throughout the year. Registration dates, procedures, and other pertinent information are printed each semester in the course schedule booklet and are available online. Additional registration, assessment testing, and advising information may also be obtained at the college where the student plans to register. New students are required to complete the online new student orientation at http://newstudent.nhmccd.edu or attend a new student information session prior to registration.

Auditing A Course
Approval to visit or audit a course may be granted by the instructional vice president or designee during the last week of registration for the class. The charges for auditing courses are the same as charges for credit enrollment. Credit will not be granted for an audited course. Approval to audit a course or change from audit to credit will not be permitted after the official day of record. Students may not change from credit to audit. Refunds for withdrawal from audit classes will be made according to the refund schedule established for credit courses during that semester or term. Students must meet the required prerequisites to audit a class.

Academic Overload (Recommended Academic Load)
An overload is defined as attempting more than 18 credit hours in the fall or spring terms. An adviser can provide specific information about overloads in summer and other non-traditional length terms. An overload during any term must be approved by the instructional vice president or designee. Students may only enroll in one course during a mini-mester.
Prerequisite Or Co-requisite Courses
Before registering for many courses, a student must complete designated prerequisites. Such requirements are indicated as part of the course description and are subject to change. College level reading and writing readiness are required prerequisites for most college credit courses. It is the student’s responsibility to take courses in sequence and at the proper level. Failure to adhere to prerequisite/co-requisite requirements may result in administrative withdrawal from the course. The co-requisite notation in a course description indicates that a student who enrolls in the course must enroll concurrently in the listed co-requisite unless the course has been taken previously.

Under special circumstances, the instructional vice president or designee may allow a student to register for a course without the required prerequisites. Students are cautioned that, under such circumstances, though they may receive credit toward graduation, another college may not accept such credits in fulfillment of certain specific requirements for a degree. Dual credit students are permitted to enroll in two college courses each semester.

Change Of Schedule
Requests for change of schedule should be made prior to the first day of the new course. Changes are allowed only when space is available in the course(s) the student wishes to add. The change action is not complete until it has been received and accepted by the admissions office.

Course Withdrawal Policy
Withdrawal from a course after the official day of record will result in a mark of “W” on the student’s transcript and no credit will be awarded for the course(s). Prior to the official withdrawal date, it is the student’s responsibility to initiate a request for withdrawal from any course. The withdrawal will only be processed if the student completes and submits for signature the required withdrawal form(s). The student must consult with the faculty member or a designated representative prior to submitting the request for withdrawal. Local college procedures are on file in the admissions office for the specific requirements regarding withdrawal requests.

Prior to the withdrawal date, faculty members may initiate requests for withdrawal of students for circumstances that the faculty member believes are appropriate. Any circumstances under which the student may be withdrawn by the faculty member will be included in the class syllabus. Students may not automatically be withdrawn for non-attendance in a class. If a student registers and pays for a course(s), it is the student’s responsibility to drop/withdraw before the “W” date.

Satisfactory academic progress is required for continuing eligibility for financial aid. Consult with the college’s financial aid office regarding the course completion requirements prior to withdrawing from any courses.

Academic Fresh Start Program
Under the provisions of the Texas Education Code, Section 51.931, a Texas resident is entitled to apply for admission/readmission to an NHMCCD college or to any specialized admission program at NHMCCD and elect to have all academic course work earned 10 or more years prior to the requested enrollment date ignored for enrollment purposes. If the applicant completes the right to an academic fresh start agreement with the college admissions office prior to registration confirming the decision to enroll under the academic fresh start statute, this institution will not consider academic course credits or grades earned by the applicant 10 or more years prior to the starting date of the semester in which the applicant seeks to enroll. An applicant who decides to apply under this statute may not receive any course credit for courses taken at any college or university 10 or more years prior to enrollment.

An applicant who chooses to exercise the provisions of the academic fresh start program must meet all NHMCCD admission/readmission requirements and must submit official transcripts from all colleges or universities attended. The courses excluded under this provision may not be counted toward a degree, may not be counted in the GPA calculations or academic standing and may not be used to meet prerequisite requirements.

The Academic Fresh Start Program does not apply to the Standards of Academic Progress for financial aid applicants. Therefore, one may not qualify for financial aid based on prior academic performance.

College Placement:
Texas Success Initiative (TSI) and Student Success Initiative (SSI)
As of September 1, 2003 Senate Bill 286, section 37 replaced the TASP statue with the Texas Success Initiative. Under the Texas Success Initiative, students will be assessed, receive the help they need to become college-ready, and be evaluated to determine when they are ready to enroll in college-level work.
All students, unless exempt (see Texas Success Initiative exemptions), MUST take the ASSET, ACCUPLACER, COMPASS or THEA prior to enrolling in college-level courses.

Students who do not pass all three sections of the assessment test, need to participate in developmental studies programs. The initial test scores will be used to place students in the appropriate developmental course. Students will need to complete the developmental sequence in the failed area or pass that section of the test prior to enrolling in college-level courses.

The NHMCCD Student Success Initiative (SSI) states that students are considered “TSI Complete” if they have passed the section of the test or completed the highest developmental course in reading, writing, or mathematics 0308 or TECM 1303 with a grade of “C” or better. A student cannot enroll in any of the approved related academic courses in the failed area until the developmental sequence is completed, or until the failed section of ASSET, ACCUPLACER, COMPASS or THEA is retaken and passed. Students must obtain scores on the assessment tests that are high enough to place into the course. The “TSI Complete” score will not satisfy most course prerequisites. *Refer to the placement chart for a list of the related academic courses in reading, writing, and mathematics. See page 28.

**Student Success Initiative (SSI)**

NHMCCD Student Success Initiative (SSI) requires all students to be assessed to determine college level readiness in reading, writing, and math. The purpose of the testing is to determine whether a student has the academic skills to succeed in college courses.

- To qualify for exceptional admission, students must meet both the NHMCCD Student Success Initiative requirements and the college level placement requirements.
- Students can meet the SSI requirement by being exempted from the THEA test based on ACT, SAT, or TAKS scores or by achieving a passing score on the ASSET, COMPASS, ACCUPLACER or THEA.

**Which Students are Exempt?**

1. For a period of five years from the date of testing, a student who is tested and performs at or above the following standards:
   - ACT: composite score of 23 with a minimum of 19 on either the English and mathematics tests; to be exempt in the appropriate area.
   - SAT: combined verbal and mathematics score of 1070 with a minimum of 500 on either the verbal and mathematics tests; to be exempt in the appropriate area.
2. For a period of three years from the date of testing, a student who is tested and performs on the Texas Assessment of Knowledge and Skills (TAKS) with 2200 on the mathematics test and/or 2200 in English/Language arts and at least a three (3) on the essay.
3. A student who has graduated with an associate or baccalaureate degree from an accredited Texas public institution of higher education.
4. A student who transfers to an institution of higher education from a private or independent institution of higher education or an accredited out-of-state institution of higher education and who has satisfactorily completed college level coursework as determined by the receiving institution.
5. A student who has previously attended any Texas state college or university and has been determined to have met TSI requirements by that institution.
6. A student who is serving on active duty as a member of the armed forces of the United States, the Texas National Guard, or as a member of a reserve component of the armed forces of the United States and has been serving for at least three years preceding enrollment.
7. A student who on or after Aug. 1, 1990, was honorably discharged, retired, or released from active duty as a member of the armed forces of the United States or the Texas National Guard or service as a member of a reserve component of the armed forces of the United States.

The payment of the test fee is the responsibility of the student. Kingwood College, Montgomery College, North Harris College, Tomball College, and Cy-Fair College are designated test sites. All students must be assessed or have college level coursework to meet prerequisite requirements.

See page 55 for assessment center information or contact your college counseling or advising office for more information on fees and testing dates.

**College Placement**

In addition to passing the ASSET, ACCUPLACER, COMPASS or THEA, students are required to meet college-level placement scores (writing, reading, mathematics) for individual courses as indicated by prerequisite requirements.
REGISTRATION POLICIES & PROCEDURES

- A student must pass both the reading and writing portions of the test for most college-level courses except some level one certificate programs in workforce areas and developmental courses.
- Students are required to meet math prerequisite skills in math, science-based courses (ex. physics and chemistry), and some additional courses.
- Students are required to pass the math portion of the test to enroll in math courses.

Intensive English Program

The Intensive English Program is designed for non-native English speakers who want to improve their language and culture skills. Students enroll in either credit or continuing education courses. The program has been accredited by the Commission on English Language Program Accreditation and is a member of the American Association of Intensive English Programs.

Credit ESL focuses on academically bound students and emphasizes preparation for college study. Students can earn institutional credit qualifying them for full-time student status, financial aid, and insurance needs. Students are awarded institutional semester credit hours.

Continuing education ESL is designed for professionals, participants preparing to enter careers requiring English proficiency, and those seeking general broad-based English development. Students are awarded continuing education units for each level.

Admission to the program requires prior admission to the college. International students seeking a student visa should refer to the section on “Admission Procedures for International Students”. Upon completing the application process, students will be directed to take an English placement test before registering for classes.

Assessment

The following scores are used for placement into courses.

<table>
<thead>
<tr>
<th>Course</th>
<th>THEA</th>
<th>ASSET</th>
<th>COMPASS</th>
<th>ACCUPLACER</th>
<th>ACT</th>
<th>SAT</th>
<th>TAAS</th>
<th>TAKS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Math</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0306</td>
<td>0-224</td>
<td>NS 23-42</td>
<td>A 0-27 or PA 0-54</td>
<td>0-50</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0308</td>
<td>225-243</td>
<td>NS 43+</td>
<td>A 28-43 or PA 55-100</td>
<td>51-62</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0310</td>
<td>244-269</td>
<td>ES 43+</td>
<td>A 44-59</td>
<td>63-85</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>College Level</td>
<td>270+</td>
<td>IA 45+</td>
<td>A 60+</td>
<td>86+</td>
<td>21+</td>
<td>520+</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Writing</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td>0306</td>
<td>0-179</td>
<td>23-34</td>
<td>1-35</td>
<td>0-50</td>
<td>11-15</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0307</td>
<td>180-219</td>
<td>35-45</td>
<td>36-85</td>
<td>51-79</td>
<td>16-18</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1301</td>
<td>220+</td>
<td>45+ and 6</td>
<td>85+ and 6</td>
<td>19+</td>
<td>500+</td>
<td>1770+</td>
<td>2200 and a 3</td>
<td></td>
</tr>
<tr>
<td>Reading</td>
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<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>0304</td>
<td>0-199</td>
<td>0-32</td>
<td>0-65</td>
<td>0-56</td>
<td>13-16</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>0305</td>
<td>200-229</td>
<td>33-40</td>
<td>66-80</td>
<td>57-77</td>
<td>17-18</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1301</td>
<td>230+</td>
<td>41+</td>
<td>81+</td>
<td>78+</td>
<td>19+</td>
<td>500+</td>
<td>89+</td>
<td>2200 and a 3</td>
</tr>
</tbody>
</table>

NS – Numerical Skills     A - Algebra
EA – Elementary Algebra   PA – Pre Algebra
IA - Intermediate Algebra CA – College Algebra
Articulation

Articulation provides a seamless transition to students moving from one level of education to another by matching curriculum to reduce duplication of course content. Articulation agreements exist between NHMCCD and various universities, independent school districts, private secondary schools, community education courses, and other training and certification entities. The agreements allow students to earn college credit for competencies outside of the traditional community college classroom.

University articulation for transfer can be for single courses, a group of courses (as listed on transfer planning guides) or entire degree programs (as listed in university articulation agreements). Transfer planning guides or equivalency charts are course specific and are updated annually. University articulation agreements are major or program specific. This type of articulation provides students with the assurance that the course work at NHMCCD will transfer to a university.

Course articulation agreements match high school courses with college technical courses and are included in Tech Prep associate of applied science degree programs.

Students must fulfill the following requirements to receive articulated credit:

- Earn a grade of at least 80 percent in the articulating course.
- Submit an application for Prior Learning Assessment by High School Articulation within 15 months of high school graduation.

---

**Assessment**

**ENGLISH AS A SECOND LANGUAGE PLACEMENT SCORES**

**LISTENING/SPEAKING**

<table>
<thead>
<tr>
<th>LEVEL</th>
<th>Compass ESL</th>
<th>CELT</th>
<th>CREDIT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Listen 10-41</td>
<td>LA: 5-15</td>
<td>ENGL 0331 Listening and Speaking I</td>
</tr>
<tr>
<td>2</td>
<td>Listen 42-66</td>
<td>LA: 16-24</td>
<td>ENGL 0332 Listening and Speaking II</td>
</tr>
<tr>
<td>3</td>
<td>Listen 67-81</td>
<td>LA: 25-32</td>
<td>ENGL 0333 Listening and Speaking III</td>
</tr>
<tr>
<td>4</td>
<td>Listen 82-87</td>
<td>LA: 33-41</td>
<td>ENGL 0334 Listening and Speaking IV</td>
</tr>
<tr>
<td>5</td>
<td>Listen 88-93</td>
<td>LA: 42-49</td>
<td>ENGL 0335 Listening and Speaking V</td>
</tr>
<tr>
<td>6</td>
<td>Listen &gt;93</td>
<td>LA: &gt;50</td>
<td>Recommend regular college-level co-requisite courses: ARTS 1316, DANC 1241, KINE 1306, ITSC 1401, MUEN 1151, etc.</td>
</tr>
</tbody>
</table>

**GRAMMAR/Writing**

<table>
<thead>
<tr>
<th>LEVEL</th>
<th>Compass ESL</th>
<th>CELT</th>
<th>CREDIT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Grammar 15-40</td>
<td>SA: 10-25</td>
<td>ENGL 0321 Grammar and Writing I</td>
</tr>
<tr>
<td>2</td>
<td>Grammar 41-60</td>
<td>SA: 26-35</td>
<td>ENGL 0322 Grammar and Writing II</td>
</tr>
<tr>
<td>3</td>
<td>Grammar 61-75</td>
<td>SA: 36-50</td>
<td>ENGL 0323 Grammar and Writing III</td>
</tr>
<tr>
<td>4*</td>
<td>Grammar 76-89</td>
<td>SA: 51-60</td>
<td>ENGL 0324 Grammar and Writing IV</td>
</tr>
<tr>
<td>5*</td>
<td>Grammar 90-98</td>
<td>SA: 61-64</td>
<td>ENGL 0325 Grammar and Writing V</td>
</tr>
<tr>
<td>6*</td>
<td>Grammar 99</td>
<td>SA: &gt;65</td>
<td>ENGL 0326 ESL Pre-Composition and Rhetoric</td>
</tr>
</tbody>
</table>

**Reading/Vocabulary**

<table>
<thead>
<tr>
<th>LEVEL</th>
<th>Compass ESL</th>
<th>CELT</th>
<th>CREDIT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Read 20-45 Listen 10-41</td>
<td>VA: 5-15 LA: 5-15</td>
<td>ENGL 0311 Reading and Vocabulary I</td>
</tr>
<tr>
<td>2</td>
<td>Read 46-65 Listen 42-66</td>
<td>VA: 16-29 LA: 16-24</td>
<td>ENGL 0312 Reading and Vocabulary II</td>
</tr>
<tr>
<td>3</td>
<td>Read 66-85 Listen 67-81</td>
<td>LA: 25-32 VA: 30-42</td>
<td>ENGL 0313 Reading and Vocabulary III</td>
</tr>
<tr>
<td>4</td>
<td>Read 86-96 Grammar 76-89</td>
<td>VSA: 43-55 SA: 51-60</td>
<td>ENGL 0314 Reading and Vocabulary IV</td>
</tr>
<tr>
<td>5</td>
<td>Read 97-99 Grammar 90-98</td>
<td>VA: 56-68 SA: 61-64</td>
<td>ENGL 0315 Reading and Vocabulary V</td>
</tr>
<tr>
<td>6</td>
<td>Read &gt;99 Grammar 99</td>
<td>VA: &gt;69 SA: &gt;65</td>
<td>ENGL 0316 Reading and Vocabulary VI</td>
</tr>
</tbody>
</table>

*Writing sample required*
REGISTRATION POLICIES & PROCEDURES

- Earn an additional six semester credit hours at NHMCCD within 27 months of high school graduation.
- Complete at least one articulating high school course as a junior or senior.

NHMCCD participates in the Advanced Technical Credit (ATC) program, formerly statewide articulation. A student may receive credit for an ATC designated course at any participating community college in the state of Texas. Local articulation agreements offer additional course options and are designed for credit through NHMCCD campuses only.

For more information on how to apply for articulated credit, contact the counseling or advising office at any college campus or the curriculum and instruction department located in the district services and training center. The district Web site for Tech Prep and articulated credit is http://www.nhmccd.edu/goto/collegeotechprep or visit http://www.techpreptexas.org for statewide information.

Advanced Technical Credit Course Crosswalk

This section contains high school to college ATC (formerly statewide articulation) course crosswalk. It does not include courses articulated by local agreements. Go to the Web site at www.nhmccd.edu/goto/collegeotechprep for updates and current local articulation crosswalks.

<table>
<thead>
<tr>
<th>High School</th>
<th>College</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accounting I</td>
<td>ACNT 1303</td>
</tr>
<tr>
<td>Administrative Procedures Career Preparation</td>
<td>POFT 1309</td>
</tr>
<tr>
<td>Architectural Graphics</td>
<td>DFTG 1309 or DFTG 1317</td>
</tr>
<tr>
<td>Automotive Technician II</td>
<td>AUMT 1416</td>
</tr>
<tr>
<td>AND ASE Certification in Steering &amp; Suspension</td>
<td></td>
</tr>
<tr>
<td>Automotive Technician II</td>
<td>AUMT 1410</td>
</tr>
<tr>
<td>AND ASE Certification in Brakes</td>
<td></td>
</tr>
<tr>
<td>Business Computer Information System I</td>
<td>ITSC 1401</td>
</tr>
<tr>
<td>Business Computer Information Systems II</td>
<td>ARTC 1313 or ITSW 1310</td>
</tr>
<tr>
<td>OR Business Computer Information Systems Career Preparation</td>
<td>ITSE 1402</td>
</tr>
<tr>
<td>Business Computer Programming I</td>
<td>IMED 1301 or ARTC 1313 or ITSW 1310</td>
</tr>
<tr>
<td>Business Image Management &amp; Multimedia</td>
<td>BMGT 1303 or BMGT 1301</td>
</tr>
<tr>
<td>Business Management</td>
<td></td>
</tr>
<tr>
<td>AND Business Ownership</td>
<td></td>
</tr>
<tr>
<td>Computer Maintenance Technician I</td>
<td>ITSC 1425</td>
</tr>
<tr>
<td>Computer Cabling and Design</td>
<td>EECT 1440</td>
</tr>
<tr>
<td>Computer Multimedia/Animation Technology</td>
<td>IMED 1301</td>
</tr>
<tr>
<td>Computer Applications</td>
<td>ITSC 1401</td>
</tr>
<tr>
<td>Electricity/Electronics Technology</td>
<td>INTC 1307 OR CETT 1402</td>
</tr>
<tr>
<td>Engineering Computer-Aided Drafting I</td>
<td>DFTG 1309</td>
</tr>
<tr>
<td>Engineering Graphics</td>
<td>DFTG 1305 or DFTG 1309</td>
</tr>
<tr>
<td>Engineering Computer-Aided Drafting II</td>
<td>DFTG 2319</td>
</tr>
<tr>
<td>Entrepreneurship</td>
<td>BUSG 2309</td>
</tr>
<tr>
<td>Heating, Ventilation, Air-Conditioning and Refrigeration II</td>
<td>HART 1401 or HART 1407</td>
</tr>
<tr>
<td>Health Science Technology II</td>
<td>VNSG 1323 and VNSG 1405</td>
</tr>
</tbody>
</table>

30
High School

**OR** Health Science Technology III Vocational Nursing

**OR** Vocational Nursing Career Preparation III

Health Science Technology III Pharmacy Aide

**OR** Pharmacy Aide Lab Career Preparation III

Health Science Technology III Medical Assisting

**OR** Medical Assisting Career Preparation III

Intergenerational Professions I

**AND** Intergenerational Professions II

International Business

Internetworking Technologies I (Non-Cisco Curriculum)

Internetworking Technologies I (Cisco Curriculum)

Internetworking Technologies II (Cisco Curriculum)

Introduction to Computer Maintenance

Media Technology I

Medical Terminology

**AND** Introduction to Health Science Technology OR any Statewide-Articulated Tech Prep Health Science Technology

Networking Essentials (Non-Cisco curriculum)

Networking Essentials (Cisco curriculum)

Principles of Marketing

**OR** Marketing Management Career Preparation

**OR** Marketing Dynamics Career Preparation

Technical Introduction to Computer-Aided Drafting

Welding II

Word Processing Applications

College

PHRA 1309

MDCA 1205 and MDCA 1517

and MDCA 1309

CDEC 1413

IBUS 1305

ITNW 1425

ITCC 1402 and ITCC 1406

ITCC 1442 and ITCC 1446

CPMT 1403 or ITSC 1405

IMED 1301

HITT 1305

University

International Business

Internetworking Technologies I (Non-Cisco Curriculum)

Internetworking Technologies I (Cisco Curriculum)

Internetworking Technologies II (Cisco Curriculum)

Introduction to Computer Maintenance

Media Technology I

Medical Terminology

**AND** Introduction to Health Science Technology OR any Statewide-Articulated Tech Prep Health Science Technology

Networking Essentials (Non-Cisco curriculum)

Networking Essentials (Cisco curriculum)

Principles of Marketing

**OR** Marketing Management Career Preparation

**OR** Marketing Dynamics Career Preparation

Technical Introduction to Computer-Aided Drafting

Welding II

Word Processing Applications

at www.nhmccd.edu/goto/collegetechprep for a list of our transfer opportunities.

**Continuing Education and Credit Linked Courses**

Continuing education works closely with the semester credit hour (SCH) programs to offer linked courses in which both credit and continuing education students attend the same section. Continuing education students who register for linked courses must meet the same requirements and prerequisites as credit students. Students registered through continuing education may earn continuing education units (CEUs). Students who wish to receive SCH must enroll through the credit registration process. Linked courses are noted by asterisks (*) throughout continuing education schedules.
Financial Information

2006-2007 Tuition & Fees Schedule

TUITION AND FEES ARE SUBJECT TO CHANGE

All tuition and fees must be paid in full before the registration process can be considered complete.

<table>
<thead>
<tr>
<th>Credit Hours</th>
<th>Resident of District 1</th>
<th>Out-of-District Texas Resident 2</th>
<th>International/Out-of-State 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>$56</td>
<td>$96</td>
<td>$220</td>
</tr>
<tr>
<td>2</td>
<td>100</td>
<td>180</td>
<td>228</td>
</tr>
<tr>
<td>3</td>
<td>144</td>
<td>264</td>
<td>309</td>
</tr>
<tr>
<td>4</td>
<td>188</td>
<td>348</td>
<td>408</td>
</tr>
<tr>
<td>5</td>
<td>232</td>
<td>432</td>
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<td>6</td>
<td>276</td>
<td>516</td>
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<td>14</td>
<td>628</td>
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<td>16</td>
<td>716</td>
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<td>17</td>
<td>760</td>
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<tr>
<td>20</td>
<td>892</td>
<td>1,692</td>
<td>1,992</td>
</tr>
</tbody>
</table>

Minimum tuition rates are set by the state legislature and are subject to change. Student tuition and fees are subject to change by the NHMCCD Board of Trustees. Dual credit students receive a 50 percent discounted tuition rate. All other fees, except some testing, will be assessed at their regular rate.

1 Includes tuition at the rate of $36 per credit hour, a $6 per credit hour technology fee, a $2 per credit hour student activity fee and a registration fee of $12. Applies to U.S. citizens who are residents of Aldine, Conroe, Cypress-Fairbanks, Humble, Klein, Magnolia, New Caney, Splendora, Spring, Tomball and Willis Independent School Districts.

2 Applies to U.S. citizens who are residents of Texas but do not reside in the college district. Includes tuition at a rate of $36 per credit hour, a $6 per credit hour technology fee, a $2 student activity fee and a registration fee of $12. Additionally, these sums include a $40 per credit hour out-of-district fee.

3 Applies to all other students. By legislative action the tuition may not be less than $200 (minimum tuition). Includes tuition at the rate of $36 per credit hour plus an additional international/out-of-state tuition of $55 per credit hour, in addition to a $6 per credit hour technology fee, a $2 student activity fee and a registration fee of $12.

Students who repeat most courses will be assessed an additional fee of $60 per credit hour when they enroll in a course for the third or more times. Certain exceptions may be made for extenuating circumstances pertaining to economic hardship and graduating students. The appeal process can be found in the admissions office.
FINANCIAL INFORMATION

RESIDENT STATUS

Establishing residency – NHMCCD must determine the residency status of all students for tuition purposes. All new students will be required to sign an oath of residency and may be required to provide substantiating documentation. Students returning to college after not enrolling for either the prior fall or spring semester will be required to reaffirm their residency status and may be required to provide substantiating documentation.

Residency is determined at the time of registration and can only be changed prior to the census date of the semester. Residency is determined by the student’s current address or by the address of the parent or legal guardian if the student is eligible to be claimed as a dependent for federal income tax purposes. A post office box can be used as a mailing address but cannot be used to establish residency.

It is the responsibility of the student to register under the correct residency classification. If there is a question about classification, it is the student’s responsibility, prior to the time of registration, to discuss this with the Admissions Office and have an official determination made. Additional information regarding residency requirements may be found in the college admissions office. The Chief Student Services Officer is the final authority on all questions on residency. Deliberate falsification of residence status or documentation will result in the student having to pay the difference in the charges and may subject a student to immediate dismissal.

For tuition purposes, students will be classified according to the following guidelines:

1. In-district Texas resident

   Students or dependent students whose parents or legal guardians have been a resident of Texas for the 12 months before the date of registration and who resides in the North Harris Montgomery Community College District (within the boundaries of the independent school districts of Aldine, Conroe, Cypress-Fairbanks, Humble, Klein, Magnolia, New Caney, Splendora, Spring, Tomball, and Willis) on the official reporting date is considered a resident of the district. Individuals, or their dependents, who are not residents of the district, but own property which is subject to ad valorem taxation by the district, shall pay tuition and fees at the rate applicable to a student who resides in the district. Persons, or their dependents, applying for such waiver shall verify property ownership by presentation of an ad valorem tax statement or receipt issued by the County Tax Assessor Collector; or by presentation of a deed, property closing statement, or other appropriate evidence of ownership of property which is subject to ad valorem taxation by the district. A foreign student is not eligible for waiver of the nonresident tuition rate due to payment of ad valorem taxes.

2. Out-of-district Texas resident

   A student who has been a Texas resident for the 12 months prior to the official reporting date of the semester in which the student is registering and who resides outside the boundaries of the North Harris Montgomery Community College District. Any individual who lives in Texas for 36 months immediately prior to high school graduation from a public or an accredited private high school or received the GED certificate as an alternative to high school graduation, lived in Texas the 12 months prior to the official reporting date of the semester in which the student is registering, registers as an entering student not earlier than fall 2001 and if not a US citizen provide an affidavit stating the individual will file an application to become a permanent resident will be considered a Texas resident for payment of tuition. A minor or dependent can establish residency separate from his/her parents.

3. Non-resident of Texas

   A student or dependent student whose parent or legal guardian resides out of state or has not been a resident of the state for the 12 months prior to the official reporting date of the semester in which the student is registering is considered a non-resident of Texas.
4. Military personnel
Military personnel or their families should check with the college admissions office for requirements on resident tuition.

5. Transfer Students
Students transferring from other Texas higher education institutions and who were enrolled the preceding spring or summer semesters will retain their previous classification unless they apply for residency status change.

DOCUMENTATION FOR STATE RESIDENT/IN-DISTRICT RESIDENT STATUS
The following documentation may be used to resolve residency issues and may be used to establish that an individual is domiciled in Texas and has maintained a residence in Texas continuously for 12 months prior to the official day of record for the semester.

1. Documents that can support the establishment of a domicile and demonstrate the maintenance of a residency in Texas for 12 months.
   - An employer’s statement of dates of employment
   - Other documents that show the person has been engaged in activities intended to provide an income to a person or allow a person to avoid the expense of paying another person to perform the tasks (home maintenance or child care).
   - Documents that show a person is self-employed, employed as a homemaker, or living off his/her earnings, or through public assistance.
   - For a homeless person, written statements from the office of one or more social service agencies located in Texas that attests to the provision of services to the homeless person for the 12 months prior to the census date of the term in which the person enrolls.

2. Documents that if maintained for at least 12 months prior to the official reporting date and if accompanied by at least one type of document listed in number three above can support the establishment of a domicile and demonstrate the maintenance of a residence in Texas for 12 months.
   - Title to real property in Texas
   - Marriage certificate with documentation to support that the spouse is a domiciliary of Texas
   - Ownership of a business in Texas with documents that evidence the organization or the business as a partnership or corporation and reflect the ownership interest of the person or dependent’s parent.
   - State or local licenses to conduct a business or practice a profession in Texas.

3. Documents that do not show the establishment to a domicile but will support a student’s claim to have resided in the state for at least 12 months.
   - A Texas high school transcript for the full senior year preceding the official reporting date.
   - A transcript from a Texas institution showing presence in the state for the 12 months preceding the official reporting date.
   - A Texas driver’s license or Texas ID card with an expiration date of not more than four years.
   - Cancelled checks that reflect a Texas residence for the 12 months preceding the official reporting date.
   - A current credit report that documents the length and place of residence of the person or the dependent student’s parent or legal guardian.
   - Texas voter registration card that has not expired.
   - Pay stubs for the 12 months preceding the official reporting date.
   - Bank statements reflecting a Texas address for the 12 months preceding the official reporting date.
FINANCIAL INFORMATION

• Ownership of real property with copies of utility bills for the 12 months preceding the official reporting date.
• Registration or verification from licensor, showing Texas address for licensee.
• Written statements from the office of one or more social service agencies, attesting to the provision of services for at least 12 months preceding the official reporting date.
• Lease or rental of real property, other than campus housing, in the name of the person or the dependent student's parent or legal guardian for the 12 months preceding the official reporting date.

4. Documents which can be used to demonstrate residency within the boundaries of the independent school districts of Aldine, Conroe, Cypress-Fairbanks, Humble, Klein, Magnolia, New Caney, Splendora, Spring, Tomball, and Willis.
• Driver's license of Texas ID card showing an address within the district.
• Rental or lease agreement showing an address within the district.
• Deed to real property located within the district.
• Utility bills from an address within the district.
• A current voter registration card.
• A current credit report that documents the place of residence of the person or dependent student's parents or legal guardians.

Students who hold visas that enable them to domicile in the United States are allowed to be treated like permanent residents. Students who fall into this category must provide proof of eligibility by showing a copy of their CIS receipt when the petition was filed. The document must include the student’s name and the form that was filed.

A student including an international student (regardless of their immigration status) who enters a Texas institution of higher education in fall 2001 or later shall be classified a resident of Texas for tuition purposes if he or she:

1. Attended a Texas public or accredited private high school for at least 36 months immediately prior to high school graduation;
2. Resided in Texas for at least 36 months immediately prior to receiving a GED as an alternative to a high school diploma;
3. Continuously resided in Texas for the 12 months prior to the official day of record for the semester in which the student registers;
4. Registering for the first time after fall 2001;
5. Provides to the college an affidavit that he or she intends to file an application to become a permanent resident of the United States at the earliest opportunity the individual is eligible to do so.

Changes in Residency Status

If a student continues to enroll in at least one fall or spring semester each year, the student’s residency status will remain the same unless the student files to change the residency status. It is the student’s responsibility to change the residency status if their residency changes. If the student is changing residency status to in-state or in-district and will qualify for lower fees, the student must file the request to change residency status prior to the official reporting date of the semester. Changes made after this date will be effective for the following term.
### Fee Schedule*

<table>
<thead>
<tr>
<th>Fee Type</th>
<th>Amount/Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applied music (MUAP) fees (per semester)</td>
<td>see schedule</td>
</tr>
<tr>
<td>ASSET and COMPASS exams ($10 for each individual part taken)</td>
<td>$29.00</td>
</tr>
<tr>
<td>Audit</td>
<td>charges equal to credit enrollment</td>
</tr>
<tr>
<td>CLEP, credit by exam posting fee</td>
<td>none</td>
</tr>
<tr>
<td>Course/core competency challenge exam</td>
<td>$25.00</td>
</tr>
<tr>
<td>International student insurance fee</td>
<td>see international student adviser</td>
</tr>
<tr>
<td>Lab fees</td>
<td>see schedule</td>
</tr>
<tr>
<td>Payment plan service fee (per semester)</td>
<td>$20.00</td>
</tr>
<tr>
<td>Payment plan late fee (per late payment)</td>
<td>$25.00</td>
</tr>
<tr>
<td>Portfolio evaluations</td>
<td>$60.00</td>
</tr>
<tr>
<td>Registration per semester</td>
<td>$12.00</td>
</tr>
<tr>
<td><strong>Repeat course fee (per credit hour)</strong></td>
<td>$60.00</td>
</tr>
<tr>
<td>Return check (per check)</td>
<td>$25.00</td>
</tr>
<tr>
<td>Student activity fee (per credit hour)</td>
<td>$2.00</td>
</tr>
<tr>
<td>Specialty fees: liability insurance, uniforms, special supplies, etc.</td>
<td>by program</td>
</tr>
<tr>
<td>Technology fee (per credit hour)</td>
<td>$6.00</td>
</tr>
<tr>
<td>THEA exam</td>
<td>$29.00</td>
</tr>
<tr>
<td>Transcript</td>
<td>None</td>
</tr>
</tbody>
</table>

* These fees are subject to change by board or legislative action.

** Students who repeat most courses will be assessed an additional fee of $60 per credit hour when they enroll in a course for the third or more times.

### REFUND POLICY

The refund policy for North Harris Montgomery Community College District is based upon the assumption that student tuition and fees provide only a portion of the actual incurred costs to provide educational opportunities. When a student enrolls in a class, a place is reserved which cannot be given to another student. This represents a significant cost to the district whether or not class enrollment is continued.

Refunds will be made under the following conditions in compliance with the Texas Higher Education Coordinating Board Policy:

1. If the college cancels or discontinues a scheduled course, a 100 percent refund is granted.

2. Students who drop a course or who totally withdraw will have their tuition and fees (EXCEPT for the registration fee) refunded according to the following drops and withdrawals schedule:

   Note: Title IV (Federal Pell Grant, FSEOG, FFE Loans) aid recipients are subject to a different policy upon complete withdrawal of classes (Refer to page 60.)

   Refunds for tuition are processed from NHMCCD District Services and Training Center four to six weeks after the official day of record. Not all refunds are mailed; those paying with credit/debit cards have refunds credited back to the card account. Refunds for courses scheduled outside the sessions listed in this section will be made on a prorated basis in accordance with the refund policy.
FINANCIAL INFORMATION

**Semester Length Courses**

**Fall and Spring Semesters**

Prior to the first calendar day of the semester ................................................... 100%

During the first 15 calendar days of the semester ................................................... 70%

During the 16th through 20th calendar days of the semester ................................. 25%

After the 20th calendar day of the semester ......................................................... None

**Six-Week Summer Semester**

Prior to the first calendar day of the semester ......................................................... 100%

During the first five calendar days of the semester ................................................. 70%

During the sixth and seventh calendar days of the semester ................................. 25%

After the seventh calendar day of the semester .................................................... None

**Flex Entry and Non-Semester Length Courses**

Prior to the first scheduled calendar session ......................................................... 100%

After classes begin, see drops and withdrawals chart.

---

<table>
<thead>
<tr>
<th>Length of Class Term in Weeks</th>
<th>Last Day for 70 percent Refund</th>
<th>Last Day for 25 percent Refund</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 weeks or less</td>
<td>2nd day of term</td>
<td>N/A</td>
</tr>
<tr>
<td>3 weeks</td>
<td>3rd day of term</td>
<td>4th day of term</td>
</tr>
<tr>
<td>4 weeks</td>
<td>4th day of term</td>
<td>5th day of term</td>
</tr>
<tr>
<td>5 weeks</td>
<td>5th day of term</td>
<td>6th day of term</td>
</tr>
<tr>
<td>6 weeks</td>
<td>5th day of term</td>
<td>7th day of term</td>
</tr>
<tr>
<td>7 weeks</td>
<td>7th day of term</td>
<td>9th day of term</td>
</tr>
<tr>
<td>8 weeks</td>
<td>8th day of term</td>
<td>10th day of term</td>
</tr>
<tr>
<td>9 weeks</td>
<td>9th day of term</td>
<td>11th day of term</td>
</tr>
<tr>
<td>10 weeks</td>
<td>9th day of term</td>
<td>12th day of term</td>
</tr>
<tr>
<td>11 weeks</td>
<td>10th day of term</td>
<td>14th day of term</td>
</tr>
<tr>
<td>12 weeks</td>
<td>12th day of term</td>
<td>15th day of term</td>
</tr>
<tr>
<td>13 weeks</td>
<td>13th day of term</td>
<td>16th day of term</td>
</tr>
<tr>
<td>14 weeks</td>
<td>13th day of term</td>
<td>17th day of term</td>
</tr>
<tr>
<td>15 weeks</td>
<td>14th day of term</td>
<td>19th day of term</td>
</tr>
<tr>
<td>16 weeks or longer</td>
<td>15th day of term</td>
<td>20th day of term</td>
</tr>
</tbody>
</table>

*Refer to class schedule for exact dates.*
REGULATIONS CONCERNING CHECKS

1. A returned check charge of $25 will be assessed if a check presented in payment of a student’s obligation to the college is returned for any reason.
2. Checks returned unpaid for any reason must be promptly redeemed, or registration in the college may be cancelled and all records withheld.
3. No check presented in payment of fees, deposit or tuition or for the purchase of books or equipment will be accepted for a sum larger than the total amount due the college in the transaction.
4. No postdated checks will be accepted by the college.

REGULATIONS CONCERNING CHARGE CARDS

1. VISA, MasterCard, American Express, and Discover will be accepted for payment of tuition and fees.
2. Refunds will be processed as a credit to the charge card.

ESTIMATED COSTS PER SEMESTER

The following estimates are based on an average, full-time course load of 12 hours. Books are estimated at $25 per credit hour, and lab fees are based on an average fee.

<table>
<thead>
<tr>
<th>IN-DISTRICT RESIDENT</th>
<th>OUT-OF-DISTRICT RESIDENT</th>
<th>INTERNATIONAL / OUT-OF-STATE RESIDENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tuition (@ $36 per hour, plus $6 per hour Technology Fee, plus $2 per hour Student Activity Fee) $528</td>
<td>Tuition (@ $36 per hour, plus $6 per hour Technology Fee, plus $2 per hour Student Activity Fee) $528</td>
<td>Tuition (@ $36 per hour, plus $6 per hour Technology Fee, plus $2 per hour Student Activity Fee) $528</td>
</tr>
<tr>
<td>Registration Fee 12</td>
<td>Out-of-District (@ $40 per hour) 480</td>
<td>Out-of-state (@ $55 per hour) 660</td>
</tr>
<tr>
<td>2 Lab Fees (@ $12 per course) 24</td>
<td>Registration Fee 12</td>
<td>Registration Fee 12</td>
</tr>
<tr>
<td>Books 300</td>
<td>2 Lab Fees (@ $12 per course) 24</td>
<td>2 Lab Fees (@ $12 per course) 24</td>
</tr>
<tr>
<td>Total Per Semester $864</td>
<td>Books 300</td>
<td>Books 300</td>
</tr>
<tr>
<td></td>
<td>Total Per Semester $1,344</td>
<td>Total Per Semester $1,524</td>
</tr>
</tbody>
</table>
Records Policies and Procedures

Transfer of Credit From Other Institutions
Equivalent college course credits earned at other accredited institutions may apply to degrees awarded by North Harris Montgomery Community College District if at least a grade of “D” was earned. Official transcripts from all previous institutions attended are needed before admission and registration for prerequisites and placement. Official transcripts MUST be received before subsequent registration or before a student is admitted to any degree or certificate program. NHMCCD has a commitment to evaluate official transcripts or transfer work during a student’s first semester of enrollment. If requested, it is the student’s responsibility to bring in course descriptions so the evaluator may determine if it is equivalent to a NHMCCD course.

International Transcripts
Should a student wish to use credits obtained from an institution outside the boundaries and territories of the United States toward a certificate or degree from NHMCCD, a course by course evaluation must be done by one of the following:

1. American Association for Collegiate Registrars and Admissions Officers (AACRAO) International Education Services, or
2. By an evaluation service which is a member of the National Association of Credential Evaluation Services Inc. (NACES)

Evaluations must be provided in addition to the official transcripts of credit. A list of evaluation providers affiliated with NACES is available from the admissions office. This evaluation must be mailed directly from the agency to the college or student information services office.

Transcripts of Credit From North Harris Montgomery Community College District
The transcript of credit earned is an official copy of the student’s complete academic record accumulated at North Harris Montgomery Community College District. Transcripts can be requested through My Records web site. After the request has been submitted or after the close of a semester, the student should allow approximately one week for delivery.

Copies of student transcripts from another school will not be released through NHMCCD. Official transcripts should always be requested from the institution at which credit was earned.

Official transcripts may be withheld if any financial obligations to the district have not been paid or if official transcripts have not been received from previously attended institutions.

Registration in subsequent semesters will not be allowed until all outstanding debts with the district are cleared and/or official transcripts received.

Grade Reports
Students are expected to monitor progress in their courses. Final grade reports are available at https://stargazer.nhmccd.edu/datatel/openweb at the end of each semester.

Students should review the transcript/grade report for accuracy. All requests for corrections or review must be submitted to the admissions office within 12 months of the close of the semester in which the course was taken. Requests submitted after this period will not be accepted.

Repetition of Courses
When a student repeats a course, all grades remain on the record with a notation for the course no longer used in GPA calculation. It is the student’s responsibility to fill out a course repeat form and to request an adjustment of the cumulative grade point average. The highest grade received is the permanent grade for the course. Repeated courses may also be designated by college officials with the GPA being adjusted accordingly. When a course is repeated, the credit hours will be counted only once toward graduation, unless a degree plan specifies that a course may be repeated for additional credit. If a student registers again for a course with a current mark of “I,” the “I” becomes an “F.” Most courses that are repeated three or more times will have an additional fee of $60 per credit hour.

Classification Status
First year student – 0 to 29 semester hours of credit earned.
Second year student – 30 to 72 semester hours of credit earned.
Enrollment Status
For the fall, spring or summer semester, a full-time student is one enrolled in at least 12 semester hours as of the official day of record of the semester. Verifications of enrollment are not released until the official day of the semester.
Exceptions may be permitted for special programs. Contact the admissions office for additional information concerning certification of enrollment status.
Veteran’s status must be verified with the veteran services office.

Release Of Student Records Policy
In compliance with the Family Educational Rights and Privacy Act of 1974, North Harris Montgomery Community College District gives notice that the following types of information will be released upon request and may require approval of the appropriate administrator, unless the student desires to withhold all or any portion of it: student’s name, address, NHMCCD e-mail address, telephone listing, date and place of birth, major field of study, participation in officially recognized activities and sports, semesters enrolled, degrees, certificates and awards received, enrollment status, student classification, and the most recent previous educational agency or institution attended by the student.
Any student objecting to the release of all or any portion of such information must notify the admissions office in writing as soon as possible during each semester of enrollment.
Release of any additional information pertaining to student records must be authorized by the student (i.e., grades, transcripts). The student’s parents may authorize release of information if the student is younger than 18 years of age and a dependent as defined by the Internal Revenue Service. A student or parents of a student under the age of 18 may request to view the student’s educational records with a written request to the student services office at the college(s) attended.

Degree Plans And Transfer Guides
Counselors and faculty advisers will assist students in planning course schedules to meet specific degree plans or certificates as outlined in this catalog. A currently enrolled student whose goal is to pursue a baccalaureate degree may request a transfer guide which provides specific information relating to course transfer to other colleges or universities.
Students who are currently enrolled may complete a degree plan request in the admissions office at each college. Official transcripts of all previous work, bearing the college seal and appropriate official’s signature, are required before the request is processed. Many transfer guides are available online www.nhmccd.edu or at the NHMCCD colleges.

Transfer To Other Institutions
It is the responsibility of each student to check with the institution to which he or she expects to transfer as soon as this choice is made. It is also the student’s responsibility to be sure that courses are selected that will be acceptable for the chosen program of study at the four-year institution. A careful review of the current catalog from the chosen college or university will answer most questions. There have been some statewide fields of study (agreements between community colleges and universities) that have been approved by the Texas Higher Education Coordinating Board (THECB) for a selected group of majors. See the advising/counseling office for additional information. Students may also sign up for the Joint Admissions Program. Visit http://www.tuc.edu/services/jointadmissions.htm for more information.

1. A 2.0 “C” grade point average is generally sufficient to gain admission to a four-year college upon transfer, but there are some colleges and universities which require a grade point average above 2.0. Admission to certain fields of study may require a higher grade point average than the general college requirements for admission.
2. Students who enroll in classes in excess of 30 hours beyond the baccalaureate degree plan may be required to pay out-of-state tuition rates.
3. The student should consult with the counseling/advising office for information regarding transferability of course work. In addition, the student should contact the director of admissions of the college to which the transfer is planned for specific admission requirements and evaluation of transfer work. The THECB has enacted specific steps to resolve transfer disputes involving first- or second-year courses.
   a. If an institution of higher education does not accept course credit earned by a student at another institution of higher education, the receiving institution shall give written notice to the student and to the sending institution.
that transfer of the course credit is denied. A receiving institution shall also provide written notice of the reasons for denying credit for a particular course or set of courses at the request of the sending institution.

b. A student who receives notice as specified in Subsection (1) may dispute the denial of credit by contacting a designated official at either the sending or the receiving institution.

c. The two institutions and the student shall attempt to resolve the transfer of the course credit in accordance with THECB rules and guidelines.

d. If the transfer dispute is not resolved to the satisfaction of the student or the sending institution within 45 days after the date the student received written notice of denial, the institution that denies the course credit for transfer shall notify the Commissioner of its denial and the reasons for the denial.

e. The commissioner of higher education or the commissioner’s designee shall make the final determination about a dispute concerning the transfer of course credit and give written notice of the determination to the involved student and institutions.

f. The THECB shall collect data on the types of transfer disputes that are reported and the disposition of each case that is considered by the commissioner or the commissioner’s designee.

g. If a receiving institution has cause to believe that a course being presented by a student for transfer from another school is not of an acceptable level of quality, it should first contact the sending institution and attempt to resolve the problem. In the event that the two institutions are unable to come to a satisfactory resolution, the receiving institution may notify the Commissioner of Higher Education, who may investigate the course. If its quality is found to be unacceptable, the Board may discontinue funding for the course.

4. Some courses in the program of instruction may not transfer. Several are designed specifically for job entry or career preparation, and these frequently are not transferable. Such courses are listed in the associate of applied science degree plans and the requirements for a certificate. Since developmental courses will not apply toward the completion of a degree, they do not transfer. In other instances, courses in our curriculum which are taught at the junior level or above in a senior institution usually will transfer only as electives, not as equivalent courses. Check with the counseling/advising office for specific information.

5. An official transcript of credit earned at NHMCCD will be forwarded only upon the student’s written or electronic request. Transcripts of credit earned at colleges or universities other than NHMCCD must be requested from that school by the student.

6. Tuition rebates up to $1,000 are available to students if they complete their bachelor’s degree with having attempted no more than three (3) hours above the requirements for the degree. This program is available for coursework related to the first baccalaureate degree received from a Texas public university, and it is available for students who have enrolled for the first time in higher education in the fall 1997 semester or later. The student must be a Texas resident and attempted all coursework at a Texas public institution of higher education.

Please contact the admissions office at the university where you intend to enroll after completing your work at NHMCCD.

**Common Course Numbering System**

NHMCCD is part of a group of Texas colleges and universities that teach courses similar in nature and have been designated with common numbers. The purpose of assigning a common number is to facilitate transferability of courses among participating institutions.

The Texas Common Course Numbering System (TCCNS) is designed to help identify courses needed when transferring to another member institution after completion of course work at NHMCCD. Courses contained in the TCCNS are general academic courses (not developmental courses and workforce courses).

More information about the TCCNS at NHMCCD may be obtained at http://www.tccns.org or by visiting the admissions office.

Students currently enrolled at another institution should contact the appropriate departments at that institution for information.
COURSE NUMBERING SYSTEM
Courses numbered from 1000 to 2999 are college-level courses.
Courses numbered 0000 to 0999 are considered developmental/pre-college level. These courses carry institutional credit, but are not considered transferable. Credits from these courses do not meet degree requirements.

CREDIT FOR COURSES
The semester hour is the unit of measurement at North Harris Montgomery Community College District. One semester credit hour is generally defined as one hour of class per week for a 16-week semester lecture course. The number of semester hours for a course which includes a laboratory, practicum, or internship component varies.

It is the student’s responsibility to take courses in sequence and at the proper level.

FLEXIBLE SCHEDULE OPTIONS
The colleges of NHMCCD offer a number of alternatives which require fewer student trips to campus and allow more flexible ways of learning than traditional semester-length college credit courses.

Flexible Schedule Classes:
Flexible schedule credit classes are those that provide varied meeting times between a faculty member and student and which require visits by the student to campus during the semester or term. These courses are offered through several delivery systems including:
- Internet (Web)
- Video
- Computer

Online Learning:
The instruction for online learning classes is delivered via the Internet. Students must have access to a computer and Internet services. Proctored exams may be required.

Weekend College:
Classroom credit courses are scheduled Friday night, Saturday, or Sunday, normally meeting one day a week.

Minicourses:
Minicourses are credit courses offered in a condensed time frame but with the standard number of contact hours.

CLASS ATTENDANCE
Students are expected to abide by the faculty member’s attendance policy as stated in the course syllabus. It is the student’s responsibility to consult with faculty members regarding absences and the possibility of make up work.

STUDENT ABSENCE ON RELIGIOUS HOLY DAYS
The student must notify the faculty member in writing within the first 12 days of the semester of the intent to be absent due to a religious holy day. Under Texas Education Code 51.911, a student who is absent from classes for the observance of a religious holy day shall be allowed to take an examination or complete an assignment scheduled for that day within a reasonable time as established by the faculty member.

COURSE OUTCOMES & EXAMINATIONS
Course outcomes are provided in the faculty member’s course syllabus to students at the beginning of each course. The evaluation of student course progress and the final grade is based on the degree of mastery of course outcomes.

A final examination or evaluation activity will be given in each course at the end of each semester during the scheduled examination period, unless the faculty member has made special arrangements with the appropriate vice president.
GRADING STANDARDS
There are four grades indicating that credit has been received. One grade (F) and marks listed below indicate that no credit has been achieved. The marks are an accounting device to indicate enrollment in courses with no credit received and no grade points awarded. A mark of CR indicates that the student has received credit for a course but no grade was awarded. In some program areas such as developmental studies and nursing a grade of “C” or above is required to meet degree requirements or indicates that credit has been received.

Using the following system, final grades or marks are reported for each student for every course taken:

<table>
<thead>
<tr>
<th>Grade/Marks Interpretation</th>
<th>Grade Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>A  Excellent Performance</td>
<td>4</td>
</tr>
<tr>
<td>B  Good Performance</td>
<td>3</td>
</tr>
<tr>
<td>C  Acceptable Performance</td>
<td>2</td>
</tr>
<tr>
<td>D  Passing (not available for developmental studies courses)</td>
<td>1</td>
</tr>
<tr>
<td>F  Failing</td>
<td>0</td>
</tr>
<tr>
<td>I  Incomplete. Given instructor approval, work must be completed according to the timelines on the “I” contract but no later than the end of the subsequent fall or spring semester. Failure to complete the work within the specified time will result in an “F.” A student should not register again for a course in which a mark of “I” has been given. If the student registers for the course, the “I” will change to a grade of “F.”</td>
<td>Not Computed</td>
</tr>
<tr>
<td>W  Withdrawal</td>
<td>Not Computed</td>
</tr>
<tr>
<td>IP Course in progress (for developmental courses, or approved special circumstances courses only). Students who earn an IP have participated fully in the class but have not met all criteria for making progress to the next level of courses. IP remains on the transcript.</td>
<td>Not Computed</td>
</tr>
<tr>
<td>NR No Grade reported by faculty member</td>
<td>Not Computed</td>
</tr>
<tr>
<td>* Course repeated at NHMCCD</td>
<td>Not Computed</td>
</tr>
<tr>
<td>NC No credit (prior to September 1982)</td>
<td>Not Computed</td>
</tr>
<tr>
<td>X No credit (prior to September 1975)</td>
<td>Not Computed</td>
</tr>
<tr>
<td>P Course in Progress (prior to September 1993)</td>
<td>Not Computed</td>
</tr>
<tr>
<td>CR Credit awarded</td>
<td>Not Computed</td>
</tr>
</tbody>
</table>
GRADE POINT AVERAGE

Grade points earned for each course are determined by multiplying the number of points for each grade by the number of credit hours the course carries. For example, a student who takes a three-hour course and earns an “A” accumulates 12 grade points for that course. A student’s grade point average is computed by adding the grade point values for all college-level courses for which grade point values (A, B, C, D, F) may be computed, and dividing this total by the appropriate number of credit hours attempted during the same period. Only hours for which grades are awarded are used in calculating the grade point average.

ACADEMIC ACCOUNTABILITY

The academic standards of NHMCCD are based on a philosophy of maximizing student progress toward successful course and program completion. Academic success in college requires maturity and dedication to regular and well-defined study habits. Academic standards criteria are designed to monitor student progress so that student and college staff can intervene and explore options to assist students who have difficulty meeting minimum requirements for successful course or program completion.

Academic standing is computed at the end of each enrollment period and is based upon the following grades and marks (A, B, C, D, F) earned by the student at NHMCCD. Different grade point average calculations are used in determining academic standing:

- **Semester Grade Point Average (GPA)** - includes grades earned in all courses at NHMCCD during the most recent semester (includes developmental courses).
- **Cumulative Credit GPA** - includes grades earned in all college-level classes at NHMCCD (does not include developmental courses).

Academic Standing Categories

**Good Standing** - a student will be considered to be in good academic standing when a student earns both a semester and a cumulative GPA of at least a 2.0

**Academic Progress** - a student will be considered to be making academic progress when a student earns a semester GPA of at least a 2.0 but has a cumulative GPA less than 2.0.

Students who do not maintain the minimum GPA outlined above will be placed on academic warning, academic probation, continued academic probation or academic suspension. These four academic status levels alert the student, faculty and staff to problems in the student’s academic performance so that strategies for intervention and assistance can be employed.

Students placed into one of the following academic standings are expected to take advantage of the many college resources that are available on each campus and are encouraged to establish contact with their college counseling center for additional support and assistance.

In addition, students in these standings may be required to register for a reduced course load; register for specific courses or to participate in specially designed programs designated by the college.

**Academic Warning** - The first time a student earns a semester GPA of less than a 2.0, the student is placed on academic warning.

**Academic Probation** - The second time a student earns a semester GPA of less than a 2.0, the student is placed on academic probation.

**Continued Academic Probation** - Once a student has been on academic warning and probation, any additional semester GPA of less than a 2.0 will result in a status of continued academic probation if the cumulative GPA is 2.0 or higher. Students may still enroll in classes under the guidelines stated above.

**Academic Suspension** - a student with a continuing history of low academic performance is placed on academic suspension when both the semester GPA and cumulative GPA is below a 2.0. An academic suspension will result in a student being denied enrollment for a minimum of one spring or fall semester. Students desiring to appeal a suspension must follow the guidelines stipulated by the individual college at which the majority of their courses have been completed. For more information on appealing a suspension, students may contact their college counseling center.
A student who re-enters the college after having been suspended will return on academic probation status and will be subject to the requirements outlined above.

Financial Aid Students - students receiving financial assistance must make satisfactory academic progress in accordance with this district policy and are also subject to the academic progress requirements governing financial assistance awards. Students on academic warning, probation, continued probation or suspension and also receiving financial assistance are encouraged to contact their college financial aid office to determine further eligibility.

ACADEMIC ACHIEVEMENT RECOGNITION

There are several ways that outstanding academic achievement by students is recognized at NHMCCD colleges. Graduates are recognized as follows:

- Students who earn a degree from a NHMCCD college with a cumulative GPA of 3.9-4.0 will be acknowledged by Summa Cum Laude on the diploma.
- Students who attain a cumulative GPA of 3.7 - 3.899 will be acknowledged by Magna Cum Laude on the diploma.
- Students who attain a cumulative GPA of 3.5 - 3.699 will be acknowledged by Cum Laude on the diploma.
- Students receiving a certificate with a cumulative 4.0 GPA will be acknowledged by With Distinction on the diploma in recognition of this achievement.

Currently enrolled students are acknowledged each semester through the President’s List if they have accumulated at least 12 credit hours (including Developmental Studies hours) and have a semester grade point average of 3.30 or above for 6 or more credit hours taken that semester. All “I” grades must be changed to a letter grade prior to computing the cumulative GPA for President’s List status.

HONORS PROGRAM

NHMCCD offers an innovative honors program for highly motivated, academically capable students. Honors students enjoy the freedom to work independently and collaboratively with faculty who encourage lively, engaging discourse and challenging activities inside and outside the classroom.

Honors credit is earned through special contracts or classes with faculty members who are committed to an open-ended approach to learning. Students have many opportunities to contribute extensively and creatively through small group interaction, seminars, laboratories, oral reports, special research topics, informed discussion and/or individual and group projects.

Involvement in the Honors Program can result in several levels of recognition for students. These are:

- Students successfully completing an honors course will receive appropriate designation on their transcripts.
- Students who complete 15 hours of honors credit with a 3.5 GPA will be recognized at commencement and will receive the designation of Honors Program Graduate on their transcript.
- Students completing 9 hours of honors credit with a 3.5 GPA and 25 hours of community service will receive the designation of Honors Scholar Graduate on their transcript.
- Students who complete 15 hours of honors credit with a 3.5 GPA and 25 hours of community service will be recognized at commencement and will receive the designation of Honors Scholar with Distinction on their transcript.

Phi Theta Kappa:

Colleges within the district all have active chapters of Phi Theta Kappa International Honor Society. Students who have a 3.5 cumulative GPA or higher, have completed at least 12 college-level credit hours, and are currently enrolled in at least three credit hours are eligible for PTK membership. In addition to emphasizing academic excellence, Phi Theta Kappa International Honor Society promotes the hallmarks of leadership, service, and fellowship among its members. In recent years, members from the colleges’ chapters have held several leadership positions within both the international and the Texas region of this society and have been recognized with numerous awards. Graduating students belonging to the local and national Phi Theta Kappa International Honor Society will be
recognized in the commencement program and wear the Phi Theta Kappa International Honor Society stole with their regalia.

Service-Learning:
Service-learning combines community service with academic instruction to create an opportunity for experiential learning. Students will find service-learning opportunities offered in a variety of courses district-wide. Students who engage in a minimum of 15 hours of service-learning activities in a course will receive service-learning designation for the course on the transcript.

AWARD OF CREDIT FOR NON-TRADITIONAL EXPERIENCES

ADVANCED STANDING
Advanced standing permits the student to move to more advanced work by the equating of test results, previous grades and/or interviews by the appropriate department. Advanced standing is not placed on a student’s official transcript. No credit is awarded. There is no fee for this evaluation. Contact the dean of the specific subject area for more information.

For additional information and levels/scores for advanced standing, contact the counseling/advising office.

CREDIT BY INTERNAL CHALLENGE EXAMS
District course challenge exams are developed and approved by NHMCCD curriculum teams, and administered by the college division. The same course challenge exam, cooperatively developed by the curriculum team for the department, is used at all campuses. Credit awarded by NHMCCD through course challenge exams applies to its programs of study. Other academic institutions may not accept credit obtained through NHMCCD Course challenge exams.

1. Students receiving credit by examination must be fully admitted to NHMCCD at the time credit is awarded.
2. All credit by examination must be equated with an NHMCCD course number and description.

3. Credit by examination will be recorded on the student’s official transcript without grade equivalent or inclusion in the student’s GPA.
4. Applicable test fees must be paid in advance. The following courses can be completed by taking an internal challenge exam. For further information on exams and other course requirements, click on http://eps.nhmccd.edu/PLA/InternalExams.htm or contact the program area of interest at one of our campuses.

| AUMT 1405 | EMSP 2330 | PHRA 1102 |
| AUMT 1407 | EMSP 2338 | PHRA 1304 |
| CETT 1402 | EMSP 2348 | PHRA 1305 |
| COSC 1401 | EMSP 2434 | PHRA 1309 |
| CSME 1254 | EMSP 2444 | PHRA 1347 |
| CSME 1310 | HART 1407 | PHRA 1413 |
| CSME 1501 | HITT 1305 | PHRA 1449 |
| CSME 1505 | ITAL 1412 | POFT 1309 |
| DFTG 1305 | ITSC 1401 | SGNL 1211 |
| DFTG 1309 | ITSE 1402 | SGNL 1401 |
| DFTG 1325 | ITSW 1301 | SGNL 1402 |
| EMSP 1338 | METL 1405 | WLDG 1428 |
| EMSP 1355 | NDTE 2311 | WLDG 1457 |

CREDIT BY EXTERNAL EXAMINATION
The purpose of the credit by examination program is to provide college credit for work experience and/or educational work without transcript credit. This allows a student to complete undergraduate requirements in less time and at lower cost and to enrich educational experience by taking courses other than those that merely repeat previously learned material.

Competency challenge exams are developed and approved by NHMCCD curriculum teams. For more information, contact the counseling/advising office.

NHMCCD offers course credit to academically qualified entering students. Such credit may be obtained by different methods in certain subject areas.

1. Achievement Test (ACT)
2. College level examination program (CLEP)- Specific subject areas only. No general examinations will be accepted.
3. Advanced placement program by the college board. The AP College Board tests are offered through the high schools.
4. International baccalaureate diploma program examinations.

Tomball College (TC) is the official testing site for CLEP exams at NHMCCD. The registered TC CLEP test center number is 8720. Scores made on the CLEP should be submitted to the counseling office four weeks prior to enrollment.

<table>
<thead>
<tr>
<th>Subject Area</th>
<th>Examination</th>
<th>NHMCCD Course</th>
<th>Min. Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGLISH</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>English Usage</td>
<td>ACT</td>
<td>ENGL 1301</td>
<td>31</td>
</tr>
<tr>
<td>English Language &amp; Composition</td>
<td>AP College Board</td>
<td>ENGL 1301</td>
<td>3</td>
</tr>
<tr>
<td>American Literature</td>
<td>CLEP</td>
<td>ENGL 2327, 2328</td>
<td>46</td>
</tr>
<tr>
<td>American Literature I</td>
<td>PEP</td>
<td>ENGL 2327</td>
<td>C</td>
</tr>
<tr>
<td>American Literature II</td>
<td>PEP</td>
<td>ENGL 2328</td>
<td>C</td>
</tr>
<tr>
<td>English Literature</td>
<td>CLEP</td>
<td>ENGL 2322, 2323</td>
<td>46</td>
</tr>
<tr>
<td>English Language &amp; Composition</td>
<td>AP College Board</td>
<td>ENGL 1301</td>
<td>3</td>
</tr>
<tr>
<td>FOREIGN LANGUAGES</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>French *</td>
<td>CLEP</td>
<td>FREN 1411, 1412</td>
<td>50</td>
</tr>
<tr>
<td>French *</td>
<td>CLEP</td>
<td>FREN 1411, 1412, 2311</td>
<td>55</td>
</tr>
<tr>
<td>French *</td>
<td>CLEP</td>
<td>FREN 1411, 1412, 2311, 2312</td>
<td>61</td>
</tr>
<tr>
<td>Spanish *</td>
<td>CLEP</td>
<td>SPAN 1411, 1412</td>
<td>50</td>
</tr>
<tr>
<td>Spanish *</td>
<td>CLEP</td>
<td>SPAN 1411, 1412, 2311</td>
<td>55</td>
</tr>
<tr>
<td>Spanish *</td>
<td>CLEP</td>
<td>SPAN 1411, 1412, 2311, 2306, 2312</td>
<td>61</td>
</tr>
<tr>
<td>German *</td>
<td>CLEP</td>
<td>GERM 1411, 1412</td>
<td>50</td>
</tr>
<tr>
<td>German *</td>
<td>CLEP</td>
<td>GERM 1411, 1412, 2311</td>
<td>55</td>
</tr>
<tr>
<td>German *</td>
<td>CLEP</td>
<td>GERM 1411, 1412, 2311, 2312</td>
<td>61</td>
</tr>
<tr>
<td>Spanish Language</td>
<td>AP College Board</td>
<td>SPAN 1411, 1412</td>
<td>3</td>
</tr>
<tr>
<td>Spanish Language</td>
<td>AP College Board</td>
<td>SPAN 1411, 1412, 2311</td>
<td>4</td>
</tr>
<tr>
<td>Spanish Language</td>
<td>AP College Board</td>
<td>SPAN 1411, 1412, 2311, 2312</td>
<td>5</td>
</tr>
<tr>
<td>French Language</td>
<td>AP College Board</td>
<td>FREN 1411, 1412</td>
<td>3</td>
</tr>
<tr>
<td>French Language</td>
<td>AP College Board</td>
<td>FREN 1411, 1412, 2311, 2312, 2306</td>
<td>5</td>
</tr>
<tr>
<td>German Language</td>
<td>AP College Board</td>
<td>GERM 1411, 1412</td>
<td>3</td>
</tr>
<tr>
<td>German Language</td>
<td>AP College Board</td>
<td>GERM 1411, 1412, 2311</td>
<td>4</td>
</tr>
<tr>
<td>German Language</td>
<td>AP College Board</td>
<td>GERM 1411, 1412, 2311, 2312</td>
<td>5</td>
</tr>
<tr>
<td>Italian Language</td>
<td>AP College Board</td>
<td>ITAL 1411, 1412</td>
<td>3</td>
</tr>
<tr>
<td>Italian Language</td>
<td>AP College Board</td>
<td>ITAL 1411, 1412, 2311</td>
<td>4</td>
</tr>
<tr>
<td>Italian Language</td>
<td>AP College Board</td>
<td>ITAL 1411, 1412, 2311, 2312</td>
<td>5</td>
</tr>
<tr>
<td>SOCIAL &amp; BEHAVIORAL SCIENCE</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>American Government</td>
<td>CLEP</td>
<td>GOVT 2301</td>
<td>50</td>
</tr>
<tr>
<td>American History I</td>
<td>CLEP</td>
<td>HIST 1301</td>
<td>50</td>
</tr>
<tr>
<td>American History II</td>
<td>CLEP</td>
<td>HIST 1302</td>
<td>50</td>
</tr>
<tr>
<td>US History</td>
<td>AP College Board</td>
<td>HIST 1301 or 1302</td>
<td>4</td>
</tr>
<tr>
<td>Western Civilization I</td>
<td>CLEP</td>
<td>HIST 2311</td>
<td>46</td>
</tr>
<tr>
<td>Western Civilization II</td>
<td>CLEP</td>
<td>HIST 2312</td>
<td>47</td>
</tr>
<tr>
<td>Psychology **</td>
<td>CLEP</td>
<td>PSYC 2301</td>
<td>47</td>
</tr>
<tr>
<td>Sociology</td>
<td>CLEP</td>
<td>SOCI 1301</td>
<td>53</td>
</tr>
<tr>
<td>Statistics</td>
<td>CLEP</td>
<td>PSYC 2317</td>
<td>50</td>
</tr>
<tr>
<td>Psychology</td>
<td>AP College Board</td>
<td>PSYC 2301</td>
<td>3</td>
</tr>
<tr>
<td>BUSINESS</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Introductory Accounting</td>
<td>CLEP</td>
<td>ACCT 2401, 2402</td>
<td>52</td>
</tr>
<tr>
<td>Principles of Management</td>
<td>PEP</td>
<td>BMGT 1303</td>
<td>45</td>
</tr>
<tr>
<td>Production &amp; Operations Mgmt</td>
<td>PEP</td>
<td>BMGT 1331</td>
<td>45</td>
</tr>
</tbody>
</table>

Continued next page
**ACADEMIC INTEGRITY**

The district upholds the core values of learning: honesty, respect, fairness, and accountability. We promote the importance of personal and academic honesty. We embrace the belief that all learners, students, faculty, staff and administrators, will act with integrity and honesty and must produce their own work and give appropriate credit to the work of others. No fabrication of sources, cheating, or unauthorized collaboration is permitted on any work submitted within the district.

Consequences for academic dishonesty to be determined by the professor, or the professor and academic dean, or the professor and chief student services officer can include but are not limited to:

1. having additional class requirements imposed
2. receiving a grade of zero or “F” for an exam or assignment
3. receiving a grade of “F” for the course
4. being withdrawn from the course or program
5. being expelled from the college district

Professors should clearly explain how the student’s actions violated the academic integrity policy, how a grade was calculated, and the actions taken.

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**MATH AND SCIENCE**

<table>
<thead>
<tr>
<th>Subject Area</th>
<th>Examination</th>
<th>NHMCCD Course</th>
<th>Min. Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Math Usage</td>
<td>ACT</td>
<td>MATH 1314</td>
<td>28</td>
</tr>
<tr>
<td>College Algebra</td>
<td>CLEP</td>
<td>MATH 1314</td>
<td>50</td>
</tr>
<tr>
<td>Precalculus</td>
<td>CLEP</td>
<td>MATH 2412</td>
<td>50</td>
</tr>
<tr>
<td>Calculus with Elementary Functions</td>
<td>CLEP</td>
<td>MATH 2413</td>
<td>50</td>
</tr>
<tr>
<td>Biology</td>
<td>AP College Board</td>
<td>BIOL 1406, 1407</td>
<td>4</td>
</tr>
<tr>
<td>Math Calculus AB</td>
<td>AP College Board</td>
<td>MATH 2413</td>
<td>3(AB)</td>
</tr>
<tr>
<td>Math Calculus BC</td>
<td>AP College Board</td>
<td>MATH 2413, 2414</td>
<td>4(BC)</td>
</tr>
<tr>
<td>Math Calculus BC</td>
<td>AP College Board</td>
<td>MATH 2413</td>
<td>3(BC)</td>
</tr>
<tr>
<td>Chemistry</td>
<td>AP College Board</td>
<td>CHEM 1411, 1412</td>
<td>4</td>
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</table>

**ARTS, MUSIC**

<table>
<thead>
<tr>
<th>Subject Area</th>
<th>Examination</th>
<th>NHMCCD Course</th>
<th>Min. Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Music Theory</td>
<td>AP College Board</td>
<td>MUSI 1211, 1216</td>
<td>4</td>
</tr>
<tr>
<td>Studio Art, History of Art ***</td>
<td>AP College Board</td>
<td>ARTS 1311, 1316</td>
<td>3</td>
</tr>
</tbody>
</table>

A student who wishes to take the French/German/Spanish (F/G/S)-CAPE placement exam will be placed into the following classes:

<table>
<thead>
<tr>
<th>EXAM</th>
<th>CAPE SCORE</th>
<th>CLASS PLACEMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>F/G/S-CAPE</td>
<td>277-329</td>
<td>Student places in 1412 *</td>
</tr>
<tr>
<td>F/G/S-CAPE</td>
<td>330-389</td>
<td>Student places in 2311 #</td>
</tr>
<tr>
<td>F/G/S-CAPE</td>
<td>390-424</td>
<td>Student places in 2312 #</td>
</tr>
</tbody>
</table>

The following footnotes refer to activities which must take place on campus. Please contact the counseling office for additional information.

* Students are placed according to the score they obtain on the computerized test. Further assessment may be required for students without formal learning experience. Upon completion of the course with a grade of C or better, the student receives credit for the course and can request credit for the lower level courses.

** Interview and an essay in the foreign language required.

*** Portfolio review with NHMCCD faculty
ACADEMIC APPEALS

An academic appeal is a formal request by a student to change a grade or to challenge a penalty imposed for violation of standards of academic integrity such as plagiarism or cheating. A request to change a grade or to challenge a penalty must be made within twelve months of the action. A grade may only be changed by the instructor of record (or by a full-time instructor in the absence of the instructor of record) or by the Academic Appeals Committee.

An academic appeal will be considered if there is evidence that one or more of the following conditions exist: (1) error in calculation of grade; (2) deviation from the syllabus or district policy manual; (3) disparate academic treatment of a student that is not addressed by EEO processes; or (4) inappropriate penalties imposed for an academic integrity violation. An appeal will not be considered because of general dissatisfaction with a grade, penalty, or outcome of a course. Disagreement with the instructor’s professional judgment of the quality of the student’s work and performance is also not an admissible basis for an academic appeal.

Before a student may bring an academic appeal, he or she should first meet with the instructor to request that a change be made. If the student is not satisfied with the outcome or cannot consult with the instructor, he or she must meet with the appropriate dean to determine if resolution can be reached.

If resolution is not reached and the student desires to pursue the appeal, the student will state specifically the basis of the appeal in writing to the instructional vice president. If the instructional vice president determines that the appeal does not meet the requirements of this policy, he/she shall communicate this in writing to the student. The decision of the vice president is final.

If the instructional vice president determines that the appeal is appropriate under this policy, he/she will convene the Academic Appeals Committee to consider the complaint. The instructional vice president will notify the student regarding the Academic Appeals Committee meeting date, his/her rights, and next steps in the process.

An Academic Appeals Standing Committee will be appointed at each college for one year by the instructional vice president and shall consist of:
1. Four full-time faculty members who will be appointed by the instructional vice president. One of the four faculty members will be appointed by the instructional vice president as chairperson of the committee.
2. Two students who will be nominated by the chief student affairs officer.
3. Members will be replaced or added by the instructional vice president if conflict of interest is apparent or specific expertise is required in regard to the circumstances of an appeal.

The committee will be convened by the chairperson in a timely manner and will conduct its activities in private. The student and the faculty member will be permitted to present witnesses and evidence relevant to the appeal.

The committee will not be bound by rules of evidence and will conduct its hearing in an informal manner. The student or faculty member may have a representative present but that person is not allowed to participate during the hearing. A two-thirds majority vote of the full committee shall be required to change the grade, penalty or academic action at issue.

The committee will inform the instructional vice president of its decision in writing. The instructional vice president will notify the student and faculty member in writing of the committee’s decision. The decision of the Academic Appeals Committee is final.

REQUESTS FOR COURSES

Students’ suggestions of courses to offer are an important part of course and curriculum planning. Requests should be made as follows:

- If the course is listed in the catalog, a student may present a request to either the dean or the instructional vice president that the course be placed on the schedule.
- If the course or program is not listed in the catalog, a written request may be made to the dean or to the vice president of instruction for the course or program to be added to the curriculum.
LIBRARY

The library at each college provides print, electronic, and audio visual resources and services for students and faculty. The materials have been selected to serve the curricular, workforce and leisure needs of the college community.

NHMCCD libraries participate in several reciprocal/joint borrowing agreements, including the statewide program known as TexShare and the local Harmonic Consortium group which includes both Montgomery and Harris County public library systems. TexShare is a state-wide academic library cooperative program that encourages reciprocal borrowing privileges at all participating college and university libraries in Texas. Through the Harmonic Consortium, two of the NHMCCD libraries, located at Cy-Fair College and Tomball College provide borrowing privileges with the Montgomery County Memorial Library System and the Harris County Public Library system.

The libraries maintain a common electronic catalog of holdings, so that students at any college have online access to the districtwide collection. Each college library also provides online access to a variety of information including full-text databases, indexes to journals, and a variety of internet resources. Library users are able to access the library’s electronic resources remotely from their home computers or from their job workstations. Library facilities and selected services are available to the community according to districtwide policies.

NHMCCD is also a member of Online Computer Library Center Inc. (OCLC). Affiliation with this international organization enables the district to supplement the collection by cooperative arrangements for sharing resources with other institutions in the community, region, state and nation through affiliation with the OCLC Interlibrary Loan Subsystem. Further information on both intra- and interlibrary loans is available from the library at any college. Students are responsible for clearing their library records before the end of each semester. Official transcripts will not be released and registration for subsequent semesters may not be allowed until all obligations with the library are cleared.

LEARNING CENTERS

Learning Centers at each college provide facilities and services to extend learning beyond the classroom and to enable students to achieve academic goals. Services may include individualized tutoring in reading, writing, math, science, foreign languages, ESL and other disciplines, group sessions and workshops on student success skills, research skills, course related materials, Internet access, and computer programs, as well as academic testing. Facilities may include computer labs providing access to e-mail, the Internet, and course related software, as well as specialized labs supporting specific disciplines. Materials supporting both direct course outcomes and generalized study skills are available from the Internet, in print, or through audio-visual aids.

THE DEVELOPMENTAL STUDIES PROGRAM

The function of the developmental program is to involve students in building relevant skills necessary for success in college-level courses and programs. The program includes courses, lab assignments, tutorials, seminars, learning activities, and a referral system. Developmental courses are offered in English, English as a second language (ESL), human development, and math. Developmental course numbers begin with a zero; the course description section of this catalog provides specific information about these courses.

Developmental courses appear on transcripts from NHMCCD but do not transfer to four-year institutions, nor do they apply to NHMCCD degrees or certificates.

GED, HIGH SCHOOL EQUIVALENCY

The district offers a high school equivalency preparation and examination program. The GED exam is administered on a regular schedule. Consult the continuing education office or Web site at www.nhmccd.edu for further information and for registration.
A wide range of student development programs are provided by North Harris Montgomery Community College District. These services are designed to complement the instructional programs and to provide individual attention to the needs of students.

**COUNSELING AND ADVISING SERVICES**

Counseling and advising offices provide individual attention to all students enrolled in the college. These services assist students in achieving educational and personal goals. Students are encouraged to make realistic choices between curricula that are specifically designed to prepare them for an occupation upon completion of course work at NHMCCD and those that are designed for an extended academic education in four-year institutions.

Counselors and advisers are available for day and evening appointments. Students are encouraged to contact a counselor or adviser when any of the following services are needed:

- **Educational Academic Counseling/Advising** - Students find help in selecting a major, resolving academic difficulties and planning for further educational pursuits.
- **Career Exploration** - Students are able to acquire information concerning their abilities, interests and personality traits, essential knowledge in making an informed and intelligent career choice. Occupational information is available in the counseling/advising office, the career services office, the library, and online.
- **Human Enrichment Seminars and Group Counseling** - Gives support in values clarification, goals, life adjustments, study skills, and other concerns.
- **New Student Orientation** - Students enrolling at NHMCCD for the first time are required to complete a New Student Orientation prior to registering. The orientation is designed to familiarize new students to the college experience and to help them succeed. This can be done online at http://newstudent.nhmccd.edu or by contacting the individual college for additional orientation options.

**Referral Services** - When requested, the counseling/advising office refers students to specialized services in the geographical area.

**Transfer Planning** - Students desiring a program of study requiring transfer to a four-year college or university will be assisted in selecting course work that transfers and fulfills degree requirements.

**Faculty Advisement** - Faculty members work with counselors and advisers to assist students with course selection and career decision-making.

**Testing** - A wide variety of tests such as career interest inventories, aptitude tests, study habits, inventories and intelligence measures are available. NHMCCD is an official test center for American College Testing program - ACT, a college entrance examination. The code for Cy-Fair College is 4786; Kingwood College is 4260; North Harris College is 4139; and Tomball College is 4261. NHMCCD is also an official test center for Texas Higher Education Assessment (THEA), a test to determine whether a student has the academic skills to succeed in college-level courses. The code for Kingwood College is 219; North Harris College is 221; Tomball College is 222; Cy-Fair College is 144; and Montgomery College is 226.

**Services For Students With Disabilities** - Support services for students with special needs are provided upon request. Requests for these services should be made through the counseling/advising office.

**CAREER SERVICES**

Career Services offers a variety of resources to assist students and graduates in developing career strategies. Services include:
STUDENT DEVELOPMENT POLICIES & PROCEDURES

- Career Counseling: Assistance with making a career decision; choosing a major; career planning; job search coaching; interview preparation; résumé preparation; personality and interest assessments; and career exploration assessments.

- Career Resource Library: Career fields and majors; agencies and organizations; career planning information; resume and cover letter guides; and resources for special populations.

- Employment Resources: Job fairs; on-campus recruiting; resume and interviewing seminars; resume critiques; job search coaching; and job postings on district databases.

Visit www.nhmccd.edu/cc for more information.

FINANCIAL ASSISTANCE

The purpose of financial aid is to remove financial barriers that prevent access to educational opportunities. NHMCCD participates in programs that provide aid through grants, a variety of scholarships, part-time employment and loans. Students choosing to apply for these programs should contact the financial aid office well in advance of registration. Priority is given to those students who apply and complete the process prior to April 1. After the priority date, awards are made as long as funds are available. Scholarships are usually awarded for the fall and spring terms only. Most grants are available for the fall, spring, and summer. Loans are offered for fall and spring terms only.

ENDOWED SCHOLARSHIPS AVAILABLE

Each spring, the NHMCCD Foundation announces available scholarships. Application and specific details related to each scholarship are available through the college financial aid offices only.

DISTRICT-WIDE

Dr. Joe A. Airola Scholarship is awarded to a student who has a minimum 2.5 GPA and is enrolled at least part-time.

Carol Bary Scholarship is awarded to a student enrolled in the VN program.

Elmer L. & Dorothy M. Beckendorf Scholarship is awarded to a student who has at least a 2.5 GPA and enrolled full-time in a health-related program.

James Buchinger, Lindsey Lamkin and G.T. Thompson Memorial Scholarship is awarded to a full-time student who has a minimum 2.0 GPA. Priority will be given to a student who graduated from the Hauke Alternative School.

Estella R. Cameron Memorial Scholarship is awarded to students enrolled in the Interpreter Training Technology Program.

Canyon Gate Scholarship is awarded to a student who resides in the Canyon Gate or Canyon Lakes Village community.

Copperfield Baptist Church Scholarship is awarded to a full-time student.

CSCI Scholarship is awarded to a student who has a minimum 2.5 GPA and is enrolled in a Computer Science or Computer Information program.

Jack and Lynn Fields Scholarship is awarded to a student with priority given to a single mother.

Pearl Fincher Scholarship is awarded to students who have a minimum 2.5 GPA.

Patricia Harless Scholarship is awarded to a student who has demonstrated financial need.

Hauke Scholarship is awarded to a student who graduated from Hauke Alternative School, and enrolled in academic or workforce development programs.

Brian Heisler Scholarship is awarded to a student who has a minimum 2.5 GPA and is enrolled at least part-time.

Houston Northwest Medical Center Scholarship is awarded to a student who has a minimum 2.5 GPA and is enrolled at least part-time.

Humble Police Association Scholarship is awarded to students who have graduated from Humble High School and have a minimum 2.0 GPA.

Leo Medley Memorial Scholarship is awarded to a student who has a minimum 2.0 GPA and who graduated from Humble High School.
Nursing Program Scholarship is awarded to a student with a minimum 2.5 GPA and is enrolled in a nursing program.

Pepsi Cola Scholarship is awarded to a student who has a minimum 2.5 GPA.

Stone Gate Scholarship is awarded to a student who has a minimum 2.0 GPA and resides in the Stone Gate or Canyon Lake community.

William J. & Olive H. Upton Scholarship is awarded to a student who has a minimum 2.0 GPA and is enrolled in a Law Enforcement, EMS, or Fire Fighting program.

Dr. Nockie Zizelmann Scholarship is awarded to students enrolled in the ADN program selected by Director of Nursing, same student for two years.

NORTH HARRIS COLLEGE

Barbara Benzel Memorial Scholarship is awarded to a female student who is at least thirty years old, has a minimum 3.0 GPA, and is majoring in English.

Elizabeth “Beth” Boyd Memorial Nursing Scholarship is awarded to a first year ADN student.

Dr. Cher Brock Scholarship is awarded to a full-time student who has at least a 2.5 GPA. Priority will be given to a student attending Carver Center.

Cook Covington Memorial Scholarship is awarded to a first year African-American student who has a minimum 2.0 GPA.

Cypress Woodlands Junior Forum Scholarship is awarded to a student who has a minimum 2.5 GPA.

Fred Fincher Sr. Memorial Scholarship is awarded to students enrolled in the Automotive Technology program.

Hulon & Marion Madeley Scholarship is awarded to a full-time Tomball College or North Harris College student who has a minimum 3.0 GPA and is majoring in the life or earth sciences.

Brian Ray Olson Memorial Scholarship is awarded to a student who has a minimum 2.5 GPA and is enrolled in the Paramedic program.

North Harris College President’s Scholarship is awarded to students who have a minimum 2.5 GPA, and enrolled at least part-time.

North Harris County Junior League Scholarship is awarded to a student who has a minimum 2.5 GPA and participates in the WINGS program.

Thelma Jones Scholarship is awarded to students who are enrolled in workforce or technical programs. The award will be based on both need and merit.

Dr. Sandy Shugart Scholarship is awarded to a full-time student who has a minimum 2.5 GPA.

Tiffani Stanley Memorial Scholarship is awarded to a student who has a minimum 2.5 GPA, is enrolled in the EMS program and has received a letter of reference from the EMS faculty.

Judy Taylor Scholarship is awarded to a full-time student who has a minimum 3.0 GPA, is part of the Math and Science Instructional Division and either the student or a family member must currently suffer from medical hardship or has recently overcome a devastating medical hardship.

J. Anthony Walter, M.D. Scholarship is awarded to full-time students, one enrolled in Engineering Technology at Tomball College and one enrolled in Computer Technology at North Harris College.

KINGWOOD COLLEGE

David & Pamela Dickson Scholarship is awarded to first year students who are single parents or from abusive families.

Entergy Scholarship is awarded to a student attending either Montgomery or Kingwood College and who has a minimum 2.5 GPA, and is enrolled at least part-time.

Friend of Kingwood College Scholarship is awarded to a student who has demonstrated financial need.

Kingwood College Dental Hygiene Scholarship is awarded to a second year dental hygiene student with a minimum of 49 hours.
Kingwood College Golf Tournament Scholarship is awarded to a student who has a minimum 2.5 GPA, and is enrolled at least part-time.

Kingwood College 20th Anniversary Scholarship is awarded to a student who has demonstrated financial need.

Kingwood College President’s Scholarship is awarded to students who have a minimum 2.5 GPA, and enrolled at least part-time.

Kingwood Employee and Community Scholarship is awarded to a full-time student with a minimum 3.0 GPA, who has demonstrated financial need.

Selma Lilley Memorial Scholarship is awarded to a student enrolled in the VN program.

Humble Intercontinental Rotary Club Scholarship is awarded to a student who has a minimum 2.5 GPA.

R. M. Machell Family Scholarship is awarded to a student enrolled in the ADN program who has a minimum 3.4 GPA.

Marjorie H. Shifferd Scholarship is awarded to a student who has a minimum 3.0 GPA, is enrolled in at least 9 semester credit hours, has at least an 80% completion rate for past (3) semesters, and must be a student worker in the Financial Aid Office.

TOMBALL COLLEGE

Kathleen Graham Semmler Scholarship is awarded to a students enrolled in the ADN program.

Houston Livestock & Rodeo Scholarship is awarded to students enrolled in the Veterinary program and who are residents of Texas and US citizens.

Hulon & Marion Madeley Scholarship is awarded to a full-time Tomball College or North Harris College student who has a minimum 3.0 GPA, and is majoring in the life or earth sciences.

Ann Glazier McStravick Nursing Scholarship is awarded to a student enrolled in the ADN program.

Tomball College Mathematics and Excellence Scholarship is awarded to a student who has a minimum 3.0 GPA, and is majoring in Mathematics Education or Engineering.

Tomball College President’s Scholarship is awarded to a student who has a minimum 2.5 GPA, and enrolled at least part-time.

Tomball Rotary Club Scholarship is awarded to students who have a minimum 2.5 GPA, and enrolled at least part-time.

Bill Stafford Memorial Scholarship is awarded to a full-time student who has a minimum 3.0 GPA, is making a career change and enrolled in a program leading to employment in social work, counseling or teaching.

J. Anthony Walter, M.D. Scholarship is awarded to full-time students, one enrolled in Engineering Technology at Tomball College and one enrolled in Computer Technology at North Harris College.

MONTGOMERY COLLEGE

Conroe New Car and Truck Dealers Scholarship is awarded to a student who has a minimum 2.5 GPA, is enrolled in at least 12 semester credit hours and is a resident of Montgomery County.

Conroe Regional Medical Center & Auxiliary Scholarship is awarded to students who reside in Montgomery County, have a minimum 2.5 GPA and are enrolled in either the ADN or VN program.

Entergy Scholarship is awarded to a student attending either Montgomery or Kingwood College and who has a minimum 2.5 GPA.

Ann Friend Memorial Scholarship is awarded to a Montgomery County resident. Student must demonstrate financial need.

Houston Golf Association Scholarship is awarded to a student who has a minimum 2.5 GPA, and is enrolled at least part-time.

Gwen Hruska Memorial Scholarship is awarded to a student who is a current or former recipient of services from Montgomery County Youth Services.
Dr. Bill Law Jr. Scholarship is awarded to a student with a minimum 2.5 GPA.

William D. Law Sr. Memorial Scholarship is awarded to a male student, employed, with a dependent, and is enrolled at least 6 semester credit hours and has a minimum 2.5 GPA.

Montgomery College President’s Scholarship is awarded to a student who has a minimum 2.5 GPA.

Montgomery College 10th Anniversary Legacy Scholarship is awarded to a Montgomery College student.

Donna McVeigh Memorial Scholarship is awarded to a student who has a minimum 2.5 GPA, and enrolled at least part-time.

Research Forest Science and Engineering Library Scholarship is awarded to a single parent minority student enrolled in an AAS degree program.

Rotary Club of Conroe Scholarship is awarded to a student who is a single parent.

Rotary Club of The Woodlands Scholarship is awarded to full-time students who reside in Montgomery County.

Mark and Christine Scully Scholarship is awarded to a Montgomery College student.

South Montgomery County Lions Club Scholarship is awarded to a student who is a resident of Montgomery County and has a minimum 2.5 GPA.

Splitrock Scholarship is awarded to a female student who is a single mother or Splitrock employee or family member and has a minimum 2.0 GPA.

Melissa Trotter Memorial Scholarship is awarded to a Montgomery College student.

Wells Fargo Bank Scholarship is awarded to a student who has demonstrated financial need.

John Wiesner Scholarship is awarded to a full-time student who has a minimum 3.0 GPA, and has demonstrated financial need.

The Woodlands Development Company Scholarship is awarded to a Montgomery College student.

The Woodlands Living Arts Council Scholarship is awarded to a student who is registered for at least 9 semester credit hours, majoring in fine arts and has a minimum 3.0 GPA.

The Woodlands Waterway Marriott Hotel Scholarship is awarded to a Montgomery College student.

CY-FAIR COLLEGE

Robert J. Adam Family Scholarship is awarded to a full-time student who has demonstrated financial need.

Alvis Scholarship is awarded to a single student, without children, enrolled in the ADN program who has a minimum 3.0 GPA, and receives no other form of financial aid.

Jerry Albrecht Scholarship is awarded to a student, with a minimum 2.5 GPA, a documented learning disability, and enrolled at least 6 hours.

Caldwell Watson Real Estate Group Scholarship is awarded to a student who has a minimum 2.5 GPA, and enrolled at least part-time.

Cypress Fairbanks Medical Center/Tenet Foundation Scholarship is awarded to students who have a minimum 2.5 GPA.

Cy-Fair Houston Chamber of Commerce Scholarship is awarded to a student who has a minimum 2.5 GPA, and has demonstrated financial need.

Cy-Fair Federal Credit Union Scholarship is awarded to a student who is enrolled in the alternative teacher certification program.

Cy-Fair College President’s Scholarship is awarded to a student who has a minimum 2.5 GPA, and enrolled part-time.

Cypress Fairbanks Rotary Club Scholarship is awarded to a full-time student who has a minimum 2.5 GPA.

First Community Credit Union Scholarship is awarded to a student enrolled in a financial program and who has a minimum 3.0 GPA.
Gilbane Building Company Scholarship is awarded to a Cy-Fair College student.

Klein Bank and Trust Scholarship is awarded to a student who has an income that is less than 80 percent of the area adjusted median income.

Qwock Lem and Kim Yoke Lau Memorial Scholarship is awarded to a student who has a minimum 3.3 GPA and has demonstrated financial need.

Beryl A. MacLean Scholarship is awarded to a Cy-Fair College student.

Methodist Willowbrook Hospital Scholarship is awarded to a student enrolled in nursing, radiology or sonography program. Priority will be given to an employee of the hospital. If recipient is not an employee, the student must volunteer at least 10 hour per week at the hospital.

Mingoia Family Scholarship is awarded to a student with a minimum 2.5 GPA, and has demonstrated financial need.

NCI Building Systems Scholarship is awarded to a Cy-Fair College student.

NewQuest Scholarship is awarded to a student who is single without children, has a minimum 3.0 GPA, plans to seek a Bachelors degree in business, and receives no other form of financial aid.

Bill and Connie Yancey Scholarship is awarded to a full-time student who has a minimum 2.5 GPA, and has demonstrated financial need.

3. Allow four to six weeks after submitting the FAFSA application to the federal processing center to receive a response. If you complete the FAFSA via the web, this process could take as little as four days. You will receive a Student Aid Report (SAR) and any institution you list on the FAFSA will receive an Institutional Student Information Record (ISIR).

4. Complete the additional NHMCCD forms and submit them to the college financial aid office along with your student aid report. Once the NHMCCD application for financial assistance and your SAR report are received by the financial aid office, the verification of your paperwork can begin.

5. The financial aid office at the college you plan to attend will review your application and provide you with needed additional forms and help you resolve any problems that may exist in your file. It is recommended that you respond promptly to any request made by the financial aid office.

6. In order to receive financial aid at any college in the district, a student must have been admitted as a regular student, must have officially declared a degree or certificate major and must make satisfactory academic progress in accordance with district policy. For a copy of this policy, contact the financial aid office at the college you plan to attend.

NEED-BASED (TITLE IV) PROGRAMS

NOTE: Most need-based grants (with the exception of a Federal Pell Grant) are awarded on a first-come, first-served basis. Students who wish to be considered for these awards should have their file completed PRIOR to April 1st for the following fall and spring enrollment periods.

Federal Pell Grant (PELL) - A federal grant designed to help students with financial need obtain their first undergraduate degree. The maximum annual grant for the 2006-07 year is $4,050. Eligible students may still be considered after April 1 for the Pell Grant.

Federal Supplemental Educational Opportunity Grant (FSEOG) - A federal- and institution-matched need-based grant. Priority is given to
those students who demonstrate a significant need and qualify for a Federal Pell Grant. Most awards at NHMCCD range from $500 to $4,000 per year.

Leveraging Educational Assistance Partnership (LEAP) - A federal-and state-matched need-based grant designed to assist students who have a high financial need. Awards are for $500 per year.

Federal Work Study Program (FWS) - A federal-and college-matched work program which provides jobs for students who have a financial need. Students apply for these jobs through the employment/financial aid office at the college they plan to attend during the school year. Students normally work 15 to 19 hours per week and begin at minimum wage. Awards at NHMCCD range from $2,000 to $6,000 per year. Diverse positions are available at the campuses.

Texas College Work Study Program (TCWS) A state- and institutionally-matched work study program similar to the federal work study program. Awards at NHMCCD range from $2,000 to $3,200 per year. Program participation is limited to fall and spring terms only.

Texas Public Education Grant (TPEG) - A grant fund made available from tuition revenues to assist NHMCCD students in financial need. Awards generally range from $100 to $2,000 per year.

Towards Excellence and Success Grant (TEXAS)- A state grant made available to students who graduate from high school with a “Recommended Advanced High School, Advanced High School Honor, or Distinguished High School” seal on their high school transcript. A high school transcript with this seal must be on file at the campus the student will be attending. Students must enroll in at least nine hours. Enrollment has to be within 16 months after the month of high school graduation. The maximum award is $1270 per year for fall and spring only.

Towards Excellence and Success Grant II (TGII)- A state grant made available to students who demonstrate high financial need and who are enrolled in at least six hours. The student may not qualify for TEXAS Grant in order to qualify for TGII. The maximum award is $1,270 per year for fall and spring only.

Students may contact the financial aid office at the college they plan to attend or may visit our Web site at www.nhmccd.edu for a copy of the NHMCCD award guidelines.

**REFUND POLICY FOR STUDENTS RECEIVING FINANCIAL AID**

Any student attending NHMCCD and receiving Title IV (PELL, FSEOG, FFE loans) assistance is treated differently for refund purposes effective Oct. 7, 2000. This procedure applies only to Title IV recipients who totally withdraw prior to the 60 percent date in the enrollment term.

1. The percent of the term that the student completes will be the percent of the amount of Title IV assistance that the student will be permitted to keep.

2. The percent will be calculated and the remaining amount that the student received will have to be returned to the Title IV funds in the order that the law prescribes.

3. The student must also repay the portion of unearned institution charges which are returned to the Department of Education on their behalf.

4. The student will be notified by the financial aid office of the amount owed to the Department of Education (ED). The student will be allowed 45 days to pay in full to NHMCCD the debt they owe to ED. After the 45 days, the debt will be referred to the Department of Education for collection.

5. The student must either pay the debt in full to NHMCCD or make payment arrangements with ED in order to maintain eligibility for Title IV funds.

6. All students who receive Title IV assistance will need to consider very carefully the ramifications of completely withdrawing from all of their classes. Examples and information are available in the financial aid offices.

7. Once refund amounts have been determined for any Title IV recipient, they will be refunded to the Title IV programs in the following order:
STUDENT DEVELOPMENT POLICIES & PROCEDURES

Unsubsidized Stafford Student Loans
Subsidized Stafford Student Loans
Plus Loan program
Pell Grant program
SEOG Grant program
Robert C. Byrd Honor Scholarship

OTHER FINANCIAL INFORMATION

On-Campus Employment - A limited number of jobs are available at each college to employ students part time at minimum wage. These jobs are primarily clerical and aim to assist the student with the cost of education. Students interested in applying for these positions should obtain an application for employment or visit the financial aid office at the college where they desire to work.

Federal Stafford (subsidized & non-subsidized) - Students must complete the grants application process on page 60 and attend an entrance counseling session in order to be processed for a loan. Dependent students who qualify for the Stafford subsidized or non-subsidized may borrow up to $2,625 for their first year of a two-year program of education and up to $3,500 for their second year of a two-year program of education. All federal student loans are disbursed no earlier than 30 days after classes begin.

Federal Parent Loan for the Undergraduate Student (PLUS) - Dependent students whose parents request a PLUS loan are eligible to borrow up to the cost of attendance minus any other financial aid received. This loan is a credit-based loan. Students who are not making satisfactory academic progress as defined by the college may have a restriction imposed on their application for these loans. Additional information and applications are available in the financial aid offices.

Deferred Payment Plan - Students desiring to use this plan must pay the down payment and a $20 application fee that is required before the first day of the semester. Payment dates and late fees of $25 are established for each semester and spelled out in a promissory note signed by the student. Specific information and contracts can be obtained at the business office of each college. This option is not available for summer classes.

NHMCCD Short-Term Loans - Funds may be available to students with special financial needs to defer the initial cost of registration. The loan is to be repaid according to a schedule that is given to the student when the loan is approved.

The Hazlewood Act for Texas Veterans - The State of Texas provides a tuition and fee exemption for any student who:

1. was a U.S. citizen and a resident of the state of Texas at the time of entry into active duty, and
2. was honorably discharged from the military (this does not include general or dishonorable discharges), and
3. has exhausted or is not entitled to any VA educational benefits, and
4. is classified as a Texas resident for tuition purposes, and
5. not in default on a loan made or guaranteed by the Federal Government or the state of Texas, and
6. has attempted fewer than 15 credit hours using the Hazlewood Act exemption beginning with fall 2005.

Students who wish to use this program for this academic year must have the following:

- Completed Hazlewood application
- VA form DD214 indicating “Honorable Discharge,” a non-entitlement letter from the VA
- Proof of current status regarding eligibility
- Documentation of Texas residency at the time of veteran service
- Benefits letter from Muskogee, Oklahoma.

Scholarships - Various individuals, local businesses, civic groups and organizations contribute to the NHMCCD scholarship programs. Requirements and award amounts vary. General scholarship applications are available at each of the financial aid offices.
offices. College scholarship committees evaluate scholarship applications. For a comprehensive list of opportunities and application deadlines, check with each college’s financial aid office. The NHMCCD application deadline is April 1 for fall and Oct. 1 for spring.

The Hope Scholarship Tax Credit - The Hope Scholarship is actually a tax credit, not a scholarship. A family must file a tax return and owe taxes to take advantage of it. The Hope credit is not refundable for families who do not pay taxes, who owe less in taxes than the maximum amount of the Hope tax credit for which the family is eligible or who receive financial assistance that pays tuition and fees. Generally, the Hope Tax Credit is available for freshman and sophomore students only.

A family may claim a tax credit of up to $1,500 per tax year for each eligible dependent. This can be done for up to two tax years. A family may claim up to 100 percent of the first $1,000 of eligible expenses and 50 percent of the next $1,000 for a maximum credit of $1,500.

The actual amount of the credit depends on the family’s income, the amount of qualified tuition and fees paid, and the amount of certain scholarships, grants and exemptions subtracted from tuition. The total maximum credit also is based on the number of eligible dependents.

Students must keep a copy of the payments made to NHMCCD for tuition and fees or ask the business office at the college they are attending for this amount. The form 1098T will be mailed to the IRS and to the students reporting enrollment for the previous fiscal year by Jan. 31.

VETERANS BENEFITS

Veterans requesting educational benefits should contact the NHMCCD veterans affairs office at 832.813.6651 for assistance in following approved degree and certificate programs that will meet VA requirements. Information is also available at the Web site www.nhmccd.edu/goto/veterans or each college financial aid office. Requests for benefits are paid directly to the veteran after the application and certification process is complete. Veterans are required to provide a copy of their registration statement to the NHMCCD veterans affairs office each semester, including course additions, for which benefits are requested. All costs for attending NHMCCD are a matter between the individual veteran and the college. It is in the best interest of the veteran to contact the NHMCCD veterans affairs office when changes to information previously submitted occurs.

Note: Information and applications for educational benefits under the State of Texas Hazlewood Act may be obtained from the college office of financial aid.

Certification Procedures - Transcripts of all previous college work must be on file and evaluated toward a specific degree objective before the enrollment can be certified. Only courses that are required for the selected degree objective will be certified for benefits. Classes will be certified each semester after the receipt of a registration statement for that semester.

Standards of Progress For Receipt of Veterans Benefits - Veteran regulations require that a student receiving veteran educational benefits select an approved degree objective and make satisfactory progress toward completion of that objective or face the possible suspension of benefits. Veteran students must make satisfactory progress and comply with the “Academic Policies” section of the NHMCCD catalog.

Tutorial Assistance - Additional financial assistance is available for veterans who are enrolled at least half-time and need tutorial help in certain academic and vocational courses. Veteran services personnel will help the veteran make the necessary arrangements for the use of these benefits.

STUDENT ORGANIZATIONS

The district recognizes that student organizations provide a framework for students to develop their own special talents and interests. Objectives of organizations include assisting students in developing leadership qualities and providing profitable use of leisure time. Information about current organizations and guidelines for starting a new organization may be obtained from the student services office.
Examples of organizations

*(may not be available at each college)*:

- African American Cultural Association
- African American Student Association
- Ambassadors
- American Society of Interior Designers, Kingwood College Student Chapter
- Animation Club
- Art Club
- Art League
- Baptist Student Ministry
- Baptist Student Union
- Black Student Alliance
- Camarata Music Club
- Chess Club
- Christian Student Alliance
- College Baseball Club
- College Democrats
- College Republican Club
- Collegiate Secretaries International
- Cultural Awareness Club
- Computer Club
- CREED
- Criminal Justice Club
- Democrat Club
- DisAbility Awareness
- Drama Club
- Early Childhood Professionals Association
- Earth Alliance
- Economic College Organization
- Forensics Club
- Gay, Lesbian and Other Students in Support
- Hispanic Student Forum
- Honors Club
- Honors Program
- Human Services Organization
- Intercultural Student Organization
- International Student Organization
- Intramural Sports
- Kingwood College Rough Riders Dancers
- Latter Day Saints Club
- LASO (Latin American Student Organization)
- Legal Assistants Association
- Martial Arts
- National Kitchen & Bath Association
- Newman Club (Catholic Student Club)
- NHC Student Affiliate of Institute of Management Accountants
- North Harris College News Club
- PC Users
- Phi Theta Kappa (National Junior College Honor Society)
- Photography Club
- Psychology Club/PSI Beta National Honor Society
- Republican Club
- SCI-PHILES
- Sign Language Club
- Soccer Club
- Society for Mathematics & Engineering
- Show of Hands
- Student Ambassadors
- Student American Dental Hygienist's Club
- Student Government
- Student Nurses Association
- Students of Diverse Abilities
- Tennis Club
- The Times Newspaper
- Una Voz
- Veterinary Technicians' Student Organization
- Video Game Club
- Vietnamese Student Association
- Visual Communication Club
- Volunteer Action League
- The Writer's Club
STUDENT ACTIVITIES

Student activities are coordinated through the college student services office. Suggestions for activities and programs may be submitted to this office by students and faculty.

STUDENT PUBLICATIONS

Various publications of interest to students, faculty and staff are distributed periodically. These publications include announcements of forthcoming events, activities, and programs to be held at each college. A student newspaper is published periodically by journalism students; contributions of articles, literary pieces, essays and letters to the editor are encouraged.

Creative and literary arts publications are produced by some of the colleges to provide students opportunities to publish poetry, photography, art, essays and short stories. Contact the student services office for further information.

INTRAMURAL AND CLUB SPORTS

Intramural and club sports provide athletic and recreational activities for students at most colleges in a variety of on-campus events. Most activities allow for different skill levels. Tournaments, leagues, and special events are scheduled throughout the semester with individual and team competition for men, women and co-ed groups. Athletic activities include flag football, basketball, soccer, tennis, frisbee, golf, softball, baseball, fun-runs, racquetball and more. Recreational activities include backgammon, chess, eight-ball, canoe trips, open recreation in the gym, etc. Intramural and club sports offices are located at each college.

BULLETINS AND POSTERS

Official notices and bulletins are posted on bulletin boards throughout each college. Information can be found about job opportunities, class schedules, events on the school calendar and student activities. Any written material to be posted or distributed must be approved by the college student services. Any notices or bulletins should be posted in designated areas in such a manner as not to detract from or deface the building. Specific guidelines are available from each college’s student services office.

STUDENT CONDUCT

The district is dedicated to providing a quality comprehensive educational program designed to meet and balance the diverse and changing educational, social, economic, and cultural needs of the community, consistent with a safe and healthful environment. The District is committed not only to learning and to the advancement of knowledge, but also to the education of ethically sensitive and responsible persons. It seeks to achieve these goals through a solid educational program and through regulations and policies governing student life that encourages responsibility and respect for rights and viewpoints of others.

The general morale of the student body is dependent upon many factors; among these are the success of its graduates, the attitude of the faculty and administration, the general behavior of individual students and the reputation of the school. We believe that a primary factor in strong student morale is an overall regard for good citizenship on the part of the student body. The district assumes that students eligible to perform on the college level are familiar with the ordinary rules governing proper conduct and that they will observe these rules as a matter of training and habit.

Regulations of the district forbid gambling, the use of controlled substances and alcoholic beverages, and the appearance of anyone under the influence of any of these on the campus or when attending or participating in activities sponsored by the college. All NHMCCD buildings are tobacco free.

The possession of firearms, illegal knives and prohibited weapons on district facilities, including parking areas and publicly accessed facilities, is a violation of criminal law and board policies. Persons who violate the law and these policies will be subject to serious consequences, including referral for criminal prosecution and dismissal from school.
STUDENT DEVELOPMENT POLICIES & PROCEDURES

No person or group of people acting in concert may willfully engage in disruptive activity or disrupt a lawful assembly on any campus or property of NHMCCD; further, the administration is charged with the responsibility of keeping the district free of disruptive activities and may take whatever disciplinary action is deemed necessary in instances of disruption or threat of disruption.

Students are expected to dress and groom themselves in an appropriate manner while on campus or while participating in activities sponsored by the district. Students whose conduct casts an unfavorable reflection upon the district, and thereby upon all students, are subject to disciplinary action. Refer to www.nhmccd.edu/goto/studenthandbook for more information.

The district seeks to provide an environment where discussion and expression of all views relevant to the subject matter of the class are recognized as essential to the teaching and learning process. However, students do not have the right to interfere with the freedom of faculty to teach or the rights of other students to learn. Faculty members set the standards of conduct that are acceptable.

STUDENT DISCIPLINE PROCEDURES

Any alleged violation or flagrant disregard of NHMCCD rules and regulations shall be brought to the attention of the chief student services officer, who will initiate an investigation of the situation. After a complete and thorough investigation, the chief student services officer will determine the course of action. Discipline may result in expulsion. The decision of this administrator may be appealed to the college discipline committee. The complete discipline policy may be found on-line at www.nhmccd.edu or in the student handbook.

EMERGENCY PROCEDURES

In the event an emergency due to illness or accident occurs on campus, students should contact the college switchboard operator (dial O) or the administrator on duty as soon as possible.

North Harris Montgomery Community College District does not provide insurance coverage for its students. Section 101.051 of Texas Civil Practice and Remedies Code expressly exempts community college districts from liability for any personal or property damage that occurs on campus. The student, therefore, should make arrangements for adequate personal insurance coverage while attending NHMCCD. International students are required to carry health insurance. Information regarding personal insurance for students is available from the office of student services.

CONTAGIOUS/COMMUNICABLE DISEASES

NHMCCD conforms to all requirements of the Communicable Disease Prevention and Control Act and the Open Records Act. With a physician’s written approval, students with a contagious/communicable disease normally will be allowed to attend class. The identity of such students is confined to those persons within the college with a direct need to know (i.e., president, vice president, faculty member or counselor) and will not be revealed without the student’s consent. Questions concerning the district’s policy and enrollment procedures of a student with a contagious/communicable disease should be referred to the student services office.

Bacterial meningitis is a serious, potentially deadly disease that can progress extremely fast. It is an inflammation of the membranes that surround the brain and spinal cord. More information concerning this disease and its treatment can be found online at www.nhmccd.edu/goto/meningitis or in the student services office at each campus.

COLLEGE POLICE

The police officers of the North Harris Montgomery Community College District are commissioned peace officers with the State of Texas and are granted the same law enforcement authority as any other police or sheriff’s department. The officers are obligated to enforce all federal, state and local laws, in addition to college policies. The police department works with state and local police agencies, as needed, to ensure a safe and comfortable environment for students, staff, faculty and visitors to the college. More detailed information is available at www.nhmccd.edu/goto/police regarding campus safety and security.
LOST AND FOUND
Each college maintains a “Lost and Found” for students, faculty and staff. Unclaimed items are kept only through the end of each semester.

PARKING
Parking is provided free to NHMCCD students and visitors. Parking and traffic regulations are outlined in the student information brochure available at registration or from the student services office. Students and staff are requested to adhere to good manners and consideration of others when parking on campus. Students should follow the directions given on the traffic signs and park in designated areas only. Violators may be subject to a citation.

Parking permits are required only for faculty and staff and for handicapped parking spaces.

When a parked vehicle obstructs traffic or flagrantly disregards good parking practices, the college administrative personnel reserves the right to call a towing service and have the vehicle removed from the campus at the owner’s expense.

STUDENT CENTER/FOOD SERVICE
A cafeteria/snack bar/lounge area is provided at each college. Hot meals and snacks are available for students and college personnel. A variety of vending machines are also available at each college.

Students are asked to refrain from consuming food or drinks in any of the classrooms and laboratory areas. All NHMCCD buildings and facilities are smoke-free.

STUDENT HOUSING
North Harris Montgomery Community College District serves only commuting students. There are no dormitories available.

COLLEGE BOOKSTORE
A bookstore is located at each college. A list of required textbooks, study aids and supplies for all subjects is available. Bookstore hours are announced each semester. Information concerning book refunds and used book purchases is available from the bookstore.
Graduation Requirements

PROGRAMS OF INSTRUCTION

North Harris Montgomery Community College District offers courses and programs to suit the needs of individual students. In keeping with the mission of a community college, the college offers university-parallel or transfer courses, workforce or career programs, and continuing education courses for lifelong learning opportunities.

While individual courses are available in a variety of subjects and fields of study, many students have as their educational goal a prescribed program of study. Students are responsible for taking courses in the proper sequence and at the proper level as well as determining the applicability of a particular course to their educational objectives.

Students who fulfill the requirements of such programs of study may attain one or more of the following degrees or certificates:

**Associate of Arts Degree (AA)** - A collegiate degree related to the baccalaureate degree. This is not a degree with a declared major; rather it is a program of first and second year courses which will generally transfer to a four-year college or university. Requirements are on page 74.

**Associate of Science Degree (AS)** - A collegiate degree related to the baccalaureate degree. This is not a degree with a declared major; rather it is a program of first and second year courses which will generally transfer to a four-year college or university. Requirements are on page 75.

**Associate of Arts in Teaching (AAT)** - A collegiate degree that will satisfy the lower division requirements for a bachelor’s degree leading to initial teacher certification. Requirements are on pages 76-78.

**Associate of Applied Science Degree (AAS)** - A degree in a workforce field for students who wish to begin a career after completing this program of study. Requirements are on page 86.

**Core Curriculum** - The curriculum in liberal arts, sciences and political, social, and cultural history that all undergraduate students of an institution are required to complete before receiving a degree. Students may receive a designation for being “core complete” on their transcripts; however, to receive an associate degree a student must also complete the remaining AA or AS requirements on page 73.

**Field of Study** - A curriculum that will satisfy the lower division requirements for a bachelor’s degree in a specific academic area at a general academic teaching institution. The student shall receive full academic credit toward the degree program for the block of courses transferred which will meet that institution’s lower division requirements for the degree program in the field of study into which the student transfers. Requirements are on pages 79-82.

**Certificate** - A program of study that varies in length and is designed to prepare the student for occupational employment. The certificate is awarded upon completion of specific courses that have been industry validated and sequenced for the purpose of developing and upgrading skills in an occupation. Requirements are on page 85.

**Area of Concentration** - A program which combines either the associate of arts or associate of science degree with an emphasis in a specific academic discipline. Course transferability for area of concentration courses should be checked with the transfer university. (page 82)

Questions regarding course sequence and degree objectives should be referred to the appropriate faculty adviser or counseling office.
NHMCCD CORE PERSPECTIVES

The North Harris Montgomery Community College District has defined student outcomes and skill development as students complete their degree or certificate program. When appropriate and applicable to the course content, the faculty will integrate course activities and assignments that reflect these values, behaviors, and skills.

Perspectives in the Core Curriculum

1. Establish broad and multiple perspectives of the individual in relationship to the larger society and world in which he or she lives, and to understand the responsibilities of living in a culturally and ethnically diversified world;

2. Stimulate a capacity to discuss and reflect upon individual, political, economic, and social aspects of life in order to understand ways in which to be a responsible member of society;

3. Recognize the importance of maintaining health and wellness;

4. Develop a capacity to use knowledge of how technology and science affect their lives;

5. Develop personal values for ethical behavior;

6. Develop the ability to make aesthetic judgments;

7. Use logical reasoning in problem solving; and

8. Integrate knowledge and understand the interrelationships of the scholarly disciplines.

Basic Intellectual Competencies in the Core Curriculum

READING: Reading at the college level means the ability to analyze and interpret a variety of printed materials – books, articles, and documents including both general methods of analyzing printed materials and specific methods for analyzing the subject matter of individual disciplines.

WRITING: Competency in writing is the ability to produce clear, correct, and coherent prose adapted to purpose, occasion, and audience. Although correct grammar, spelling, and punctuation are each a sine qua non in any composition, they do not automatically ensure that the composition itself makes sense or that the writer has much of anything to say. Students need to be familiar with the writing process including how to discover a topic, how to develop and organize it, and how to phrase it effectively for their audience. These abilities can be acquired only through practice and reflection.

SPEAKING: Competence in speaking is the ability to communicate orally in clear, coherent, and persuasive language appropriate to purpose, occasion, and audience. Developing this competency includes acquiring poise and developing control of the language through experience in making presentations to small groups, to large groups, and through the media.

LISTENING: Listening at the college level means the ability to analyze and interpret various forms of spoken communication.

CRITICAL THINKING: Critical thinking embraces methods for applying both qualitative and quantitative skills analytically and creatively to subject matter in order to evaluate arguments and to construct alternative strategies. Problem solving is one of the applications of critical thinking, used to address an identified task.

COMPUTER LITERACY: Computer literacy at the college level means the ability to use computer-based technology in communicating, solving problems, and acquiring information. Includes an understanding of the limits, problems, and possibilities
associated with the use of technology, and development of the tools necessary to evaluate and learn new technologies as they become available.

MULTICULTURAL COMPETENCIES: Demonstrates knowledge of those elements and processes that create and define culture. Develops an understanding of the values, practices, beliefs, and responsibilities of living in a multicultural world. Develops cross-cultural understanding, empathy, and communication. Demonstrates an understanding of diverse cultural expressions and their influences on cross-cultural interactions.

MATHEMATICS: Applies mathematical techniques to solve problems utilizing quantitative and qualitative strategies. Applies quantitative concepts, logic, and symbolic systems, and mathematics techniques as required in both discipline-specific and employment situations. Demonstrates ability to understand and apply the basics of quantitative relationships and to recognize the logical systems underlying them.

**Demonstration of Mastery**

Each professor will select strategies and activities throughout the course that foster the development and mastery of the above educational skills and competencies. Some strategies are book reviews, article reviews, chapter reviews, writing assignments, role playing, question groups, role reversal, free association discussion, group presentation, Socratic method, group projects, individual projects, case studies, open-ended essay exams, interviews, panel discussions, team problem solving, group tests, organizing data, group investigations, self assignments, discussion leaders, team evaluations, and critical panels.

**GENERAL ASSOCIATE DEGREE REQUIREMENTS**

Within five years of initial enrollment in credit courses at NHMCCD, a student may graduate according to the catalog degree requirements in effect at the time of first enrollment or any subsequent catalog degree requirements provided the degree, the program, and requisite courses are still being offered. Course prerequisite changes need to be followed. If a student fails to complete within five years all degree requirements of the catalog in effect at the time of initial enrollment, the student will be required to graduate under a catalog not older than five years. The five year initial enrollment period for specialized admissions programs begins upon acceptance into the program. Exception to this requirement may be approved in extenuating circumstances by the instructional vice president.

Students whose first year of enrollment in credit courses is prior to fall 1993 may graduate according to requirements in effect at that time provided the degree, the program, and requisite courses are still being offered.

1. At least 61 semester hours of earned credit, 18 of which must be courses taken at NHMCCD and apply to the degree. Courses transferred from regionally-accredited institutions will be evaluated and applied to degree requirements if:
   a. At least a grade of “D” was earned.
   b. The cumulative GPA of the transfer courses applied to the degree or certificate must be at least a 2.00.
   c. AAS graduates may be required to demonstrate skills/proficiencies in the discipline.

2. Satisfy core competency requirements.

3. Students must have at least a 2.0 cumulative GPA for NHMCCD courses applying toward their degree requirements.

4. Students must have a cumulative 2.0 GPA on all credit courses earned at NHMCCD (graduation GPA).
GRADUATION REQUIREMENTS

5. Satisfy NHMCCD Student Success Initiative requirements even if students are exempt from Texas Success Initiative.

6. Complete formal application for graduation in admissions office on or before the announced deadline.

7. All transcripts must be on file and all financial obligations to the college complete, including all records cleared in the library.

ADDITIONAL ASSOCIATE DEGREES

A student who has received an associate degree from NHMCCD or any other regionally-accredited institution of higher education may obtain an additional associate degree in another area. However, students should seek appropriate academic advising before initiating the pursuit of another associate degree. This provision is subject to the following stipulations:

1. For each additional associate degree, a minimum of 18 semester credit hours must be completed at NHMCCD. These credit hours may not repeat credit applied to a previous degree and must apply to the additional degree.

2. All courses required by any specific program must be completed.

GRADUATION

Students will be awarded a NHMCCD diploma when they graduate from one of the five NHMCCD colleges in accordance with the following criteria:

Associate of Arts (AA) and Associate of Science (AS) Degrees – Students will graduate from the NHMCCD college where he/she has completed the greatest number of credit hours applicable to the degree.

Associate of Applied Science (AAS) Degree and Certificates – Students will graduate from the NHMCCD college authorized to offer the total degree program or certificate at which he/she has completed the greatest number of program credit hours applicable to the degree or certificate.

Annual commencement exercises are held at the close of the spring semester. Students who complete all degree or certificate requirements or who are candidates for graduation are invited to participate in the college commencement exercise. An application for graduation should be submitted prior to the semester that all course work is completed.

ASSOCIATE OF ARTS DEGREE AND ASSOCIATE OF SCIENCE DEGREE

The programs in this section are designed primarily for students who desire to continue their education at a four-year college/university. At North Harris Montgomery Community College District, the associate of arts degree and the associate of science degree are generalized degrees. Each degree will not list a specific major but will be called associate of arts or associate of science.

While certain courses are recommended, the requirements are essentially the basic first year and second year offerings appropriate for the first two years of many baccalaureate degree programs. Students who successfully complete the degree requirements of the programs of study will be eligible to receive the associate of arts degree or the associate of science degree from North Harris Montgomery Community College District.
Core Requirements for the Associate of Arts and the Associate of Science:

A course cannot count toward more than one requirement of the degree with one exception – the multicultural requirement

<table>
<thead>
<tr>
<th>Core Component</th>
<th>Course Options</th>
<th>Semester credit hours</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>COMMUNICATION</strong></td>
<td>ENGL 1301 and 1302 and 3 hours of Speech: SPCH 1144, 1145, 1311, 1315, 1318, 1321, 2144, 2145</td>
<td>9 hours</td>
</tr>
<tr>
<td><strong>MATHEMATICS</strong></td>
<td>MATH 1314, 1316, 1325, 1332, 1342, *1350, *1351, 2318, 2320, †2412, †2413, †2414, †2415</td>
<td>3 hours</td>
</tr>
<tr>
<td><strong>NATURAL SCIENCES</strong></td>
<td>BIOL 1406 OR 1408, 1407 OR 1409, 2401, 2402, 2404, 2406, 2416; 2420, 2421; CHEM 1105 and 1305 OR 1405, 1411, 1412, 1419, 2423, 2425; GEOL 1403, 1404, 1405, 2307; PHYS 1401, 1402, 1410, 1411, 1412, 2425, 2426</td>
<td>8 hours</td>
</tr>
<tr>
<td><strong>VISUAL &amp; PERFORMING ARTS</strong></td>
<td>ARTS 1301, 1303, 1304, 1316, 2346, 2356; DRAM 1120, 1121, 1310, 1330, 1351, 1352, 2120, 2361, 2362; MUSI 1301, 1306, 1307, 1308, 1309, 1310.</td>
<td>3 hours</td>
</tr>
<tr>
<td><strong>HUMANITIES</strong></td>
<td>ENGL 2307, 2322, 2323, 2327, 2328, 2332, 2333, 2341, 2342, 2343; HUMA 1301, 1302; PHIL 1301, 1304, 2306, 2321; SPCH 2341; FREN 2311, 2312; GERM 2311, 2312; SPAN 2311, 2312; ITAL 2311, 2312</td>
<td>3 hours</td>
</tr>
<tr>
<td><strong>SOCIAL/BEHAVIORAL SCIENCES</strong></td>
<td>HIST 1301, 1302, or 2301 (select 6 hours with 3 hours in U. S. History)</td>
<td>6 hours</td>
</tr>
<tr>
<td></td>
<td>GOVT 2301 and 2302</td>
<td>6 hours</td>
</tr>
<tr>
<td></td>
<td>ANTH 2346, 2351; CRIJ 1301, 1307; ECON 2301, 2302; GEOG 1300, 1303; GOVT 2304; HIST 2311, 2312, 2321, 2322; PSYC 2301, 2302, 2306, 2308, 2314, 2315, 2316, 2317, 2319, 2326</td>
<td>3 hours</td>
</tr>
<tr>
<td><strong>KINESIOLOGY</strong></td>
<td>Select any activity course 1111-2184 excluding 3 credit-hour KINE classes</td>
<td>1 hour</td>
</tr>
</tbody>
</table>
| **MULTICULTURAL REQUIREMENT** | Students must take one of the above underlined courses or one of the following to meet the multicultural requirement of this degree: FREN 1300, 1310, 1411, 1412; GERM 1411, 1412; ITAL 1411, 1412; JAPN 1411, 1412; SGNL 1401, 1402, 2301, 2302; SPAN 1300, 1310, 1411, 1412, 2306 | | TOTAL 42 hours

* Specifically designed for elementary and middle school teachers.
† This course satisfies the mathematics core requirement of three semester hours; however, the fourth hour is not a part of the transfer core curriculum and may be transferred as an elective hour.
## GRADUATION REQUIREMENTS

### Requirements for the Associate of Arts:

A course cannot count toward more than one requirement of the degree with one exception – the multicultural requirement.

<table>
<thead>
<tr>
<th>Core Component</th>
<th>Course Options</th>
<th>Semester credit hours</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>COMMUNICATION</strong></td>
<td>ENGL 1301, 1302</td>
<td>9 hours</td>
</tr>
<tr>
<td></td>
<td>And 3 hours of Speech: SPCH 1144, 1145, 1311, 1315, 1318, 1321, 2144, 2145</td>
<td></td>
</tr>
<tr>
<td><strong>LITERATURE</strong></td>
<td>ENGL 2322, 2323, 2327, 2328, 2332, 2333, 2341, 2342, 2343</td>
<td>3 hours</td>
</tr>
<tr>
<td><strong>MATHEMATICS</strong></td>
<td>MATH 1314, 1316, 1324, 1325, 1332, 1342, *1350, *1351, 2318, 2320, 2412, 2413, 2414, 2415</td>
<td>3 hours</td>
</tr>
<tr>
<td><strong>NATURAL SCIENCES</strong></td>
<td>BIOL 1406 OR 1408, 1407 OR 1409, 2401, 2402, 2404, 2406, 2416, 2420, 2421; CHEM 1105 and 1305 OR 1405, 1411, 1412, 1419, 2423, 2425; GEOL 1403, 1404, 1405, 2307; PHYS 1401, 1402, 1410, 1411, 1412, 2425, 2426</td>
<td>8 hours</td>
</tr>
<tr>
<td><strong>VISUAL &amp; PERFORMING ARTS</strong></td>
<td>ARTS 1301, 1303, 1304, 1316, 2346, 2356; DRAM 1120, 1121, 1310, 1330, 1351, 1352, 2120, 2361, 2362; MUSI 1301, 1306, 1307, 1308, 1309, 1310</td>
<td>3 hours</td>
</tr>
<tr>
<td><strong>HUMANITIES</strong></td>
<td>ENGL 2307, 2322, 2323, 2327, 2328, 2332, 2333, 2341, 2342, 2343; HUMA 1301, 1302; PHIL 1301, 1304, 2306, 2321; SPCH 2341; FREN 2311, 2312; GERM 2311, 2312; ITAL 2311, 2312; SPAN 2311, 2312</td>
<td>3 hours</td>
</tr>
<tr>
<td><strong>SOCIAL/BEHAVIORAL SCIENCES</strong></td>
<td>HIST 1301, 1302, or 2301 (select 6 hours with 3 hours in U.S. History)</td>
<td>6 hours</td>
</tr>
<tr>
<td></td>
<td>GOVT 2301, 2302</td>
<td>6 hours</td>
</tr>
<tr>
<td></td>
<td>ANTH 2346, 2351; CRJ 1301, 1307; ECON 2301, 2302; GEOG 1300, 1303; GOVT 2304; HIST 2311, 2312, 2321, 2322; PSYC 2301, 2302, 2306, 2308, 2314, 2315, 2316, 2317, 2319; SOCI 1301, 1306, 2301, 2319, 2326</td>
<td>3 hours</td>
</tr>
<tr>
<td><strong>KINESIOLOGY</strong></td>
<td>Select any activity course: 1111-2184 excluding 3 credit-hour KINE classes</td>
<td>1 hour</td>
</tr>
<tr>
<td><strong>ELECTIVES</strong></td>
<td>ITSC 1401; COSC 1401 or equivalent (if course or competency challenge exams are not chosen and successfully completed)</td>
<td>16 hours</td>
</tr>
<tr>
<td><strong>MULTICULTURAL REQUIREMENT</strong></td>
<td>Students must take one of the above underlined courses or one of the following to meet the multicultural requirement of this degree: FREN 1300, 1310, 1411, 1412; GERM 1411, 1412; ITAL 1411, 1412; JAPN 1411, 1412; SGNL 1401, 1402, 2301, 2302; SPAN 1300, 1310, 1411, 1412, 2306</td>
<td>61 hours</td>
</tr>
</tbody>
</table>

* Specifically designed for elementary and middle school teachers.
## Requirements for the Associate of Science:

A course cannot count toward more than one requirement of the degree with one exception – the multicultural requirement.

<table>
<thead>
<tr>
<th>Core Component</th>
<th>Course Options</th>
<th>Semester credit hours</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>COMMUNICATION</strong></td>
<td>ENGL 1301 and 1302</td>
<td>9 hours</td>
</tr>
<tr>
<td></td>
<td>And 3 hours of Speech: SPCH 1144, 1145, 1311, 1315, 1318, 1321, 2144, 2145</td>
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<tr>
<td><strong>MATHEMATICS</strong></td>
<td>MATH 1314, 1316, 1324, 1325, 1332, 1342, *1350, *1351, 2138, 2139, 2320, 2412, 2413, 2414, 2415</td>
<td>6 hours</td>
</tr>
<tr>
<td><strong>NATURAL SCIENCES</strong></td>
<td>BIOL 1406 OR 1408, 1407 OR 1409, 2401, 2402, 2404, 2406, 2416, 2420, 2421; CHEM 1105 and 1305 OR 1405, 1411, 1412, 1419, 2423, 2425; GEOL 1403, 1404, 1405, 2307; PHYS 1401, 1402, 1410, 1411, 1412, 2425, 2426</td>
<td>16 hours</td>
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<tr>
<td><strong>VISUAL &amp; PERFORMING ARTS</strong></td>
<td>ARTS 1301, 1303, 1304, 1316, 2346, 2356; DRAM 1120, 1121, 1310, 1330, 1351, 1352, 2120, 2361, 2362; MUSI 1301, 1306, 1307, 1309, 1310</td>
<td>3 hours</td>
</tr>
<tr>
<td><strong>HUMANITIES</strong></td>
<td>ENGL 2307, 2322, 2323, 2327, 2328, 2332, 2333, 2341, 2342, 2343; HUMA 1301, 1302; PHIL 1301, 1304, 2306, 2321; SPCH 2341; FREN 2311, 2312; GERM 2311, 2312; ITAL 2311, 2312; SPAN 2311, 2312</td>
<td>3 hours</td>
</tr>
<tr>
<td><strong>SOCIAL/BEHAVIORAL SCIENCES</strong></td>
<td>HIST 1301, 1302, or 2301 (select 6 hours with 3 hours in U. S. History)</td>
<td>6 hours</td>
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<td></td>
<td>GOVT 2301 and 2302</td>
<td>6 hours</td>
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<td></td>
<td>ANTH 2346, 2351; CRIJ 1301, 1307; ECON 2301, 2302; GEOG 1300, 1303; GOVT 2304; HIST 2311, 2312, 2321, 2322; PSYC 2301, 2302, 2306, 2308, 2314, 2315, 2316, 2317, 2319; SOCI 1301, 1306, 2301, 2319, 2326</td>
<td>3 hours</td>
</tr>
<tr>
<td><strong>KINESIOLOGY</strong></td>
<td>Select any activity course: 1111-2184 excluding 3 credit-hour KINE classes</td>
<td>1 hour</td>
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<tr>
<td><strong>ELECTIVES</strong></td>
<td>ITSC 1401, COSC 1401 or equivalent (if course or competency challenge exams are not chosen and successfully completed)</td>
<td>8 hours</td>
</tr>
<tr>
<td><strong>MULTICULTURAL REQUIREMENT</strong></td>
<td>Students must take one of the above underlined courses or one of the following to meet the multicultural requirement of this degree: FREN 1300, 1310, 1411, 1412; GERM 1411, 1412; ITAL 1411, 1412; JPN 1411, 1412; SGNL 1401, 1402, 2301, 2302; SPAN 1300, 1310, 1411, 1412, 2306</td>
<td></td>
</tr>
</tbody>
</table>

* Specifically designed for elementary and middle school teachers.
## GRADUATION REQUIREMENTS

### Associate of Arts in Teaching

#### EC-4 Generalist

Leading to initial Texas teacher certification.

(AAT degree offered at Cy-Fair College, Kingwood College, Montgomery College, North Harris College, and Tomball College)

<table>
<thead>
<tr>
<th>FIRST YEAR</th>
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<tbody>
<tr>
<td><strong>First Semester</strong></td>
<td>Credit</td>
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<tr>
<td>GOVT 2301 American Government I</td>
<td>3</td>
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<tr>
<td>ENGL 1301 Composition &amp; Rhetoric I</td>
<td>3</td>
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<tr>
<td>SPCH 1315 Public Speaking</td>
<td>3</td>
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<tr>
<td>EDUC 1301 Intro to the Teaching Profession</td>
<td>3</td>
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<tr>
<td>MATH 1314 College Algebra</td>
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<td><strong>SEMMESTER TOTAL</strong></td>
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<table>
<thead>
<tr>
<th>Second Semester</th>
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<tbody>
<tr>
<td>ARTS 1301 Art Appreciation</td>
<td>3</td>
</tr>
<tr>
<td>HIST 1301 U.S. History to 1877</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 1302 Composition &amp; Rhetoric II</td>
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<tr>
<td>MATH 1350 Foundations of Math I</td>
<td>3</td>
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<tr>
<td>Elective Art, Drama or Music</td>
<td>4</td>
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<td><strong>SEMMESTER TOTAL</strong></td>
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<table>
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<tr>
<th>SECOND YEAR</th>
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<tbody>
<tr>
<td><strong>First Semester</strong></td>
<td>Credit</td>
</tr>
<tr>
<td>HIST 1302 U.S. History since 1877</td>
<td>3</td>
</tr>
<tr>
<td>MATH 1351 Foundations of Math II</td>
<td>3</td>
</tr>
<tr>
<td>EDUC 2301 Intro to Special Populations</td>
<td>3</td>
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<tr>
<td>Elective Science</td>
<td>4</td>
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<tr>
<td><strong>SEMMESTER TOTAL</strong></td>
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</table>

<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Credit</th>
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</thead>
<tbody>
<tr>
<td>TECA 1354 Child Growth and Development</td>
<td>3</td>
</tr>
<tr>
<td>GEOL 1403 Physical Geology</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 1410 Elementary Physics</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 2302 American Government II</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 3 Elective</td>
<td>3</td>
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<tr>
<td>KINE 1 Physical Activity</td>
<td>1</td>
</tr>
<tr>
<td>GEOG 1300 Principles of Geography OR</td>
<td>3</td>
</tr>
<tr>
<td>GEOG 1303 World Geography</td>
<td>3</td>
</tr>
<tr>
<td><strong>SEMMESTER TOTAL</strong></td>
<td>17</td>
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</table>

**Total Credit Hours for AA Degree in Teaching**: 61

1 ARTS 1301 meets the multicultural requirement.

2 Eight total hours of science must consist of four hours each of two science courses with labs. Choose BIOL 1406, 1407, 1408, 1409, CHEM 1411, or 1412.

3 Select from: ENGL 2322, 2323, 2327, 2328, 2332 or 2333.

NHMCCD requires students to meet the computer literacy competency.

It is strongly recommended that students speak with an advisor at the transferring institution to confirm transferability of courses into degree plans, THEA score requirements, and SBEC requirements.

### Associate of Arts in Teaching

#### EC-4 Early Childhood Specialization

Leading to initial Texas teacher certification.

(AAT degree offered at North Harris College, and Montgomery College)

<table>
<thead>
<tr>
<th>FIRST YEAR</th>
<th>Credit</th>
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</thead>
<tbody>
<tr>
<td>PSYC 2301 General Psychology</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 1301 Composition &amp; Rhetoric I</td>
<td>3</td>
</tr>
<tr>
<td>TECA 1311 Educating Young Children</td>
<td>3</td>
</tr>
<tr>
<td>MATH 1314 College Algebra</td>
<td>3</td>
</tr>
<tr>
<td>ART 1301 Art Appreciation OR</td>
<td>3</td>
</tr>
<tr>
<td>Elective Art, Drama or Music</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 2301 American Government I</td>
<td>3</td>
</tr>
<tr>
<td><strong>SEMMESTER TOTAL</strong></td>
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<table>
<thead>
<tr>
<th>Second Semester</th>
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<tbody>
<tr>
<td>TECA 1303 Family, School and Community</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 1302 Composition &amp; Rhetoric II</td>
<td>3</td>
</tr>
<tr>
<td>MATH 1350 Foundations of Math I</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 1408 Intro to Biology I (non-majors) OR</td>
<td>4</td>
</tr>
<tr>
<td>BIOL 1406 Biology I (for majors)</td>
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</tr>
<tr>
<td>HUMA 1301 Intro to Humanities</td>
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<td><strong>SEMMESTER TOTAL</strong></td>
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<table>
<thead>
<tr>
<th>SECOND YEAR</th>
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<tbody>
<tr>
<td>TECA 1318 Wellness and the Young Child</td>
<td>3</td>
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<tr>
<td>BIOL 1409 Intro to Biology II (non-majors) OR</td>
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</tr>
<tr>
<td>BIOL 1407 Biology II (for majors)</td>
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<tr>
<td>HIST 1301 U.S. History to 1877</td>
<td>3</td>
</tr>
<tr>
<td>MATH 1351 Foundations of Math II</td>
<td>3</td>
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<tr>
<th>Second Semester</th>
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<tbody>
<tr>
<td>SPCH 1315 Public Speaking</td>
<td>3</td>
</tr>
<tr>
<td>TECA 1354 Child Growth and Development</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 2327 Survey of American Literature I</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 2302 American Government II</td>
<td>3</td>
</tr>
<tr>
<td>HIST 2301 Texas History</td>
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<tr>
<td>KINE 1 Physical Activity</td>
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<td><strong>SEMMESTER TOTAL</strong></td>
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</table>

**Total Credit Hours for AA Degree in Teaching**: 66

1 Select one core elective from art, drama or music.

2 Humanities course meets the multicultural elective, or select core elective from foreign language, 2nd year HIST or ENGL that meets the humanities requirement.

NHMCCD requires students to meet the computer literacy competency.

It is strongly recommended that students speak with an advisor at the transferring institution to confirm transferability of courses into degree plans, THEA score requirements, and SBEC requirements.
Associate of Arts in Teaching

**Grades 4-8 Generalist**

Leading to initial Texas teacher certification.

(AAT degree offered at Cy-Fair College, Kingwood College, Montgomery College, North Harris College, and Tomball College)

**FIRST YEAR**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Credit</th>
</tr>
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<tbody>
<tr>
<td>GOVT 2301 American Government I</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 1301 Composition &amp; Rhetoric I</td>
<td>3</td>
</tr>
<tr>
<td>SPCH 1315 Public Speaking</td>
<td>3</td>
</tr>
<tr>
<td>EDUC 1301 Intro to the Teaching Profession</td>
<td>3</td>
</tr>
<tr>
<td>MATH 1314 College Algebra</td>
<td>3</td>
</tr>
<tr>
<td><strong>SEMESTER TOTAL</strong></td>
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<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARTS 1301 Art Appreciation</td>
<td>3</td>
</tr>
<tr>
<td>HIST 1301 U.S. History to 1877</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 1302 Composition &amp; Rhetoric II</td>
<td>3</td>
</tr>
<tr>
<td>MATH 1350 Foundations of Math I</td>
<td>3</td>
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<tr>
<td>Elective</td>
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<td><strong>SEMESTER TOTAL</strong></td>
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**SECOND YEAR**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Credit</th>
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<tr>
<td>HIST 1302 U.S. History since 1877</td>
<td>3</td>
</tr>
<tr>
<td>MATH 1351 Foundations of Math II</td>
<td>3</td>
</tr>
<tr>
<td>EDUC 2301 Intro to Special Populations</td>
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<tr>
<td>Elective</td>
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<td><strong>SEMESTER TOTAL</strong></td>
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<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Credit</th>
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<tbody>
<tr>
<td>TECA 1354 Child Growth and Development</td>
<td>3</td>
</tr>
<tr>
<td>GEOL 1403 Physical Geology OR</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 1410 Elementary Physics</td>
<td>4</td>
</tr>
<tr>
<td>GOVT 2302 American Government II</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 2322, 2323, 2327, 2328, 2332 or 2333</td>
<td>3</td>
</tr>
<tr>
<td>KINE Physical Activity</td>
<td>1</td>
</tr>
<tr>
<td>GEOG 1300 Principles of Geography OR</td>
<td>3</td>
</tr>
<tr>
<td>GEOG 1303 World Geography</td>
<td>3</td>
</tr>
<tr>
<td><strong>SEMESTER TOTAL</strong></td>
<td><strong>17</strong></td>
</tr>
</tbody>
</table>

Total Credit Hours for AA Degree in Teaching 61

1 ARTS 1301 meets the multicultural requirement.
2 Eight total hours of science must consist of four hours each of two science courses with labs. Choose BIOL 1406, 1407, 1408, 1409, CHEM 1411, or 1412.
3 Select from: ENGL 2322, 2323, 2327, 2328, 2332 or 2333.

NHMCCD requires students to meet the computer literacy competency.

It is strongly recommended that students speak with an adviser at the transferring institution to confirm transferability of courses into degree plans, THEA score requirements, and SBEC requirements.
GRADUATION REQUIREMENTS

Requirements for the Associate of Arts in Teaching Grades 8-12 Specialist

Leading to initial Texas teacher certification.

A course cannot count toward more than one requirement of the degree with one exception – the Multicultural requirement

Students should check with their university regarding the transferability of specific courses

<table>
<thead>
<tr>
<th>Core Component</th>
<th>Course Options</th>
<th>Semester credit hours</th>
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</thead>
<tbody>
<tr>
<td>COMMUNICATION</td>
<td>ENGL 1301, 1302</td>
<td>6 hours</td>
</tr>
<tr>
<td></td>
<td>SPCH 1311, 1315, 1321</td>
<td>3 hours</td>
</tr>
<tr>
<td>LITERATURE</td>
<td>ENGL 2322, 2323, 2327, 2328, 2332, 2334, 2341, 2342, 2343</td>
<td>3 hours</td>
</tr>
<tr>
<td>MATHEMATICS</td>
<td>MATH 1314, 1316, 1324, 1325, 1342, 2318, 2320, 2412, 2413, 2414, 2415</td>
<td>3 hours</td>
</tr>
<tr>
<td>NATURAL SCIENCES</td>
<td>BIOL 1406 OR 1408, 2401, 2406, 2416, 2421; CHEM 1105 and 1305 OR 1405, 1411</td>
<td>8 hours</td>
</tr>
<tr>
<td>VISUAL &amp; PERFORMING ARTS</td>
<td>ARTS 1301, 1303, 1304, DRAM 1310, 2361, 2362; MUSI 1301, 1306, 1307, 1308, 1309, 1310</td>
<td>3 hours</td>
</tr>
<tr>
<td>HUMANITIES</td>
<td>ENGL 2307, 2322, 2323, 2327, 2328, 2332, 2333, 2341, 2342, 2343; HUMA 1301, 1302; PHIL 1301, 1304, 2306, 2321; SPCH 2341; FREN 2311, 2312; GERM 2311, 2312; ITAL 2311, 2312; SPAN 2311, 2312</td>
<td>3 hours</td>
</tr>
<tr>
<td>SOCIAL/BEHAVIORAL SCIENCES</td>
<td>HIST 1301 or 2301, 1302 (select 6 hours with 3 hours in U.S. History)</td>
<td>6 hours</td>
</tr>
<tr>
<td></td>
<td>GOVT 2301, 2302</td>
<td>6 hours</td>
</tr>
<tr>
<td></td>
<td>GEOG 1303</td>
<td>3 hours</td>
</tr>
<tr>
<td>KINESIOLOGY</td>
<td>Select any activity course: 1111-2184 excluding 3 credit-hour KINE classes</td>
<td>1 hour</td>
</tr>
<tr>
<td>FIELD EXPERIENCE</td>
<td>EDUC 1301 and 2301</td>
<td>6 hours</td>
</tr>
<tr>
<td>CONTENT AREA SPECIALIZATION</td>
<td>Students must choose courses from one of the specializations listed below:</td>
<td>12 hours</td>
</tr>
<tr>
<td>JOURNALISM</td>
<td>COMM 1307, 2302, 2311</td>
<td>9 hours</td>
</tr>
<tr>
<td></td>
<td>COMM 1316, 2305, 2337, 2339</td>
<td>3 hours</td>
</tr>
<tr>
<td>MATH</td>
<td>MATH 2413, 2414, 2415</td>
<td>12 hours</td>
</tr>
<tr>
<td>MULTICULTURAL REQUIREMENT</td>
<td>Students must take one of the above underlined courses to meet the multicultural requirement of this degree.</td>
<td></td>
</tr>
</tbody>
</table>

TOTAL 63 hours
Transferability

Requirements for a baccalaureate degree in any given major are set by the university granting that degree. Students who wish to receive an associate of arts degree or an associate of science degree from NHMCCD must incorporate the degree requirements previously listed with those of the college/university of their choice. To minimize problems with transferability of courses, students should make their choice of a college or university as soon as possible and obtain a catalog from that institution. A faculty adviser or counselor should be consulted and a degree plan developed to ensure progress toward the student’s educational goal. There are financial rewards if a student completes a bachelor’s degree by enrolling in no more than three semester credit hours above the degree plan. A student who enrolls in 30 or more credit hours above the baccalaureate degree plan may have to pay out-of-state tuition rates for the excess hours.

Graduate Guarantee

North Harris Montgomery Community College District guarantees that graduates who complete the requirements for the associate of arts or the associate of science degree will be able to perform at a senior college or university at a level equivalent to other transfer students or to the college’s native students. To meet this commitment to its graduates, the district will provide additional academic coursework or tutoring support tuition-free.

The district also guarantees that graduates with the associate of applied science degree or a certificate will have acquired the job skills for entry level employment in the field of their award. To meet this commitment, the district will provide additional technical skills training tuition-free for up to one year following graduation if the graduate’s employer decides he/she lacks any entry-level technical skills taught as part of the NHMCCD program.

For information related to the guarantee, please contact the instructional vice president at any NHMCCD college.

Field of Study Curriculum

Field of study curricula were mandated in Senate Bill 148 of the 75th Texas Legislature (1997). The field of study curricula will satisfy the lower division requirements for a bachelor’s degree in a specific academic area at a general academic teaching institution. The student will receive full academic credit toward the degree program for the block of courses transferred which will meet that institution’s lower division requirements for the degree program in the field of study into which the student transfers.

A student who transfers from one institution of higher education to another without completing the field of study curriculum of the sending institution shall receive academic credit in the field of study curriculum of the receiving institution for each of the courses that the student has successfully completed in the field of study. The field of study curricula which have been approved are: Business, Computer Science, Criminal Justice, Music and Speech Communication.

Field of Study Curriculum in Business

Business

Leading to the bachelor of business administration degree at the awarding institution.

Associate of Arts Degree with Field of Study Transfer Curriculum for Business
(degree offered at Cy-Fair, Kingwood, Montgomery, North Harris, and Tomball College)

First Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ENGL 1301</strong> Composition &amp; Rhetoric I</td>
<td>3</td>
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<tr>
<td><strong>COSC 1401</strong> Intro to Computers (or higher)</td>
<td>4</td>
</tr>
<tr>
<td><strong>HIST 1</strong> Elective</td>
<td>3</td>
</tr>
<tr>
<td><strong>SPCH 2</strong> Elective</td>
<td>3</td>
</tr>
<tr>
<td>Elective Visual and Performing Arts Elective</td>
<td>3</td>
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<tr>
<td><strong>SEMESTER TOTAL</strong></td>
<td><strong>16</strong></td>
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Second Semester

<table>
<thead>
<tr>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>HIST 1</strong> Elective</td>
</tr>
<tr>
<td><strong>ACCT 2401</strong> Principles of Accounting I</td>
</tr>
<tr>
<td><strong>MATH 1314</strong> College Algebra</td>
</tr>
<tr>
<td><strong>ECON 2301</strong> Macroeconomics</td>
</tr>
<tr>
<td><strong>ENGL 1302</strong> Composition &amp; Rhetoric II</td>
</tr>
<tr>
<td><strong>SEMESTER TOTAL</strong></td>
</tr>
</tbody>
</table>
GRADUATION REQUIREMENTS

SECOND YEAR
First Semester Credit
ECON 2302 Microeconomics 3
GOVT 2301 Amer Govt: Natl, State & Local I 3
ACCT 2402 Principles of Accounting II 4
Elective 3 Humanities Elective 3
Elective Natural Sciences Elective 4
SEMMESTER TOTAL 17

Second Semester Credit
GOVT 2302 A Amer Govt: Natl, State & Local II 3
Math 1325 Elements Calculus w/Applications 3
Elective 3 Business Elective 3
Elective Natural Sciences Elective 4
ENGL 5 Literature Elective 3
KINE 1111 Fitness for Life I 1
SEMMESTER TOTAL 17

Total Credit Hours for Field of Study 66

1 Select 2 from HIST 1301, 1302, 2301 (3 hrs. U.S. History)
2 Select from: SPCH 1311, 1315, or 1321 (preferred)
3 Select course to meet multicultural requirement.
4 Select from: BUSI 1301, 1307, 2301, 2304, or 2372 (according to preference of college transfer)
5 Select from: ENGL 2322, 2323, 2327, 2328, 2332, 2333

Field of Study Curriculum in
Computer Science

Computer Science

Leading to the bachelor of science degree in computer science or computer management information system.

Associate of Arts with Field of Study Transfer
Curriculum for Computer Science
(degree offered at Cy-Fair, Kingwood, Montgomery, and Tomball College)

Summer Semester
MATH 1314 College Algebra 3
MATH 1316 Trigonometry 3
SEMMESTER TOTAL 6

FIRST YEAR
First Semester Credit
COSC 1436 Programming Fundamentals I 4
ENGL 1301 Composition and Rhetoric I 3
HIST 1301 U.S. History to 1877 3
MATH 2412 Pre-Calculus 4
KINE 1 Activity Course 1
SEMMESTER TOTAL 15

Second Semester
COSC 1437 Programming Fundamentals II 4
ENGL 1302 Composition and Rhetoric II 3
HIST 1302 U.S. History since 1877 3
MATH 2413 Calculus I 4
SPCH 3 Communications 3
SEMMESTER TOTAL 17

SECOND YEAR
First Semester Credit
COSC 2436 Programming Fundamentals III 4
MATH 2414 Calculus II 4
PHYS 2425 Mechanics & Heat 4
GOVT 2301 Amer Govt: Natl, State & Local I 3
SEMMESTER TOTAL 15

Second Semester Credit
COSC 2425 Computer Organization & Machine Language 4
Elective 3 Humanities 3
PHYS 2426 Electricity, Magnetism, & Light 4
GOVT 2302 Amer Govt: Natl, State & Local II 3
SEMMESTER TOTAL 14

Total Credit Hours for Field of Study
Computer Science 67

Students must take one of the approved humanities courses to meet the multicultural requirement of this degree.

1 Select any activity course: KINE 1111-2184 excluding KINE classes with 3 credit hours.
2 Select from SPCH 1311, 1315, 1318, or 1321
3 Select from: HIST 2321, 2322; HUMA 1301; PHIL 1304, FREN 2311, 2312; GERM 2311, 2312; ITAL 2311, 2312; SPAN 2311, 2312

Field of Study Curriculum in
Criminal Justice

Criminal Justice

Leading to the bachelor of criminal justice degree.

Associate of Arts with Field of Study Transfer
Curriculum for Criminal Justice
(degree offered at Cy-Fair, Kingwood, Montgomery, North Harris, and Tomball College)

FIRST YEAR
First Semester Credit
ENGL 1301 Composition and Rhetoric I 3
HIST Elective 3
CRJ 1301 Introduction to Criminal Justice 3
ITSC 1401 Intro to Computer Information OR 4
COSC 1401 Intro to Computer Information Activity Course 1
KINE Activity Course 1
SEMMESTER TOTAL 14

Second Semester
ENGL 1302 Composition and Rhetoric II 3
HIST Elective 3

80
Field of Study Curriculum in Music

Music

Leading to the bachelor of music degree but may also be applied to the bachelor of arts or other baccalaureate-level music degrees as deemed appropriate by the awarding institution.

Associate of Arts with Field of Study Transfer Curriculum for Music (degree offered at Cy-Fair, Kingwood, Montgomery, North Harris, and Tomball College)

FIRST YEAR

First Semester

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit</th>
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<tbody>
<tr>
<td>MUSI</td>
<td>Theory I</td>
<td>2</td>
</tr>
<tr>
<td>MUSI</td>
<td>Ear Training &amp; Sight Singing I</td>
<td>2</td>
</tr>
<tr>
<td>MUSI</td>
<td>Class Piano I</td>
<td>1</td>
</tr>
<tr>
<td>MUAP</td>
<td>Elective</td>
<td>2</td>
</tr>
<tr>
<td>ENGL</td>
<td>Composition &amp; Rhetoric I</td>
<td>3</td>
</tr>
<tr>
<td>HIST</td>
<td>United States History to 1877</td>
<td>3</td>
</tr>
<tr>
<td>MUEN</td>
<td>Major Performance Ensemble Elective</td>
<td>1</td>
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Second Semester

<table>
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<th>Course Title</th>
<th>Credit</th>
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<tbody>
<tr>
<td>MUSI</td>
<td>Theory II</td>
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<tr>
<td>MUSI</td>
<td>Ear Training &amp; Sight Singing II</td>
<td>2</td>
</tr>
<tr>
<td>MUSI</td>
<td>Class Piano II</td>
<td>1</td>
</tr>
<tr>
<td>MUAP</td>
<td>Elective</td>
<td>2</td>
</tr>
<tr>
<td>GOVT</td>
<td>Amer Govt: Natl, State &amp; Local I</td>
<td>3</td>
</tr>
<tr>
<td>SPCH</td>
<td>Public Speaking</td>
<td>3</td>
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<tr>
<td>MUSI</td>
<td>Major Performance Ensemble Elective</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td><strong>SEMESTER TOTAL</strong></td>
<td><strong>17</strong></td>
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</tbody>
</table>

Total Credit Hours for Field of Study Music 65

1 Corequisites: Students will be required to take 0-4 hours of class piano as secondary applied until they pass their piano proficiency exam. Students taking keyboard as a major instrument should be encouraged to take another secondary applied area (voice).

2 ENGL 2322, 2323, 2327, 2328

3 Symphonic band, concert choir, symphony orchestra; guitar and bass majors may use jazz ensemble.

Field of Study Curriculum in Speech Communication

Speech Communication

Leading to the bachelor of arts degree with a speech communication major.

Associate of Arts with Field of Study Transfer Curriculum for Speech Communication (degree offered at Cy-Fair, Kingwood, Montgomery, North Harris, and Tomball College)

FIRST YEAR

First Semester

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL</td>
<td>Composition and Rhetoric I</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>SEMESTER TOTAL</strong></td>
<td><strong>17</strong></td>
</tr>
</tbody>
</table>
GRADUATION REQUIREMENTS

HIST 1301 US History to 1877 3
SPCH 1311 Introduction to Speech Communication 3
COSC 1401 Intro to Computer Information 4
KINE Activity Course 1
SEMMESTER TOTAL 14

Second Semester Credit
ENGL 1302 Composition and Rhetoric II 3
HIST 1302 US History since 1877 3
SPCH 1318 Interpersonal Communication 3
Elective Science 4
MATH 1314 College Algebra 3
SEMMESTER TOTAL 16

SECOND YEAR

First Semester Credit
GOVT 2301 Amer Govt: Natl, State & Local I 3
Elective English Literature 3
Elective Science 4
SPCH 1315 Public Speaking OR 3
1321 Business and Professional
SPCH 1342 Voice And Diction OR 3
2341 Oral Interpretation
SEMMESTER TOTAL 16

Second Semester
GOVT 2302 Amer Govt: Natl, State & Local II 3
Elective Visual and Performing Arts 3
Elective Humanities 3
Elective 3
SPCH 2333 Small Group Communication 3
SEMMESTER TOTAL 15

Total Credit Hours for Field of Study
Speech Communications 61

History
Area of Concentration (AOC)

Students interested in working toward a major in history can complete the requirements for the associate of arts degree and the AOC hours for history. Following is the 15-hour area of concentration course requirements. For advising assistance contact one of the history instructors. Upon successful completion, graduates will receive an AA degree with an AOC in history.

Required Courses:
HIST 1301 United States History to 1877
HIST 1302 United States History since 1877

Choose one from the following:
HIST 2311 History of Western Civilization I
HIST 2312 History of Western Civilization II
HIST 2321 World History I
HIST 2322 World History II
Elective
Elective

1. Choose electives from HIST 2301, 2311, 2312, 2321, 2322, 2351.

* Courses meeting the elective requirement can only be used once toward the degree plan.

International Studies
Area of Concentration (AOC)

The International Studies AOC is an introduction for freshman/sophomore college students to global studies with an emphasis on the 20th and 21st centuries. By taking a diverse set of courses with a world view, students will broaden their perspectives and gain an appreciation and awareness of the global community. Students desiring to work toward a major in international education can complete the requirements for the associate of arts degree and the AOC hours for international education. There is a 15-hour minimum for this area of concentration with a two-year foreign language component. Students must complete at least 9 hours of the 17-hour minimum within the colleges of the NHMCCD to receive this AOC designation. Upon successful completion, graduates will receive an AA degree with an AOC in international education. AOC courses must be selected from those sections designated in the schedule as international studies sections (IS).

Elective Modern Language 6-8
GEOG 1303 World Geography 3
Elective Modern Language or International Studies 6-8

Total Credit Hours for International Studies Area of Concentration 15-19

Students must also complete the core computer literacy requirement.
THE UNIVERSITY CENTER
DEGREE PLANS
www.tuc.edu

BACHELOR'S DEGREE
(undergraduate programs)

Accounting
Sam Houston State University

Applied Arts and Sciences
Sam Houston State University

Biological and Physical Sciences
University of Houston-Downtown

Biotechnology
University of Houston-Downtown

Computer Information Systems
University of Houston-Downtown

Consumer Science and Merchandising
University of Houston

Criminal Justice
Sam Houston State University

English
University of Houston

Finance
University of Houston-Downtown

General Business Administration
Sam Houston State University

History
University of Houston

Hotel and Restaurant Management
University of Houston

Human Performance
Texas Southern University

Interdisciplinary Academic Studies in Elementary Certification
Sam Houston State University
Texas Southern University

Interdisciplinary Studies
University of Houston-Downtown

Management
Sam Houston State University

Marketing
University of Houston-Downtown

Nursing
Prairie View A&M University

Political Science
Sam Houston State University

Psychology
Sam Houston State University

Social Work
Prairie View A&M University

Sociology
Prairie View A&M University

Technology Leadership and Supervision
University of Houston

MASTER'S DEGREES
(graduate programs)

Business Administration
Sam Houston State University

Business Administration-Executive MBA
Texas A&M University

Computer Science
University of Houston

Counselor Education
Texas Southern University
GRADUATION REQUIREMENTS

Criminal Justice
   Sam Houston State University

Curriculum and Instruction
   (Gifted & Talented)
   University of Houston

Educational Administration
   Prairie View A&M University

Educational Human Resource Development
   Texas A&M University

Educational Leadership: Administrators/
   Supervisors Certificate
   Sam Houston State University

Educational Psychology: Hispanic
   Bilingual Education
   Texas A&M University

Educational Psychology: Special Education
   Texas A&M University

Educational Technology
   Texas A&M University

Electrical Engineering
   University of Houston

Elementary/Early Childhood
   Prairie View A&M University

Elementary Education
   Sam Houston State University

Engineering
   Prairie View A&M University

Engineering Management
   University of Houston

Engineering Systems Management
   Texas A&M University

English
   Sam Houston State University

History
   Sam Houston State University

Hospitality Management
   University of Houston

Nursing
   Prairie View A&M University

Petroleum Engineering
   Texas A&M University

Political Science
   Sam Houston State University

Psychology
   Sam Houston State University

Public Administration (M.P.A.)
   Sam Houston State University

Secondary Education
   Sam Houston State University

Sociology
   Sam Houston State University

Special Education: Educational
   Diagnostician Certification
   Sam Houston State University

Training and Development
   University of Houston

SPECIAL PROGRAMS

Educational Leadership Doctorate
   Sam Houston State University

Pharmacy Doctorate
   Texas Southern University

Post Baccalaureate Teacher Certification
   Prairie View A&M University
   Sam Houston State University
ASSOCIATE OF APPLIED SCIENCE DEGREE

The associate of applied science degree is issued to students who complete a college-level career-education curriculum. This degree is designed to prepare students for employment in a specific career. It is issued to students who successfully fulfill the general requirements, in addition to the specific technical or workforce curriculum for each program and the general education core requirements listed below.

REQUIREMENTS

The general education block for each program must contain a minimum of 15 college credit hours.

1. The general education block for each program must include ENGL 1301.
2. The general education block for each program must contain at least one course from each of the following categories:
   - Math/Natural Sciences
   - Social/Behavioral Sciences
   - Humanities/Fine Arts
3. In addition, graduates are expected to master the NHMCCD perspectives in the core curriculum and the basic intellectual competencies in the core curriculum (pages 70-71). These requirements can be fulfilled through successful completion of identified courses or attainment of identified competencies in a specific certificate or program. Program administrators, faculty, or advisers will provide specific information.
4. Furthermore, graduates need to meet the computer literacy, math, and oral communication competencies, and multicultural requirements.

CERTIFICATE PROGRAMS AND GENERAL REQUIREMENTS

Certificates are awarded upon the completion of specific courses which have been industry-validated and sequenced for the purpose of developing and upgrading skills in an occupation. The programs vary in length and are designed to prepare the student for employment. Students will receive their certificate from the NHMCCD college authorized to offer the total certificate program at which he/she has completed the greatest number of technical program credit hours applicable to the degree or certificate. To be awarded a certificate from NHMCCD, a student must:

1. Have fulfilled all the course requirements for a certificate program, completing at least 50 percent of coursework at NHMCCD.
2. Earn a cumulative grade point average of 2.00 in all courses required for the certificate.
3. Students MUST APPLY FOR GRADUATION before a certificate can be awarded.
4. Students desiring an Enhanced Skills Certificate must complete the related NHMCCD associate’s degree prior to enrollment.
5. Students desiring an Advanced Technical Certificate must complete a related associate’s or bachelor’s degree prior to enrollment.
GRADUATION REQUIREMENTS

Requirements for the Associate of Applied Science:

A course cannot count toward more than one requirement of the degree with one exception – the multicultural requirement. See individual program or certificate degree plans for specific courses.

See individual programs for specific information

<table>
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<tr>
<th>Core Component (General Education courses)</th>
<th>Course Options</th>
<th>Semester credit hours</th>
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<tbody>
<tr>
<td><strong>COMPOSITION</strong></td>
<td>ENGL 1301</td>
<td>3 hours</td>
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<td><strong>MATH/NATURAL SCIENCES</strong></td>
<td>BIOL 1322, 1406 or 1408, 1407 or 1409, 2401, 2402, 2404, 2406, 2416, 2420, 2421; CHEM 1105 and 1305 or 1405, 1411, 1412, 1419, 2423, 2425; GEOL 1403, 1404, 1405, 2307; MATH 1314, 1316, 1324, 1325, 1332, 1342; *1350, *1351, 2320, 2412, 2413, 2414, 2415; PHIL 2303; PHYS 1401, 1402, 1410, 1411, 2425, 2426; Minimum of 1 course.</td>
<td>3 hours</td>
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<td><strong>SOCIAL/BEHAVIORAL SCIENCES</strong></td>
<td>ANTH 2346, 2351; CRJ 1301, 1307; ECON 2301, 2302; GEOG 1300, 1303; GOVT 2301, 2302, 2304; HIST 1301, 1302, 2301, 2311, 2312, 2321, 2322; PSYC 2301, 2302, 2306, 2308, 2314, 2315, 2316, 2317, 2319, 2340; SOCI 1301, 1306, 2301, 2319, 2326; Minimum of 1 course.</td>
<td>3 hours</td>
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<td><strong>HUMANITIES/ FINE ARTS</strong></td>
<td>ARTS 1301, 1303, 1304, 1316, 2346, 2356, COMM 1318; DRAM 1120, 1121, 1310, 1330, 1351, 1352, 2120, 2361, 2362; ENGL 1302, 2307, 2322, 2323, 2327, 2328, 2332, 2333, 2341, 2342, 2343; HUMA 1301, 1302; MUSI 1301, 1306, 1307, 1308, 1309, 1310; PHIL 1301, 1304, 2306, 2321; SPCH 2341; FREN 2311, 2312; GERM 2311, 2312; ITAL 2311, 2312; SPAN 2311, 2312; Minimum of 1 course</td>
<td>3 hours</td>
</tr>
<tr>
<td><strong>ELECTIVE</strong></td>
<td>To meet NHMCCD core requirements (general education courses), see individual program degree plans for specific course.</td>
<td>3 hours</td>
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<tr>
<td><strong>SPECIFIC WORKFORCE OR SUPPORT PROGRAM COURSES</strong></td>
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<td>45-57 hours</td>
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<tr>
<td><strong>MULTICULTURAL REQUIREMENTS</strong></td>
<td>Students must take one of the above underlined courses to meet the multicultural requirement of this degree or master the multicultural competencies contained in a specific degree program or take one of the following courses to meet the multicultural requirement of this degree. ENGL 2342, 2343; FREN 1300, 1310, 1411, 1412; GERM 1411, 1412; ITAL 1411, 1412; JAPN 1411, 1412; SGNL 1401, 1402, 2301, 2302; SPAN 1300, 1310, 1411,1412, 2306.</td>
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<td>TOTAL (individual programs vary) 60-72 hours</td>
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* Specifically designed for elementary and middle school teachers.

Please see graduation requirements.

NOTE: The CORE COMPONENT of this degree is 15 semester hours.
## Associate of Applied Science (AAS) Degrees and Certificates

★ **Total Certificate or Degree Offered**  ☆ **Some Courses Offered**

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<tr>
<th>DEGREES AND CERTIFICATES CLUSTERS</th>
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<tr>
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<tr>
<td>Logistics Management, Tech Prep (AAS.LOMT)</td>
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<td>Legal Office Technology (page 163)</td>
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## Degrees and Certificates Clusters

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<td>Programming Specialist, Tech Prep (AAS.CSPP)</td>
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## Graduation Requirements

### Degrees and Certificates Clusters

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### Health Science Professions

#### Biotechnology (page 98)
- AAS Degree (AAS.BIOT) ✦ ✧ ✧
- Biotechnology, Advanced Technical Certificate (C4.BIO4) ✧

#### Dental Hygiene (page 114)
- AAS Degree, Dental Hygiene (AAS.DNHY) ✧

#### Diagnostic Medical Sonography (page 115)
- AAS Degree (AAS.SONO) ✧
- Advanced Technical Certificate, Sonography (C4.SON4) ✧

#### Emergency Medical Services Professions (page 117)
- AAS Degree, Tech Prep (AAS.EMST) ✧ ✧
- Certificate, Emergency Medical Services Prof Paramedic (C1.EMP1) ✧ ✧ ✧ ✧
- Certificate, Emergency Medical Services Prof Intermediate (C1.EMI1) ✧ ✧ ✧ ✧

#### Health Information Technology (page 128)
- AAS Degree, Tech Prep (AAS.HINT) ✧

#### Medical Assisting (page 143)
- Certificate, Medical Assisting (C1.MED1) ✧ ✧

#### Medical Coding (page 129)
- Certificate, Physician Office-Based Billing & Coding (C1.POB1) ✧
- Certificate, Hospital-Based Coding (C2.HBC2) ✧

#### Medical Office Technology (page 161)
- Medical Office Administrator, Tech Prep (AAS.MOAD) ✧ ✧ ✧ ✧ ✧
- Certificate, Medical Administrative Assistant (C2.MAA2) ✧ ✧ ✧ ✧ ✧
- Certificate, Medical Office Receptionist (C1.MOR1) ✧ ✧ ✧ ✧ ✧
- Certificate, Medical Front Office Specialist (C1.MFO1) ✧ ✧ ✧ ✧ ✧

#### Medical Radiological Technology (page 143)
- AAS Degree (AAS.MRDR) ✧ ✧

#### Medical Transcription (page 130)
- Certificate, Medical Transcription (C1.MTR1) ✧ ✧ ✧

#### Nursing (page 145)
- Associate Degree Nursing (integrated curriculum), Tech Prep (AAS.AADN) ✧ ✧ ✧ ✧
- Associate Degree Nursing (block curriculum) (AAS.ADNB) ✧
- Transition to Professional Nursing for Articulating Students (AAS.PRN) ✧ ✧ ✧
- Certificate, Nursing Assistant (C1.ANA1) ✧ ✧ ✧ ✧
- Certificate, Vocational Nursing ADN to VN Elective (C2.AVN) ✧
- Certificate, Vocational Nursing (C2.PRN) ✧ ✧ ✧ ✧

#### Occupational Therapy Assistant (page 152)
- AAS Degree (AAS.OCTA) ✧ ✧
### DEGREES AND CERTIFICATES CLUSTERS

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### Service Professions

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## Prefixes Assigned to Programs & Disciplines

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<td>Child Development and Family Studies</td>
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<td>COSC, GAME, INEW, ITCC, ITMC, ITNW, ITSC, ITSE, ITSW, ITSY</td>
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### Crosswalk of Courses

Visit our Web site at http://www.nhmccd.edu/goto/coursecrosswalk to see a crosswalk of course revisions. This crosswalk revision will identify the new course and what course it replaces due to course number, course prefix or title changes.

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<td>ARTC 1345 3-D Modeling and Rendering</td>
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<td>ITMC 1419 Installing &amp; Administering MS Win Service OS</td>
<td>ITMT 1400 Implement and Support MS Win XP Professional</td>
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<td>ITMC 1441 Implementing MS Win Professional and Server</td>
<td>ITMT 1440 Manage and Maintain MS Win Server 2003 Environment</td>
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<td>ITMC 1442 Implementing a MS Win Network Infrastructure</td>
<td>ITMT 1450 Implement, Manage, and Maintain MS Win Server 2003 Network Infrastructure: Network Services Infrastructure</td>
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<td>ITMC 2432 Design MS Win Networking Services Infrastructure</td>
<td>ITMT 1455 Plan, Implement, and Maintain MS Server 2003 Network Infrastructure</td>
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<td>ITMT 2430 Design MS Win Server 2003 Active Directory and Infrastructure Services Infrastructure</td>
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<td>ITMC 2433 Designing a Secure MS Win Network</td>
<td>ITMT 2440 Designing Security for MS Win Network</td>
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<td>ITSE 1373 Game Scripting</td>
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<td>PHRA 1200 Pharmacy Third Party Payment</td>
<td>PHRA 1240 Pharmacy Third Party Payment</td>
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<td>PHRA 1271 Law and Ethics</td>
<td>PHRA 1207 Ethics and Texas Pharmacy Law</td>
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<td>HPRS 2321 Medical Law and Ethics for Health Professionals</td>
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<td>PTHA 2217 Issues in Health Care</td>
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<td>RNSG 1170 Nursing Skills III</td>
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<td>RNSG 1443 Complex Concepts of Adult Health</td>
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<td>RNSG 2331 Advanced Concepts of Adult Health</td>
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<td>RSPT 2239 Advanced Cardiac Life Support</td>
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<td>RSPT 2272 Nursing Review</td>
<td>RNSG 2230 Prof Nursing Review and Licensure Preparation</td>
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<td>VNSG 1510 Nursing in Health and Illness III</td>
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<td>VTHT 1217 Veterinary Office Management</td>
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ACCOUNTING
The accounting associate of applied science degree is designed to prepare students for occupations in the accounting profession. Job responsibilities depend on the area of specialization: public accounting; managerial accounting; or governmental accounting. Accountants help individuals and businesses manage their money by setting up and maintaining accounting systems, preparing budgets, studying company operations, performing audits, and preparing government forms. They help management plan and control company activities.

Accounting graduates have a wide variety of job opportunities available to them in industry, in governmental agencies, or in the public accounting sector. Beginning accountants usually start as ledger accountants, internal auditors, or as trainees for technical accounting positions.

The associate of applied science degree is awarded for successful completion of at least 61 credit hours as outlined. Students desiring a less comprehensive program should consider one of the Accounting Certificate programs also listed below.

Qualifying Educational Credit for CPA Examination: The Texas State Board of Public Accountancy (TSBPA) awarded North Harris Montgomery Community College District (NHMCCD) the designation to offer “Qualifying Educational Credit for the CPA Examination.” Ten of the NHMCCD accounting courses meet the TSBPA’s definition of upper-division accounting courses required to take the CPA exam. This designation allows individuals who have already earned a baccalaureate or higher degree from a recognized educational institution to gain the thirty (30) advanced accounting hours required to qualify for the CPA exam. The individual must earn the “certificate in accounting” designation and take no less than 24 semester hours of accounting from North Harris Montgomery Community College District toward meeting the 30 semester hours. Contact the accounting department of any NHMCCD college for specific information, advising, and recommended sequencing of courses.

The general education core courses and several individual accounting courses will transfer to a variety of universities. Contact the counselor or adviser at any college for specific information and to obtain the recommended sequencing of courses. The sequence of courses can also be found at: www.nhmccd.edu/catalog/

ACCOUNTING CERTIFICATE
(certificate offered at Cy-Fair College, Montgomery College, North Harris College and Tomball College)

FIRST YEAR
First Semester  Credit
ACCT 2401 Principles of Accounting I  4
ACNT 1331 Fed. Income Tax: Individual  3
ITSC 1401 Introduction to Computers  4
SEMESTER TOTAL  11

Second Semester  Credit
ACCT 2402 Principles of Accounting II  4
ACNT 2303 Intermediate Accounting I  3
Elective¹  Department Approved  3-4
SEMESTER TOTAL  10-11

Third Semester  Credit
ACNT 2304 Intermediate Accounting II  3
ACNT 2309 Cost Accounting  3
ACNT² 2331 Internal Control and Auditing  3
SEMESTER TOTAL  9

TOTAL Credit Hours for Accounting Certificate  30-31

¹ Electives to be selected from ACNT 1193, 1340, 1347, 1391, 1393, 2330, 2332, 2333, 2380, 2381; BUSI 1301, 2301, 2304; ITSW 1404, 1407. Other electives may be chosen with Accounting department approval.

² Capstone course
PROFESSIONAL BOOKKEEPER
CERTIFICATE
(certificate offered at Cy-Fair College, Kingwood College, North Harris College, Montgomery College, and Tomball College)

FIRST YEAR
First Semester
ITSC 1401 Introduction to Computers 4
ACNT 1303 Introduction to Accounting I 3
BUSI 1301 Business Principles 3
SEMESTER TOTAL 10

Second Semester
ACCT 2401 Principles of Accounting I 4
ACNT 1311 Intro. to Computerized Accounting 3
ITSC 1404 Introduction to Spreadsheets 4
SEMESTER TOTAL 11

Third Semester
ACNT 1382 Cooperative Education-Accounting 3
SEMESTER TOTAL 3

TOTAL Credit Hours for Professional Bookkeeper Certificate 24

SECOND YEAR
First Semester
ACNT 2303 Intermediate Accounting I 3
ACNT 2309 Cost Accounting 3
ECON 2302 Microeconomics OR 3
ECON 2301 Macroeconomics 3
MATH 1314 College Algebra 3
SPCH 1315 Public Speaking OR 3
SPCH 1321 Business Speech 3
SEMESTER TOTAL 15

Second Semester
ACNT 2304 Intermediate Accounting II 3
ACNT 2331 Internal Control & Auditing 3
Elective¹ Humanities/Fine Arts 3
Elective² Department approved 3-4
Elective Outside Area of Specialization 3
SEMESTER TOTAL 15-16

TOTAL Credit Hours for AAS Degree 61-62

¹ Electives to be selected from ACNT 1193, 1340, 1391, 1393, 2330, 2332, 2333, 2380, 2381; HRPO 2301; BMGT 1331; BUSI 1307, 2304; ITSC 1404, 1407. Other electives may be chosen with Accounting department approval.
² Capstone course
³ Select course to meet multicultural requirement

ACCOUNTING
Associate of applied science degree
(degree offered at Cy-Fair College, Montgomery College, North Harris College and Tomball College)

FIRST YEAR
First Semester
ACCT 2401 Principles of Accounting I 4
ACNT 1331 Federal Income Tax: Individual 3
HRPO 1311 Human Relations OR 3
PSYC 2301 General Psychology 3
ITSC 1401 Introduction to Computers 4
KINE 1401 Physical Activity 1
SEMESTER TOTAL 15

Second Semester
ACCT 2402 Principles of Accounting II 4
ACNT 1347 Federal Income Tax for Partnerships & Corp. 3
BMGT 1303 Principles of Management 3
BUSI 2301 Business Law I 3
ENGL 1301 Composition & Rhetoric I 3
SEMESTER TOTAL 16

SECOND YEAR
First Semester
Credit
ACCT 2303 Intermediate Accounting I 3
ACNT 2309 Cost Accounting 3
ECON 2302 Microeconomics OR 3
ECON 2301 Macroeconomics 3
MATH 1314 College Algebra 3
SPCH 1315 Public Speaking OR 3
SPCH 1321 Business Speech 3
SEMESTER TOTAL 15

Second Semester
Credit
ACNT 2304 Intermediate Accounting II 3
ACNT 2331 Internal Control & Auditing 3
Elective¹ Humanities/Fine Arts 3
Elective² Department approved 3-4
Elective Outside Area of Specialization 3
SEMESTER TOTAL 15-16

TOTAL Credit Hours for AAS Degree 61-62

¹ Electives to be selected from ACNT 1193, 1340, 1391, 1393, 2330, 2332, 2333, 2380, 2381; HRPO 2301; BMGT 1331; BUSI 1307, 2304; ITSC 1404, 1407. Other electives may be chosen with Accounting department approval.
² Capstone course
³ Select course to meet multicultural requirement

AUTOMOTIVE TECHNOLOGY
The automotive technology associate of applied science degree, is designed to provide the broad academic and technical education and training necessary to function in today’s automotive service industry. The student will study the mechanical, electrical/electronic and environmental systems of the contemporary automobile and light truck. The graduate will be well prepared for entry-level employment as a career technician within dealership service departments or other major retail or service firms. The academic requirements of the program provide a foundation for continued studies should the student decide to further pursue his or her education or training.

The automotive technology program has been reviewed by the National Automotive Technician Education Foundation and has full Automotive Service Excellence (ASE) certification. The student is prepared and is encouraged to take the appropriate ASE certification exams.
The Body and Chassis Technician Certificate program prepares the individual for basic, entry-level, employment in the automotive service industry. The essentials of the mechanical, electrical and environmental systems of the contemporary automobile and light truck are major components of the program. Courses completed in this certificate program may be applied toward the associate degree in Automotive Technology.

The Tune-Up and Driveability Certificate program prepares the individual for basic, entry-level, employment in the automotive service industry. The program provides course work specializing in the mechanical and electrical systems of the contemporary automobile and light truck that affect optimum operation and driveability.

The general education core will transfer to a variety of colleges and universities. Contact a counselor, or faculty member at any of the colleges for specific information and to obtain the recommended sequencing of courses. The sequence of courses can also be found at: www.nhmccd.edu/catalog/

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**BASIC AUTOMOTIVE SERVICE TECHNOLOGY CERTIFICATE**
(certificate offered at North Harris College)

**FIRST YEAR**

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<tr>
<td>AUMT 1407 Automotive Electrical Systems</td>
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<tr>
<td>AUMT 1410 Automotive Brake Systems</td>
<td>4</td>
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<tr>
<td>AUMT 1416 Suspension and Steering</td>
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<td>AUMT 2380 Cooperative Education</td>
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<td>AUMT 2328 Automotive Service</td>
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**TOTAL Credit Hours for Basic Automotive Service Technology Certificate** 19

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**BODY AND CHASSIS TECHNICIAN SPECIALIZATION CERTIFICATE**
(certificate offered at North Harris College)

**FIRST YEAR**

<table>
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<tr>
<td>AUMT 1405 Intro to Automotive Technology</td>
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<td>AUMT 1407 Automotive Electrical Systems</td>
<td>4</td>
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<td>AUMT 1410 Automotive Brake Systems</td>
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<tr>
<td>AUMT 2425 Auto Transmission &amp; Transaxles</td>
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<td><strong>SEMESTER TOTAL</strong></td>
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<table>
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<tbody>
<tr>
<td>AUMT 1416 Suspension and Steering</td>
<td>4</td>
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<tr>
<td>AUMT 1445 Auto Heating &amp; Air Conditioning</td>
<td>4</td>
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<tr>
<td>AUMT 2437 Automotive Electronics</td>
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<td><strong>SEMESTER TOTAL</strong></td>
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**TOTAL Credit Hours for Body and Chassis Certificate** 32

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**TUNE-UP AND DRIVEABILITY TECHNICIAN SPECIALIZATION CERTIFICATE**
(certificate offered at North Harris College)

**FIRST YEAR**

<table>
<thead>
<tr>
<th>First Semester</th>
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<tr>
<td>AUMT 1405 Intro to Automotive Technology</td>
<td>4</td>
</tr>
<tr>
<td>AUMT 1407 Automotive Electrical Systems</td>
<td>4</td>
</tr>
<tr>
<td><strong>SEMESTER TOTAL</strong></td>
<td><strong>8</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Credit</th>
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<tbody>
<tr>
<td>AUMT 2417 Engine Performance Analysis I</td>
<td>4</td>
</tr>
<tr>
<td>AUMT 2425 Auto Transmissions &amp; Transaxles</td>
<td>4</td>
</tr>
<tr>
<td>AUMT 1419 Automotive Engine Repair</td>
<td>4</td>
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<tr>
<td><strong>SEMESTER TOTAL</strong></td>
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<th>Third Semester</th>
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<tbody>
<tr>
<td>AUMT 2434 Engine Performance Analysis II</td>
<td>4</td>
</tr>
<tr>
<td>AUMT 2437 Automotive Electronics</td>
<td>4</td>
</tr>
<tr>
<td>AUMT Elective</td>
<td>4</td>
</tr>
<tr>
<td><strong>SEMESTER TOTAL</strong></td>
<td><strong>12</strong></td>
</tr>
</tbody>
</table>

**TOTAL Credit Hours for Tune-Up and Driveability Technician Certificate** 32

---

1 To be selected from the remaining AUMT courses for which prerequisites have been met.
DEGREES AND CERTIFICATES

Note: The required Capstone experience will be completed by taking a departmental exam. It is strongly suggested that the following A.S.E. exams be taken by the student: the Engine Performance exam and the Electrical exam.

AUTOMOTIVE TECHNOLOGY
Associate of applied science degree, Tech Prep
(degree offered at North Harris College)

FIRST YEAR
First Semester Credit
AUMT 1405 Intro. to Automotive Tech. 4
AUMT 1407 Automotive Electrical Systems 4
ENGL 1301 Composition and Rhetoric I 3
PSYC 1301 Human Relations 3
SEMMTER TOTAL 14

Second Semester Credit
AUMT 1419 Automotive Engine Repair 4
AUMT 2417 Engine Performance Analysis I 4
SPCH 1311 Intro to Speech Communications 3
TECM* 1303 Technical Mathematics 3
SEMMTER TOTAL 14

Third Semester (Summer) Credit
AUMT 2434 Engine Performance Analysis II 4
HUMA1 1301 Introduction to the Humanities 3
ITSC 1401 Introduction to Computers 4
SEMMTER TOTAL 11

SECOND YEAR
First Semester Credit
AUMT 1410 Automotive Brake Systems 4
AUMT 2380 Cooperative Education OR 3
AUMT 2328 Automotive Service 3
CHEM 1405 Introductory Chemistry 4
SEMMTER TOTAL 15

Second Semester Credit
AUMT 2 Elective 4
AUMT 1445 Auto Heating & Air Conditioning 4
AUMT 2381 Cooperative Education 3
AUMT 2437 Automotive Electronics 4
SEMMTER TOTAL 15

TOTAL Credit Hours for Automotive Technology Specialization 69

1 Meets Multicultural Requirement
2 Automotive electives to be selected from AUMT 1416, 2413, 2425

The biotechnology associate of applied science degree program is designed to prepare graduates for employment as biotechnicians. Skills in cell culture, laboratory methods, molecular biology, and laboratory instrumentation are included in the courses that make up the specialized portion of this degree plan. Additionally, there is a sequence of basic sciences that is included in the plan – biology, chemistry, and microbiology. The internship experience occurs in the final semester of the program and students will be placed in area biotechnology companies or medical center research labs to complete their training. The biotechnology associate of applied science degree is awarded for successful completion of the 71 semester credit hours required in the degree plan.

The biotechnology program also offers qualified students the opportunity to take individual courses within the biotechnology core. Students with the appropriate level of prior training may elect, for example, to take only the Molecular Biology Techniques – BITC 2441 course to gain skills in that area.

Graduates of the biotechnology program are prepared to enter the rapidly growing field of biotechnology. Opportunities exist in the pharmaceutical industry, medical research industry, and agricultural industry, among others, for graduates of the program.

Alternatively, graduates may choose to transfer to a neighboring university to participate in a “2+2” program that would result in earning a bachelor’s degree in biotechnology. Currently, such a program exists with the University of Houston–Downtown and more articulations are being developed with the medical center area and other universities.

The general education courses in the biotechnology degree plan will transfer to a variety of colleges and universities. For more specific information and to obtain the recommended sequencing of courses, contact the Biotechnology Institute, 936.273.7060. The sequence of courses can be found at: www.nhmccd.edu/catalog/
In 2001, the Montgomery College Biotechnology Institute was created to establish a point of contact for all biotechnology training inquiries. The MCBI aims to prepare students for all levels of entry into the biotechnology industry and to meet the industry’s workforce and continuing education needs. The Institute functions to identify and meet biotechnology industry training needs, recruit high school students, create shorter certificate programs and partner with The University Center to articulate with four-year programs. For more information about the MCBI, please e-mail mcbiotech@nhmccd.edu, call 936.273.7060, or view www.montgomery-college.com/biotech/index.htm

**BIOTECHNOLOGY**

*Associate of applied science degree*

(degree offered at Montgomery College)

**FIRST YEAR**

First Semester  
BIOL 1406 Biology I 4  
BITC 1211 Intro. to Biotechnology 2  
CHEM 1405 Introductory Chemistry OR 4  
CHEM 1411 General Chemistry I 4  
ENGL 1301 Composition & Rhetoric I 3  
MATH 1314 College Algebra 3  
**SEMMESTER TOTAL 16**

Second Semester  
BIOL 2421 General Microbiology OR 4  
BIOL 2420 Medical Microbiology 4  
BITC 1402 Biotechnology Lab Methods & Techniques 4  
CHEM 1419 Intro Organic/Biochemistry OR 4  
CHEM 1412 General Chemistry II 4  
ITSC 1401 Introduction to Computers OR 4  
COSC 1401 Microcomputer Applications 4  
ENGL 1302 Composition & Rhetoric II 3  
**SEMMESTER TOTAL 19**

**SECOND YEAR**

First Semester  
BIOL 1407 Biology II 4  
BIOL 2416 Genetics 4  
BITC 2411 Biotechnology Lab Instrumentation 4  
PHIL 2306 Introduction to Ethics 3  
**SEMMESTER TOTAL 15**

**BIOTECHNOLOGY**

*ADVANCED TECHNICAL CERTIFICATE*

(certificate offered at Montgomery College)

**FIRST YEAR**

First Semester  
BITC 1402 Biotechnology Lab Methods & Techniques 4  
BITC 2411 Biotechnology Lab Instrumentation 4  
**SEMMESTER TOTAL 12**

Second Semester  
BITC 2431 Cell Culture Techniques 4  
BITC 2441 Molecular Biology Techniques 4  
**SEMMESTER TOTAL 8**

Third Semester  
BITC 2486 Internship 4  
**SEMMESTER TOTAL 4**

**TOTAL Credit Hours for Biotechnology Advanced Technical Certificate 24**

---

1. Can take Summer of First Year  
2. Meets multicultural requirement  
3. Capstone course
CHILD DEVELOPMENT  
AND FAMILY STUDIES

The child development and family studies program prepares individuals for employment as program directors/administrators of child care centers and/or early childhood programs, preschool teachers, public school aides (lower pre-K, kindergarten, first and second grades usually), and teachers in Headstart programs. The State of Texas, Family Protective Services requires criminal background checks for employment. Candidates with concerns about their background in this regard should choose an alternate career option. Certificates are available for individuals seeking preparation as preschool teachers and teaching assistants in child care centers, child care providers (in the home), and potential child care center directors. This program provides pre-service and in-service training for employees of licensed child care centers through contract courses, workshops and short-term CEU classes. These classes meet the state requirements for required clock hours for all employees of licensed centers.

The A.A.S. Child Care and Development degree includes education in the knowledge, skills and abilities used with the early childhood age span. The practical application requirement is fulfilled through two capstone courses (CDEC 1364 Practicum-Child Development and CDEC 1366 Practicum-Early Childhood) One of the courses must be completed under the guidance of master trainers at the NHC Child Development Lab School and the other in an approved early childhood or child development setting in the community.

The A.A.S. Montessori Infant and Toddler Specialization degree covers conception to age three and the competencies necessary to be recommended for certification by the American Montessori Society. The practical application requirement is fulfilled by two capstone courses, CDEC 1364 Practicum-Child Development and CDEC 1484 Cooperative Education in Montessori. One of these courses must be completed under the guidance of a certified Montessori teacher at NHC Lab School or at an approved Montessori School in the community.

The Montessori Infant and Toddler Advanced Technical Certificate is available for the student who enters the program with a bachelors degree or advanced degree. This certificate stands alone to offer the option of achieving the advanced skills necessary for the American Montessori Society certification as an infant and toddler specialist without completing the AAS Montessori infant and toddler degree program.

The CDA (Child Development Associate) is awarded by the Council for Early Childhood Professional Recognition. It is available with a specific setting and age level endorsement: center-based preschool (3 to 5 years old), center-based infant toddler (birth to age 3) and family daycare (birth through age 5). The CDA preparation certificate allows the student to prepare for the credentialing process and is available with two options: preschool center based or infant and toddler.

Students interested in pursuing the teaching profession through transfer to a university and certification by the State Board for Educator Certification, should consider the AAT Associate of Arts in Teaching. (see page 76-78)

The general education core courses and several child care courses will transfer to a variety of universities. Students may have earned some college credit while in high school through articulation if they enroll within one year of graduation. Contact a program administrator, a counselor, or a child development faculty member at North Harris College for specific information and to obtain the recommended sequencing of courses. The sequence of courses can also be found at: www.nhmccd.edu/catalog/. 
### DEGREES AND CERTIFICATES

#### MONTESSORI INFANT AND TODDLER ADVANCED TECHNICAL CERTIFICATE
(certificate offered at North Harris College)
Prerequisite: Bachelors or advanced degree

**FIRST YEAR**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Credit</th>
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<tbody>
<tr>
<td>CDEC 1421 The Infant and Toddler</td>
<td>4</td>
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<tr>
<td>CDEC 1392 Special Topics - Montessori History &amp; Philosophy</td>
<td>3</td>
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<tr>
<td>CDEC 1192 Special Topics - Montessori Overview</td>
<td>1</td>
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<tr>
<td>TECA 1311 Educating Young Children</td>
<td>3</td>
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<tr>
<td><strong>SEMESTER TOTAL</strong></td>
<td><strong>11</strong></td>
</tr>
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<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>CDEC 1492 Special Topics - Montessori Theory &amp; Practice</td>
<td>4</td>
</tr>
<tr>
<td>CDEC 1364 Practicum - Child Development</td>
<td>3</td>
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<tr>
<td><strong>SEMESTER TOTAL</strong></td>
<td><strong>7</strong></td>
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</table>

<table>
<thead>
<tr>
<th>Third Semester</th>
<th>Credit</th>
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</thead>
<tbody>
<tr>
<td>CDEC 1484 Cooperative Education - Child Development</td>
<td>4</td>
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<tr>
<td><strong>SEMESTER TOTAL</strong></td>
<td><strong>4</strong></td>
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</table>

**TOTAL Credit Hours for Montessori Infant and Toddler Certificate** 22

1 Capstone course

#### CDA PREPARATION CERTIFICATE with Specializations
(certificate offered at North Harris College)

**Infant and Toddler Specialization**

**FIRST YEAR**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Credit</th>
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</thead>
<tbody>
<tr>
<td>CDEC 1419 Child Guidance</td>
<td>4</td>
</tr>
<tr>
<td>CDEC 1413 Curriculum Resources</td>
<td>4</td>
</tr>
<tr>
<td><strong>SEMESTER TOTAL</strong></td>
<td><strong>8</strong></td>
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</table>

<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>CDEC 1421 The Infant and Toddler</td>
<td>4</td>
</tr>
<tr>
<td>CDEC 1341 CDA Preparation for Assessment</td>
<td>3</td>
</tr>
<tr>
<td><strong>SEMESTER TOTAL</strong></td>
<td><strong>7</strong></td>
</tr>
</tbody>
</table>

**TOTAL Credit Hours for Infant and Toddler Certification Specialization** 15

1 Capstone course

**CHILD CARE DIRECTOR CERTIFICATE**
(certificate offered at North Harris College)

**FIRST YEAR**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>TECA 1311 Educating Young Children</td>
<td>3</td>
</tr>
<tr>
<td>CDEC 1413 Curriculum Resources</td>
<td>4</td>
</tr>
<tr>
<td>CDEC 1419 Child Guidance</td>
<td>4</td>
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<tr>
<td><strong>SEMESTER TOTAL</strong></td>
<td><strong>11</strong></td>
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</table>

<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>CDEC 2326 Administration of Programs for Children I</td>
<td>3</td>
</tr>
<tr>
<td>CDEC 2328 Admin. of Programs for Children II</td>
<td>3</td>
</tr>
<tr>
<td>CDEC 2436 Admin. of Programs for Children III</td>
<td>4</td>
</tr>
<tr>
<td><strong>SEMESTER TOTAL</strong></td>
<td><strong>10</strong></td>
</tr>
</tbody>
</table>

**TOTAL Credit Hours for Child Care Director Certificate** 21

1 Capstone course

#### CDA PREPARATION CERTIFICATE with Specializations
(certificate offered at North Harris College)

**Preschool Center-Based Specialization**

**FIRST YEAR**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>CDEC 1419 Child Guidance</td>
<td>4</td>
</tr>
<tr>
<td>CDEC 1413 Curriculum Resources</td>
<td>4</td>
</tr>
<tr>
<td><strong>SEMESTER TOTAL</strong></td>
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</table>

<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>CDEC 1458 Creative Arts for Early Childhood</td>
<td>4</td>
</tr>
<tr>
<td>CDEC 1341 CDA Preparation for Assessment</td>
<td>3</td>
</tr>
<tr>
<td><strong>SEMESTER TOTAL</strong></td>
<td><strong>7</strong></td>
</tr>
</tbody>
</table>

**TOTAL Credit Hours for Preschool Center-Based Certification Specialization** 15

1 Capstone course

#### INSTRUCTIONAL PARAPROFESSIONAL CERTIFICATE
(certificate offered at North Harris College)

**FIRST YEAR**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Credit</th>
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</thead>
<tbody>
<tr>
<td>CDEC 1419 Child Guidance</td>
<td>4</td>
</tr>
<tr>
<td>CDEC 1456 Emergent Literacy</td>
<td>4</td>
</tr>
<tr>
<td><strong>SEMESTER TOTAL</strong></td>
<td><strong>8</strong></td>
</tr>
</tbody>
</table>
Second Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit</th>
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</thead>
<tbody>
<tr>
<td>CDEC 2407 Math and Science for Early Childhood</td>
<td>4</td>
</tr>
<tr>
<td>CDEC 1459 Children with Special Needs</td>
<td>4</td>
</tr>
</tbody>
</table>

TOTAL Credit Hours for Instructional Paraprofessional Certification Specialization 16

Child Care Specialization

_Associate of applied science degree, Tech Prep with Specializations_ (degree offered at North Harris College)

**FIRST YEAR**

First Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit</th>
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</thead>
<tbody>
<tr>
<td>ENGL 1301 Composition and Rhetoric I</td>
<td>3</td>
</tr>
<tr>
<td>ITSC 1401 Introduction to Computers</td>
<td>4</td>
</tr>
<tr>
<td>PSYC 2301 General Psychology</td>
<td>3</td>
</tr>
<tr>
<td>TECA 1303 Families, School, &amp; Community</td>
<td>3</td>
</tr>
<tr>
<td>TECA 1311 Educating Young Children</td>
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SEMESTER TOTAL 16

Second Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit</th>
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<tbody>
<tr>
<td>CDEC 1364 Practicum-Child Development</td>
<td>3</td>
</tr>
<tr>
<td>CDEC 1419 Child Guidance</td>
<td>4</td>
</tr>
<tr>
<td>Elective¹ Humanities/Fine Arts</td>
<td>3</td>
</tr>
<tr>
<td>TECA 1318 Wellness of the Young Child</td>
<td>3</td>
</tr>
<tr>
<td>TECA 1354 Child Growth &amp; Development</td>
<td>3</td>
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SEMESTER TOTAL 16

**SECOND YEAR**

First Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit</th>
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<tbody>
<tr>
<td>CDEC 1413 Curriculum Resources</td>
<td>4</td>
</tr>
<tr>
<td>CDEC 1456 Emergent Lit. for Early Childhood</td>
<td>4</td>
</tr>
<tr>
<td>CDEC 1459 Children with Special Needs</td>
<td>4</td>
</tr>
<tr>
<td>CDEC 2326 Administration of Programs for Children I</td>
<td>3</td>
</tr>
<tr>
<td>KINE Physical Activity</td>
<td>1</td>
</tr>
<tr>
<td>SPCH Elective</td>
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SEMESTER TOTAL 19

Second Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit</th>
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<tbody>
<tr>
<td>CDEC² 1366 Practicum-Early Childhood</td>
<td>3</td>
</tr>
<tr>
<td>CDEC 1421 The Infant and Toddler</td>
<td>4</td>
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<tr>
<td>CDEC 1458 Creative Arts for Early Childhood</td>
<td>4</td>
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<tr>
<td>CDEC 2328 Admin. of Programs for Children II</td>
<td>3</td>
</tr>
<tr>
<td>Elective² Math/Natural Sciences</td>
<td>3-4</td>
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<tr>
<td>TECA 1354 Child Growth &amp; Development</td>
<td>3</td>
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</tbody>
</table>

SEMESTER TOTAL 17-18

TOTAL Credit Hours for Child Care Specialization 68-69

¹ Select course to meet multicultural course requirement
² Capstone course
* Students must meet Math competency

Montessori Infant and Toddler Specialization

_(degree offered at North Harris College)_

**FIRST YEAR**

First Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit</th>
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<tbody>
<tr>
<td>ENGL 1301 Composition and Rhetoric I</td>
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<tr>
<td>ITSC 1401 Introduction to Computers</td>
<td>4</td>
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<tr>
<td>PSYC 2301 General Psychology</td>
<td>3</td>
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<tr>
<td>TECA 1303 Families, School, &amp; Community</td>
<td>3</td>
</tr>
<tr>
<td>TECA 1311 Educating Young Children</td>
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SEMESTER TOTAL 16

Second Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit</th>
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</thead>
<tbody>
<tr>
<td>CDEC 1392 Special Topics - Montessori History &amp; Philosophy</td>
<td>3</td>
</tr>
<tr>
<td>CDEC 1421 The Infant and Toddler</td>
<td>4</td>
</tr>
<tr>
<td>CDEC 2326 Administration of Programs for Children I</td>
<td>3</td>
</tr>
<tr>
<td>Elective¹ Humanities/Fine Arts</td>
<td>3</td>
</tr>
<tr>
<td>TECA 1318 Wellness of the Young Child</td>
<td>3</td>
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SEMESTER TOTAL 16

**SECOND YEAR**

First Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>CDEC 1364 Practicum - Child Development</td>
<td>3</td>
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<tr>
<td>CDEC 1419 Child Guidance</td>
<td>4</td>
</tr>
<tr>
<td>CDEC 1492 Special Topics - Montessori Theory &amp; Practice</td>
<td>4</td>
</tr>
<tr>
<td>KINE Physical Activity</td>
<td>1</td>
</tr>
<tr>
<td>SPCH Elective</td>
<td>3</td>
</tr>
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</table>

SEMESTER TOTAL 15

Second Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>CDEC 1459 Children with Special Needs</td>
<td>4</td>
</tr>
<tr>
<td>CDEC² 1484 Cooperative Education</td>
<td>4</td>
</tr>
<tr>
<td>CDEC 2328 Admin. of Programs for Children II</td>
<td>3</td>
</tr>
<tr>
<td>Elective² Math/Natural Sciences</td>
<td>3-4</td>
</tr>
<tr>
<td>TECA 1354 Child Growth &amp; Development</td>
<td>3</td>
</tr>
</tbody>
</table>

SEMESTER TOTAL 17-18

TOTAL Credit Hours for Montessori Infant and Toddler Specialization 64-65

¹ Select course to meet multicultural course requirement
² Capstone course
* Students must meet Math competency
DEGREES AND CERTIFICATES

COMPUTER GRAPHIC ARTS TECHNOLOGY
(see Visual Communication)

COMPUTER INFORMATION TECHNOLOGY

The computer information technology department offers educational programs designed to provide students with current technological skills needed for the workplace. Working closely with local business and community leaders, several certificates and degrees have been developed for many workforce needs, including advancing career or college transfer goals. The program is suitable for:

- First time computer users
- High school graduates with some computer training
- Professionals seeking cross-training or skills updating

The Information Technology Certificate is designed for those with little or minimal computer training and allows students to choose an area of concentration from the more advanced specialty certificates. The computer core courses allow students to explore technology software, hardware and telecommunications before deciding on an area of specialization.

The specialty certificates designed for those who want advanced skills include:

- Personal Computer Desktop Support
- Microsoft Networking
- Programming Specialist
- Cisco Internetworking
- Database Administration
- E-Business Web Developer
- Network Security
- Gaming Development and Design

In reviewing student placement, consideration is also given for significant work experience. Some of the job market titles addressed by these certificates are:

- PC Desktop Support Technician
- Network Technician
- Network Operator
- Network Administrator
- Network Engineer/Designer
- Network Security Specialist
- Programmer (Visual BASIC, C++, RPG, ACCESS database, Java, XML & C#)
- Microcomputer Specialist
- E-Commerce Application Specialist
- Internet Developer
- Database Administration

Students seeking degrees in Computer Information Technology may follow a plan that adds academic courses to the two levels of certificates. Students who have degrees or who have articulated courses from high school may receive additional training and a tech prep enhanced skills certificate in areas such as Visual Basic, C, RPG programming, and Network Security.

Students are advised to consult with the individual colleges regarding appropriate certificates and courses leading to professional certification from appropriate vendors.

The general education core courses, COSC classes, and some technical courses transfer to a variety of universities. Technical AAS degrees transfer in total to some universities. Contact the counselor or adviser at any college for specific information and to obtain the recommended sequencing of courses. The sequence of courses can also be found at: www.nhmccd.edu/catalog
INFORMATION TECHNOLOGY CERTIFICATE
(certificate offered at Cy-Fair College, Kingwood College, Montgomery College, North Harris College and Tomball College)

**FIRST YEAR**

First Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
<th>Credit</th>
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<tbody>
<tr>
<td>ITSC 1401</td>
<td>Introduction to Computers OR</td>
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</tr>
<tr>
<td>COSC 1401</td>
<td>Microcomputer Applications</td>
<td>4</td>
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<tr>
<td><strong>SEMESTER TOTAL</strong></td>
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Second Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
<th>Credit</th>
</tr>
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<tbody>
<tr>
<td>BMGT 1309</td>
<td>Information &amp; Project Management</td>
<td>3</td>
</tr>
<tr>
<td>ITSC 1405</td>
<td>Intro to PC Operating Systems</td>
<td>4</td>
</tr>
<tr>
<td>ITNW(^1) 1425</td>
<td>Fundamentals of Networking Technologies</td>
<td>4</td>
</tr>
<tr>
<td>POFT 1301</td>
<td>Business English</td>
<td>3</td>
</tr>
<tr>
<td><strong>SEMESTER TOTAL</strong></td>
<td></td>
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</tbody>
</table>

**TOTAL Credit Hours for Information Technology Certificate** 18

\(^1\) Capstone course

MICROSOFT OFFICE SPECIALIST CERTIFICATE
(certificate offered at Cy-Fair College, Kingwood College, Montgomery College, North Harris College and Tomball College)

**FIRST YEAR**

First Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>ITSC 1401</td>
<td>Introduction to Computers OR</td>
<td>4</td>
</tr>
<tr>
<td>COSC 1401</td>
<td>Microcomputer Applications</td>
<td>4</td>
</tr>
<tr>
<td>ITSC 1405</td>
<td>Intro to PC Operating Systems</td>
<td>4</td>
</tr>
<tr>
<td>POFT 1301</td>
<td>Business English</td>
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<tr>
<td><strong>SEMESTER TOTAL</strong></td>
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Second Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
<th>Credit</th>
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</thead>
<tbody>
<tr>
<td>ITSC(^1) 2331</td>
<td>Integrated Software Appl. III OR</td>
<td>3</td>
</tr>
<tr>
<td>ITSC(^1) 2380</td>
<td>Cooperative Education</td>
<td>4</td>
</tr>
<tr>
<td>ITSC 1404</td>
<td>Introduction to Spreadsheets</td>
<td>4</td>
</tr>
<tr>
<td>ITSC 1407</td>
<td>Introduction to Databases</td>
<td>4</td>
</tr>
<tr>
<td><strong>SEMESTER TOTAL</strong></td>
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</tbody>
</table>

**TOTAL Credit Hours for Microsoft Office Specialist Certificate** 21

\(^1\) Capstone course

INTEGRATED TECHNOLOGY BASIC CERTIFICATE
(certificate offered at North Harris College)

**Prerequisite Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>ITSC 1401</td>
<td>Introduction to Computers OR</td>
<td>4</td>
</tr>
<tr>
<td>COSC 1401</td>
<td>Microcomputer Applications</td>
<td>4</td>
</tr>
<tr>
<td><strong>SEMESTER TOTAL</strong></td>
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</table>

**FIRST YEAR**

First Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
<th>Credit</th>
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</thead>
<tbody>
<tr>
<td>ITSC 1405</td>
<td>Intro to PC Operating Systems</td>
<td>4</td>
</tr>
<tr>
<td>ITSC 1425</td>
<td>Personal Computer Hardware</td>
<td>4</td>
</tr>
<tr>
<td>ENGL 1301</td>
<td>Composition &amp; Rhetoric I</td>
<td>3</td>
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<tr>
<td><strong>SEMESTER TOTAL</strong></td>
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Second Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>ITCC 1402</td>
<td>CCNA 1: Networking Basics</td>
<td>4</td>
</tr>
<tr>
<td>ITCC 1406</td>
<td>CCNA 2: Router and Routing Basics</td>
<td>4</td>
</tr>
<tr>
<td>SPCH 1321</td>
<td>Business Speech</td>
<td>3</td>
</tr>
<tr>
<td>CPMT 2302</td>
<td>Home Technology Integration</td>
<td>3</td>
</tr>
<tr>
<td><strong>SEMESTER TOTAL</strong></td>
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</tbody>
</table>

**TOTAL Credit Hours for Integrated Technology Basic Certificate** 29

INTEGRATED TECHNOLOGY ADVANCED CERTIFICATE
(certificate offered at North Harris College)

**Prerequisite Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>ITSC 1401</td>
<td>Introduction to Computers OR</td>
<td>4</td>
</tr>
<tr>
<td>COSC 1401</td>
<td>Microcomputer Applications</td>
<td>4</td>
</tr>
<tr>
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**FIRST YEAR**

First Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>ITSC 1405</td>
<td>Intro to PC Operating Systems</td>
<td>4</td>
</tr>
<tr>
<td>ITSC 1425</td>
<td>Personal Computer Hardware</td>
<td>4</td>
</tr>
<tr>
<td>ENGL 1301</td>
<td>Composition &amp; Rhetoric I</td>
<td>3</td>
</tr>
<tr>
<td><strong>SEMESTER TOTAL</strong></td>
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<td><strong>11</strong></td>
</tr>
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</table>

Second Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>ITCC 1402</td>
<td>CCNA 1: Networking Basics</td>
<td>4</td>
</tr>
<tr>
<td>ITCC 1406</td>
<td>CCNA 2: Router and Routing Basics</td>
<td>4</td>
</tr>
<tr>
<td>SPCH 1321</td>
<td>Business Speech</td>
<td>3</td>
</tr>
<tr>
<td>CPMT 2302</td>
<td>Home Technology Integration</td>
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</tr>
<tr>
<td><strong>SEMESTER TOTAL</strong></td>
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First Summer Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>ITCC 1442</td>
<td>CCNA 3: Switching Basic and Intermediate Routing</td>
<td>4</td>
</tr>
<tr>
<td>ITCC 1446</td>
<td>CCNA 4: WAN Technologies</td>
<td>4</td>
</tr>
<tr>
<td>MATH 1314</td>
<td>College Algebra</td>
<td>3</td>
</tr>
<tr>
<td><strong>SEMESTER TOTAL</strong></td>
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</tbody>
</table>

**TOTAL Credit Hours for Integrated Technology Advanced Certificate** 30
## DEGREES AND CERTIFICATES

### SECOND YEAR

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>ITMT 1400</td>
<td>4</td>
</tr>
<tr>
<td>ITMT 1440</td>
<td>4</td>
</tr>
<tr>
<td>Elective¹</td>
<td>4</td>
</tr>
<tr>
<td>ITSY 1442</td>
<td>4</td>
</tr>
<tr>
<td>ITSC 1407</td>
<td>4</td>
</tr>
</tbody>
</table>

**SEMIESTER TOTAL** 16

**TOTAL Credit Hours for Integrated Technology**

Advanced Certificate 56

¹ Choose from ITSE 1445, ITNW 2452, ITSY 2400, ITSY 2401, EECT 1371, EECT 1307, ITMT 1450, ITMT 2400.

---

### INTEGRATED TECHNOLOGY

**Associate of applied science degree**

(degree offered at North Harris College)

#### Prerequisite Semester

<table>
<thead>
<tr>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>ITSC 1401 Introduction to Computers OR COSC 1401 Microcomputer Applications</td>
</tr>
</tbody>
</table>

**SEMIESTER TOTAL** 4

### FIRST YEAR

#### First Semester

<table>
<thead>
<tr>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>ITSC 1405 Intro to PC Operating Systems</td>
</tr>
<tr>
<td>ITSC 1425 Personal Computer Hardware</td>
</tr>
<tr>
<td>ENGL 1301 Composition &amp; Rhetoric I</td>
</tr>
</tbody>
</table>

**SEMIESTER TOTAL** 11

#### Second Semester

<table>
<thead>
<tr>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>ITCC 1402 CCNA 1: Networking Basics</td>
</tr>
<tr>
<td>ITCC 1406 CCNA 2: Router and Routing Basics</td>
</tr>
<tr>
<td>SPCH 1321 Business Speech</td>
</tr>
<tr>
<td>CPMT 2302 Home Technology Integration</td>
</tr>
</tbody>
</table>

**SEMIESTER TOTAL** 14

#### First Summer Semester

<table>
<thead>
<tr>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>ITCC 1442 CCNA 3: Switching Basic and Intermediate Routing</td>
</tr>
<tr>
<td>ITCC 1446 CCNA 4: WAN Technologies</td>
</tr>
<tr>
<td>MATH 1314 College Algebra</td>
</tr>
</tbody>
</table>

**SEMIESTER TOTAL** 11

### SECOND YEAR

#### First Semester

<table>
<thead>
<tr>
<th>Credit</th>
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</thead>
<tbody>
<tr>
<td>ITMT 1400 Implementing &amp; Supporting MS Windows XP Professional</td>
</tr>
<tr>
<td>ITMT 1440 Managing &amp; Maintaining a MS Windows Server 2003 Environ.</td>
</tr>
<tr>
<td>Elective¹</td>
</tr>
<tr>
<td>ITSY 1442 Information Technology Security OR</td>
</tr>
<tr>
<td>ITSC 1407 UNIX Operating System I</td>
</tr>
</tbody>
</table>

**SEMIESTER TOTAL** 16

---

### COMPUTER NETWORKING SPECIALIZATION

**Associate of applied science degree, Tech Prep**

(specialization offered at Cy-Fair College, Kingwood College, Montgomery College, North Harris College and Tomball College)

#### PREREQUISITE

<table>
<thead>
<tr>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>ITSC 1401 Introduction to Computers OR COSC 1401 Microcomputer Applications OR CPMT 1403 Intro. to Computer Technology</td>
</tr>
</tbody>
</table>

**SEMIESTER TOTAL** 4

### FIRST YEAR

#### First Semester

<table>
<thead>
<tr>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>BMGT 1309 Information &amp; Project Management</td>
</tr>
<tr>
<td>Elective¹</td>
</tr>
<tr>
<td>ITSC 1405 Intro to PC Operating Systems</td>
</tr>
<tr>
<td>ITNW 1425 Fundamentals of Networking Technlngs</td>
</tr>
<tr>
<td>ENGL 1301 Composition &amp; Rhetoric I</td>
</tr>
</tbody>
</table>

**SEMIESTER TOTAL** 17

#### Second Semester

<table>
<thead>
<tr>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elective¹</td>
</tr>
<tr>
<td>Tech. Track* Technical Networking Core</td>
</tr>
<tr>
<td>Tech. Track* Technical Networking Core</td>
</tr>
<tr>
<td>KINE</td>
</tr>
<tr>
<td>POFT 1301 Business English OR</td>
</tr>
<tr>
<td>BUSI 2304 Business Communications</td>
</tr>
</tbody>
</table>

**SEMIESTER TOTAL** 15

### SECOND YEAR

#### First Semester

<table>
<thead>
<tr>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elective¹,² Math/Natural Science</td>
</tr>
<tr>
<td>ITSC 1425 Personal Computer Hardware</td>
</tr>
<tr>
<td>Tech. Track* Technical Networking</td>
</tr>
<tr>
<td>Tech. Track* Technical Networking</td>
</tr>
</tbody>
</table>

**SEMIESTER TOTAL** 15-16

¹ Choose from ITSE 1445, ITNW 2452, ITSY 2400, ITSY 2401, EECT 1371, EECT 1307, ITMT 1450, ITMT 2400.
² Capstone choose from ITSC 2381, ITSY 2443, ITSE 2433 or ITSE 2456
³ Meets multicultural requirement.
**DEGREES AND CERTIFICATES**

## Second Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit</th>
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</thead>
<tbody>
<tr>
<td>Elective&lt;sup&gt;2&lt;/sup&gt;</td>
<td>General Education 3</td>
</tr>
<tr>
<td>Elective&lt;sup&gt;3&lt;/sup&gt;</td>
<td>Technical Elective 3</td>
</tr>
<tr>
<td>Elective&lt;sup&gt;4&lt;/sup&gt;</td>
<td>Technical Elective OR</td>
</tr>
<tr>
<td>ITNW 1492</td>
<td>Special Topics in Computer Systems Networking &amp; Telecommunications 3</td>
</tr>
<tr>
<td>ITSC&lt;sup&gt;1&lt;/sup&gt; 2439</td>
<td>Personal Computer Helpdesk OR 3-4</td>
</tr>
<tr>
<td>ITSC&lt;sup&gt;1&lt;/sup&gt; 2380</td>
<td>Cooperative Education 3</td>
</tr>
<tr>
<td><strong>SEMIESTER TOTAL</strong></td>
<td>12-15</td>
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</tbody>
</table>

**TOTAL Credit Hours for Computer Networking Specialization AAS** 63-67

* All Technical Networking courses must be chosen from the same track:
  **Microsoft Track**: ITMT 1400, ITMT 1440, ITMT 1450, ITMT 2400
  **Cisco Track**: ITCC 1402, ITCC 1406, ITCC 1442, ITCC 1446

1 ITNW 1425 Fundamentals of Networking Technologies is required for Microsoft track only

---

**NETWORK ADMINISTRATOR CERTIFICATE - MCISA/CCNA**

(certificate offered at Cy-Fair College, Kingwood College, Montgomery College, North Harris College and Tomball College)

<table>
<thead>
<tr>
<th>Prerequisite Semester</th>
<th>Credit</th>
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<tbody>
<tr>
<td>ITNW&lt;sup&gt;1&lt;/sup&gt; 1425</td>
<td>Fundamentals of Networking Technologies 4</td>
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<tr>
<td>ITSC 1401</td>
<td>Introduction to Computers OR 4</td>
</tr>
<tr>
<td>COSC 1401</td>
<td>Microcomputer Applications 4</td>
</tr>
<tr>
<td><strong>SEMIESTER TOTAL</strong></td>
<td>4-8</td>
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### FIRST YEAR

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tech. Track*</td>
<td>Technical Networking (1st 8 weeks) 4</td>
</tr>
<tr>
<td>Tech. Track*</td>
<td>Technical Networking (2nd 8 weeks) 4</td>
</tr>
<tr>
<td><strong>SEMIESTER TOTAL</strong></td>
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<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Credit</th>
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</thead>
<tbody>
<tr>
<td>Tech. Track*</td>
<td>Technical Networking (1st 8 weeks) 4</td>
</tr>
<tr>
<td>Tech. Track*</td>
<td>Technical Networking (2nd 8 weeks) 4</td>
</tr>
<tr>
<td><strong>SEMIESTER TOTAL</strong></td>
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</tr>
</tbody>
</table>

| **TOTAL Credit Hours for Network Administrator MCSA/CCNA Certificate** | 20-24 |

* Note: Technical electives taken in the ITMT or ITCC category used to meet requirements in AAS cannot be used toward requirements in advanced technical certificates.

---

**NETWORK ENGINEER CERTIFICATE - MCSE/CCNP**

(certificate offered at Cy-Fair College, Kingwood College, Montgomery College, North Harris College and Tomball College)

<table>
<thead>
<tr>
<th>Prerequisite Semester</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>ITNW&lt;sup&gt;1&lt;/sup&gt; 1425</td>
<td>Fundamentals of Networking Technologies 4</td>
</tr>
<tr>
<td>ITSC 1401</td>
<td>Introduction to Computers OR 4</td>
</tr>
<tr>
<td>COSC 1401</td>
<td>Microcomputer Applications 4</td>
</tr>
<tr>
<td><strong>SEMIESTER TOTAL</strong></td>
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### FIRST YEAR

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tech. Track*</td>
<td>Technical Networking (1st 8 weeks) 4</td>
</tr>
<tr>
<td>Tech. Track*</td>
<td>Technical Networking (2nd 8 weeks) 4</td>
</tr>
<tr>
<td><strong>SEMIESTER TOTAL</strong></td>
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</table>

<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tech. Track*</td>
<td>Technical Networking (1st 8 weeks) 4</td>
</tr>
<tr>
<td>Tech. Track*</td>
<td>Technical Networking (2nd 8 weeks) 4</td>
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<tr>
<td><strong>SEMIESTER TOTAL</strong></td>
<td>8</td>
</tr>
</tbody>
</table>

| **TOTAL Credit Hours for Network Engineer MCSE/CCNP Certificate** | 40 |

* All Technical Networking courses must be chosen from the same track:
  **Microsoft Track**: ITMT 1400, ITMT 1440, ITMT 1450, ITMT 2400
  **Cisco Track**: ITCC 1402, ITCC 1406, ITCC 1442, ITCC 1446

1 ITNW 1425 Fundamentals of Networking Technologies is required for Microsoft track only

2 Select Technical Networking Elective from ITNW, ITMT ITSC, ITCC
NETWORK SECURITY ADVANCED TECHNICAL CERTIFICATE
(certificate offered at Cy-Fair College, Kingwood College, Montgomery College, North Harris College and Tomball College)

The Networking and Security Advanced Technical Certificate is considered to be a continuation of the Networking AAS Degree. Equivalent education or certifications may satisfy this prerequisite.

FIRST YEAR

First Semester
ITSC 1407 UNIX Operating System I 4

SEMESTER TOTAL 4

Second Semester
ITSY 2401 Firewalls and Network Security 4
ITSY 2400 Operating System Security 4

SEMESTER TOTAL 8

Third Semester
ITSY Elective 4
ITMT/ITSY Elective 4

SEMESTER TOTAL 8

TOTAL Credit Hours for Network Security Advanced Technical Certificate 20

GRAND TOTAL for AAS degree with Enhanced Skills Certificate 85-87

1 In the third semester choose one elective from ITSY courses, choose second elective from ITMT/ITSY courses.

PC DESKTOP SPECIALIST CERTIFICATE
(certificate offered at Cy-Fair College, Kingwood College, Montgomery College, North Harris College and Tomball College)

FIRST YEAR

First Semester
ITSC 1401 Introduction to Computers OR 4
COSC 1401 Microcomputer Applications

SEMESTER TOTAL 4

Second Semester
BMGT 1309 Information & Project Management 3
ITNW 1425 Fundamentals of Networking Technlgs 4
ITSC 1405 Intro to PC Operating Systems 4
POFT 1301 Business English 3

SEMESTER TOTAL 14

PC SUPPORT SPECIALIST CERTIFICATE
(certificate offered at Cy-Fair College, Kingwood College, Montgomery College, North Harris College and Tomball College)

FIRST YEAR

First Semester
ITSC 1401 Introduction to Computers OR 4
COSC 1401 Microcomputer Applications

SEMESTER TOTAL 4

Second Semester
BMGT 1309 Information & Project Management 3
ITNW 1425 Fundamentals of Networking Technlgs 4
ITSC 1405 Intro to PC Operating Systems 4
POFT 1301 Business English 3

SEMESTER TOTAL 14

TOTAL Credit Hours for PC Support Specialist Certificate 51-53

1 Capstone course
2 Select from ITCC, ITSC, ITSE, ITSW, ITNW, ITMC, IMED, GRPH or CPMT

SECOND YEAR

First Semester
Eelective2 Technical OR 3-4
ACNT 1303 Introduction to Accounting I 3
ENGL 1301 Composition & Rhetoric I 3
ITSC 1425 Personal Computer Hardware 4
ITSC1 2439 Personal Computer Help Desk OR 3-4
ITSC1 2380 Cooperative Education 4
ITSW 1407 Introduction to Database 4

SEMESTER TOTAL 17-19

TOTAL Credit Hours for PC Support Specialist Certificate 51-53
### Programming Specialist Certificate

(certificate offered at Cy-Fair College, Kingwood College, Montgomery College, North Harris College and Tomball College)

**First Year**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>ITSC 1401</td>
<td>4</td>
</tr>
<tr>
<td>COSC 1401</td>
<td>4</td>
</tr>
<tr>
<td>ITSE 1402</td>
<td>4</td>
</tr>
<tr>
<td>SPCH 1318</td>
<td>3</td>
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**Second Semester**

<table>
<thead>
<tr>
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</tr>
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<tbody>
<tr>
<td>11</td>
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</table>

#### Second Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elective¹</td>
<td>3-4</td>
</tr>
<tr>
<td>Elective²</td>
<td>4</td>
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<tr>
<td>ITNW 1425</td>
<td>4</td>
</tr>
<tr>
<td>ITSC 1405</td>
<td>4</td>
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</tbody>
</table>

**Total Credit Hours for Programming Specialist Certificate**: 40-42

1. Choose from MATH 1314 or higher level course
2. Choose from General education course requirement
3. ITSE 1356, 1407, 1431, 1418, 1414, 1491, 1492, 2417 or INEW 2438
4. To meet multicultural requirement, choose an approved course from either social/behavioral science or humanities/fine art elective.
5. ITSE 2449 or 2471, 2431, 2451, 2435, INEW 2438
6. Choose from ITSE, ITSW, ITNW, ITSC, IMED, GRPH
7. Capstone course

---

### C++ Programming, Tech Prep Enhanced Skills Certificate

(certificate offered at Cy-Fair College, Kingwood College, and North Harris College)

The Tech Prep Enhanced Skills Certificate is considered to be a continuation of the Programming Specialist Associate of applied science degree, Tech Prep program.

**First Year**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Credit</th>
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<tbody>
<tr>
<td>ITSE 1407</td>
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---

1. Choose from MATH 1314 or higher level course
2. Choose from General education course requirement
3. ITSE 1356, 1407, 1431, 1418, 1414, 1491, 1492, 2417 or INEW 2438
4. To meet multicultural requirement, choose an approved course from either social/behavioral science or humanities/fine art elective.
5. ITSE 2449 or 2471, 2431, 2451, 2435, INEW 2438
6. Choose from ITSE, ITSW, ITNW, ITSC, IMED, GRPH
7. Capstone course
### DEGREES AND CERTIFICATES

#### Second Semester Credit

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>ITSE1 2431</td>
<td>Adv. C++ Programming</td>
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</tr>
<tr>
<td>ITSE1 2459</td>
<td>Adv. Computer Programming</td>
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</table>

**TOTAL Credit Hours for Enhanced Skills Certificate** 12

**GRAND TOTAL for AAS Degree with Enhanced Skills Certificate** 75-79

1 Courses used to meet requirements in AAS cannot be used toward requirements in enhanced skills certificate.

#### SECOND YEAR

**First Semester Credit**

<table>
<thead>
<tr>
<th>Course Code</th>
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<tbody>
<tr>
<td>GAME 2322</td>
<td>Project Development I</td>
<td>3</td>
</tr>
<tr>
<td>IMED 1305</td>
<td>Multimedia Courseware Develop I</td>
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</tr>
<tr>
<td>ARTV 1345</td>
<td>3-D Modeling and Rendering I</td>
<td>3</td>
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<td>ARTV 1343</td>
<td>Digital Sound</td>
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**SEMESTER TOTAL** 12

**Second Semester Credit**

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<td>GAME1 2334</td>
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<tr>
<td>MATH 1314</td>
<td>College Algebra</td>
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**SEMESTER TOTAL** 6

**TOTAL Credit Hours for Gaming Development and Design Certificate** 41-42

1 Capstone course

### Visual Basic, Tech Prep

**Enhanced Skills Certificate**

(certificate offered at Cy-Fair College, Kingwood College, North Harris College and Tomball College)

The Tech Prep Enhanced Skills Certificate is considered to be a continuation of the Programming Specialist Associate of applied science degree, Tech Prep program.

#### FIRST YEAR

**First Semester Credit**

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<td>ITSE 2471</td>
<td>Visual BASIC for the Web</td>
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**TOTAL Credit Hours for Enhanced Skills Certificate** 12

**GRAND TOTAL for AAS Degree with Enhanced Skills Certificate** 75-79

1 Courses used to meet AAS requirements cannot be used to meet requirements in enhanced skills certificate.

### GAMING DEVELOPMENT AND DESIGN CERTIFICATE

(certificate offered at Kingwood College and Tomball College)

#### FIRST YEAR

**First Semester Credit**

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<td>ITSE 1402</td>
<td>Computer Programming I OR</td>
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<tr>
<td>COSC 1309</td>
<td>Logic Design</td>
<td>4</td>
</tr>
<tr>
<td>ITSC 1401</td>
<td>Introduction to Computers OR</td>
<td>4</td>
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<td>COSC 1401</td>
<td>Microcomputer Applications I</td>
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**SEMESTER TOTAL** 10-11

**Second Semester Credit**

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<tr>
<td>ARTS 1316</td>
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<td>ARTV 1303</td>
<td>Basic Animation</td>
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<tr>
<td>ARTC 1302</td>
<td>Digital Imaging I</td>
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<td>“C” Language OR</td>
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<td>Introduction to C++ Programming</td>
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**SEMESTER TOTAL** 13

### GAME DESIGN AND SIMULATION

**Associate of applied science degree**

(degree offered at Kingwood College)

#### FIRST YEAR

**First Semester Credit**

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<tr>
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<td>ARTS 1316</td>
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**SEMESTER TOTAL** 16

**Second Semester Credit**

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<tr>
<td>Tech. Track*</td>
<td>Technical Core</td>
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<tr>
<td>Tech. Track*</td>
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<td>4</td>
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<tr>
<td>KINE</td>
<td>Physical Activity</td>
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<tr>
<td>ENGL 1301</td>
<td>Composition and Rhetoric I</td>
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**SEMESTER TOTAL** 18

### CAPSTONE COURSE

GAME DESIGN AND SIMULATION

**Capstone course**

**Second Semester Credit**

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<th>Course Title</th>
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<tbody>
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**SEMESTER TOTAL** 17

### Second Semester

<table>
<thead>
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<td>SPCH 1318</td>
<td>Interpersonal Communications</td>
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</tr>
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<td>Tech. Track*</td>
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<td>3-4</td>
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<tr>
<td>Tech. Track*</td>
<td>Technical Core</td>
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<td>GAME¹</td>
<td>2334 Project Development II OR</td>
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<td>GAME¹</td>
<td>2386 Internship</td>
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**SEMESTER TOTAL** 15-16

**TOTAL Credit Hours for Gaming Design and Simulation AAS** 66-67

¹ Capstone course
² Take one technical course from the other track.
³ All Technical Core courses must be taken from the same track, A or B:

**Track A, Game Development:** ITSE 1407, ITSE 2431, GAME 1303, ITSE 1402, GAME 1304, GAME 2332, GAME 2336, ITSC 1425, ARTV 1343, PHYS 1410

**Track B, Game Design:** ARTC 1302, ARTC 2305, ARTV 1341, ARTC 2341, IMED 1305, ARTV 1345, ARTC 1353, IMED 1301, IMED 1345, IMED 2345

### E-Business Web Developer Certificate

*(certificate offered at Cy-Fair College, Kingwood College, Montgomery College and North Harris College)*

#### FIRST YEAR

**First Semester (Summer) Credit**

<table>
<thead>
<tr>
<th>Course</th>
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<th>Credit</th>
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<tbody>
<tr>
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<td>Introduction to Computers OR</td>
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<tr>
<td>COSC 1401</td>
<td>Microcomputer Applications</td>
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**SEMESTER TOTAL** 4

**Second Semester Credit**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
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<tbody>
<tr>
<td>IMED 1316</td>
<td>Web Page Design I</td>
<td>3</td>
</tr>
<tr>
<td>ITSE 1402</td>
<td>Computer Programming</td>
<td>4</td>
</tr>
<tr>
<td>ITNW 1407</td>
<td>Introduction to Database</td>
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<tr>
<td>POFT 1301</td>
<td>Business English</td>
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**SEMESTER TOTAL** 18

**Third Semester Credit**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
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<tbody>
<tr>
<td>Elective¹</td>
<td>Programming Language</td>
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<tr>
<td>ITSC 1405</td>
<td>Intro to PC Operating Systems</td>
<td>4</td>
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<tr>
<td>ITNW 1425</td>
<td>Fundamentals Networking Technlgs</td>
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**SEMESTER TOTAL** 12

**Fourth Semester Credit**

<table>
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<tr>
<th>Course</th>
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<tbody>
<tr>
<td>Elective²</td>
<td>Programming Language</td>
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<tr>
<td>ITSC 1407</td>
<td>UNIX Operating System I</td>
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<tr>
<td>ITSE 2472</td>
<td>Web Application Development</td>
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**SEMESTER TOTAL** 12

**TOTAL Credit Hours for E-Business Web Developer Certificate** 42

¹ ITSE 1431, 1407, 1445, 1492
² ITSE 2449, 2431, 2454, 2417, 1492
³ Capstone courses

### E-Business Web Developer Specialization

**Associate of applied science degree, Tech Prep**

*(specialization offered at Cy-Fair College, Kingwood College, and North Harris College)*

#### FIRST YEAR

**First Semester (Summer) Credit**

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>ITSC 1401</td>
<td>Introduction to Computers OR</td>
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<td>COSC 1401</td>
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**SEMESTER TOTAL** 4

**Second Semester Credit**

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<tr>
<td>BMGT 1309</td>
<td>Information &amp; Project Management</td>
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<td>ITNW 1425</td>
<td>Fundamentals Networking Technlgs</td>
<td>4</td>
</tr>
<tr>
<td>ITSC 1405</td>
<td>Intro to PC Operating Systems</td>
<td>4</td>
</tr>
<tr>
<td>ITSE 1402</td>
<td>Computer Programming</td>
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<tr>
<td>POFT 1301</td>
<td>Business English</td>
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**SEMESTER TOTAL** 18

**Third Semester Credit**

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<th>Course</th>
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<tr>
<td>Elective²</td>
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<tr>
<td>IMED 1316</td>
<td>Web Page Design I</td>
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<tr>
<td>ITSC 1407</td>
<td>UNIX Operating System I</td>
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<td>ITNW 1407</td>
<td>Introduction to Database</td>
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<td>MRKG 1311</td>
<td>Principles of Marketing</td>
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**SEMESTER TOTAL** 18

**SECOND YEAR**

**First Semester Credit**

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<td>Elective³</td>
<td>Advanced Databases (SQL)</td>
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<td>Elective³</td>
<td>Humanities/Fine Arts</td>
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<tr>
<td>Elective⁴</td>
<td>Programming Language (sequence course)</td>
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<td>Elective⁴</td>
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**SEMESTER TOTAL** 17

**Second Semester Credit**

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<td>Elective⁷</td>
<td>General Education</td>
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<td>Elective¹</td>
<td>Math Elective</td>
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<td>ITSE 2472</td>
<td>Web Application Development</td>
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<tr>
<td>ITSE 2380</td>
<td>Cooperative Education OR</td>
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<td>IMED 2309</td>
<td>Internet Commerce OR</td>
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<td>Application Problem Solving</td>
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**SEMESTER TOTAL** 14-15

**TOTAL Credit hours for E-Business Web Developer Specialization** 71-72

---

110
1 Choose MATH 1314 or higher level course.
2 Choose from ITSE 1431, 1407, 1445, 1492.
3 To meet the multicultural component for the AAS degree, you must choose a social/behavioral science OR Humanities/Fine Arts elective from one of these courses: GEOG 1303, SOCI 1301, ARTS 1301, HUMA 1301, or PHIL 1304.
4 ITSE 2433, 2456, or ITSW 2437 depending on concentration.
5 Choose from ITSE 2449, 2431, 2454, 2417, 1492.
6 Capstone course.
7 Choose from general education electives.

Database Administration Specialization
**Associate of applied science degree, Tech Prep**
(specialization offered at Tomball College)

**FIRST YEAR**

First Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit</th>
<th>Description</th>
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<tr>
<td>Elective</td>
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<tr>
<td>ENGL 1301</td>
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<td>Composition &amp; Rhetoric I</td>
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<tr>
<td>KINE 1402</td>
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<td>Physical Activity</td>
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<tr>
<td>COSC 1309</td>
<td>4</td>
<td>Logic Design</td>
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<tr>
<td>ITSE 1401</td>
<td>4</td>
<td>Microcomputer Applications OR</td>
</tr>
<tr>
<td>ITSC 1401</td>
<td>4</td>
<td>Introduction to Computers</td>
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<td>Microcomputer Applications</td>
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Second Semester

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**SECOND YEAR**

First Semester

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Second Semester

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<td>ITSE 2458</td>
<td>4</td>
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<td>ITSE 2429</td>
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<td>Oracle Network Administration &amp; Performance Tuning</td>
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TOTAL Credit hours for
Database Administration Specialization 65

**DATABASE ADMINISTRATION CERTIFICATE**
**(certificate offered at Tomball College)**

**FIRST YEAR**

First Semester

<table>
<thead>
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<tr>
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<td>ITSE 1402</td>
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Second Semester

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<td>ITSE 1445</td>
<td>4</td>
<td>Intro to Oracle SQL</td>
</tr>
<tr>
<td>ITSE 2456</td>
<td>4</td>
<td>Oracle Database Administration I</td>
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Third Semester

<table>
<thead>
<tr>
<th>Course</th>
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<tr>
<td>ITSE 2458</td>
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<td>Oracle Database Administration II</td>
</tr>
<tr>
<td>ITSE 2429</td>
<td>4</td>
<td>Oracle Network Administration &amp; Performance Tuning</td>
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<tr>
<td><strong>SEMESTER TOTAL</strong></td>
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</table>

**TOTAL Credit Hours for Database Administration Certificate** 24

1 Capstone course.

**COSMETOLOGY**

The professional field of cosmetology is very diverse with regard to training requirements and areas of employment. The program offers certificates for the facial specialist, nail technician, instructor license and operator license along with an associates of applied science degree. All of the cosmetology certificate programs are approved by the Texas Department of Licensing and Regulations and prepare students for their respective state licensing examinations. Upon successful completion of the program requirements, graduate students are eligible to take their state exam. Upon passing their state exam, program graduates become licensed to practice in the state of Texas.
DEGREES AND CERTIFICATES

The cosmetology certificate program is a full time, 12 month program. Graduates have many employment opportunities including becoming a stylist, skin care specialist, make-up artist, or hair coloring and chemical technician. Other areas may be to become a research assistant in the cosmetology industry, a sales representative for a beauty product, or beauty editor for newspapers and magazines. Salaries vary depending upon the place of employment and the graduate's skills and number of work hours.

The facial specialist certificate will prepare an individual to perform all aspects of skin care and make-up. The nail technician certificate is designed to prepare an individual for all aspects of the nail profession. Each one of these certificates are approximately half of the length of the cosmetology certificate program.

The general education core courses will transfer to a variety of universities. Contact the counselor or adviser at any college for specific information and to obtain the recommended sequencing of courses. The sequence of courses can also be found at: www.nhmccd.edu/catalog/

**Admission Criteria**
In addition to the district admission requirements, the following are requirements for admission to the cosmetology program.

1. High school diploma or GED.
2. ASSET minimum scores of 39 in reading and 41 in writing (or CELT reading of 60 and CELT writing of 60) , OR the COMPASS minimum scores of 80 in writing and 76-78 in reading, OR passed reading and writing section of THEA, OR ACT minimum scores of 17 in reading and 16 in writing (fall 1989 to present), OR complete ENGL0305 and ENGL 0306 with a grade of A or B, OR completion of college-level English with a grade of C or better verified by official transcript, OR an earned college degree.
3. Minimum age of 17 years.
4. Mandatory attendance at a scheduled orientation session or Departmental approval.
5. Program admission for students with previous college experience requires that the student be in disciplinary good standing at all former institutions. No student will be admitted who is under disciplinary suspension status from another college or institution. Any such status requires positive resolution from the other institution before a student will be considered for cosmetology admission.

After program admission approval, the student should have the registration form approved by the cosmetology faculty or dean.

**Progression Requirements**
Once admitted to the cosmetology program, a student must attain a grade of “C” or better in each cosmetology course in order to progress in the program.

**Readmission Policy**
A student who withdraws from the Cosmetology Program may be readmitted only once with the recommendation of the department faculty.

**Cosmetology Instructor Certificate**
In addition to the district admission requirements the following are requirements for admission to the cosmetology instructor certificate.

1. High school diploma or GED.
2. Current Texas operator’s license.
3. Within the past five years applicants must have a minimum of three years work experience as a licensed cosmetologist versed in all phases of cosmetology. Verification will be required.
4. Completion of 12 semester hours in general education including ENGL 1301.

**COSMETOLOGY INSTRUCTOR CERTIFICATE**
(certificate offered at Kingwood College and North Harris College)

<table>
<thead>
<tr>
<th>FIRST YEAR</th>
<th>Prerequisite Semester</th>
<th>Credit</th>
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</thead>
<tbody>
<tr>
<td>ENGL 1301</td>
<td>Composition &amp; Rhetoric I</td>
<td>3</td>
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<td>Electives</td>
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<td><strong>SEMESTER TOTAL</strong></td>
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## DEGREES AND CERTIFICATES

### FACIAL SPECIALIST CERTIFICATE
(credential offered at North Harris College and Kingwood College)

**FIRST YEAR**

<table>
<thead>
<tr>
<th>First Semester</th>
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<tbody>
<tr>
<td>CSME 1420 Orientation to Facial Specialist</td>
<td>4</td>
</tr>
<tr>
<td>CSME 1421 Principles of Facial/Esthetic Technology I</td>
<td>4</td>
</tr>
<tr>
<td>CSME 1248 Principles of Skin Care</td>
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<table>
<thead>
<tr>
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<th>Credit</th>
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<tbody>
<tr>
<td>CSME 1447 Principles of Skin Care/Facials and Related Theory</td>
<td>4</td>
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<tr>
<td>CSME 1445 Principles of Facial/Esthetic Technology II</td>
<td>4</td>
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<td>CSME 2431 Principles of Facial/Esthetic Technology III</td>
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<td><strong>SEMESTER TOTAL</strong></td>
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</table>

**TOTAL Credit Hours for Facial Specialist Certificate:** 22

*Note: Capstone experience is completed by taking a departmental exam.*

### COSMETOLOGY OPERATOR CERTIFICATE
(credential offered at Kingwood College and North Harris College)

**FIRST YEAR**

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<tr>
<td>CSME 1310 Intro to Haircutting &amp; Related Theory</td>
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<tr>
<td>CSME 1501 Orientation to Cosmetology</td>
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<tr>
<td>CSME 1505 Fundamentals of Cosmetology</td>
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<thead>
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<th>Credit</th>
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<tbody>
<tr>
<td>CSME 1420 Orientation to Facial Specialist</td>
<td>4</td>
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<tr>
<td>CSME 1421 Principles of Facial/Esthetic Technology I</td>
<td>4</td>
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<td>CSME 1248 Principles of Skin Care</td>
<td>2</td>
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<tr>
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</table>

**TOTAL Credit Hours for Cosmetology Operator Certificate:** 36

*Note: Capstone experience is completed by taking a departmental exam.*

### NAIL TECHNICIAN CERTIFICATE
(credential offered at North Harris College)

**FIRST YEAR**

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<td>CSME 1441 Principles of Nail Technology II</td>
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<td>CSME 1531 Principles of Nail Technology I</td>
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<td>CSME 2530 Nail Enhancement</td>
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**TOTAL Credit Hours for Nail Technician Certificate:** 18

*Note: Capstone experience is completed by taking a departmental exam.*

### COSMETOLOGY
Associate of Applied Science Degree
(degree offered at Kingwood College and North Harris College)

**FIRST YEAR**

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<tr>
<td>ENGL 1301 Composition and Rhetoric I</td>
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<td>GOVT 2301 American Government I <strong>OR</strong></td>
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<td>GOVT 2302 American Government II</td>
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**DEGREES AND CERTIFICATES**

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<td>PSYC</td>
<td>General Psychology</td>
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**Second Semester**

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<td>CSME</td>
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</tr>
<tr>
<td>CSME</td>
<td>Intro to Haircutting &amp; Related Theory</td>
<td>3</td>
</tr>
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<td>CSME</td>
<td>Orientation to Cosmetology</td>
<td>5</td>
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<tr>
<td>CSME</td>
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**SECOND YEAR**

**First Semester**

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<th>Course</th>
<th>Title</th>
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<tbody>
<tr>
<td>CSME</td>
<td>Chemical Reformation &amp; Related Theory</td>
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<td>CSME</td>
<td>Intermediate Haircutting &amp; Related Theory</td>
<td>3</td>
</tr>
<tr>
<td>CSME</td>
<td>Advanced Cosmetology Techniques</td>
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</tr>
<tr>
<td>CSME</td>
<td>Principles of Hair Coloring &amp; Related Theory</td>
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**Second Semester**

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<tr>
<td>CSME</td>
<td>Advanced Hair Design</td>
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<tr>
<td>CSME</td>
<td>Prep. for Texas Cosmetology</td>
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<tr>
<td>Elective</td>
<td>Humanities/Fine Arts</td>
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<tr>
<td>ITSC</td>
<td>Introduction to Computers</td>
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**TOTAL Credit Hours for AAS Degree**

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<td>MATH</td>
<td>Any college level math</td>
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<tr>
<td>PSYC</td>
<td>General Psychology</td>
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</tr>
<tr>
<td><strong>SEMESTER TOTAL</strong></td>
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**SECOND YEAR**

**First Semester**

<table>
<thead>
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<th>Course</th>
<th>Title</th>
<th>Credit</th>
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<tbody>
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<td>CSME</td>
<td>Chemical Reformation &amp; Related Theory</td>
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</tr>
<tr>
<td>CSME</td>
<td>Intermediate Haircutting &amp; Related Theory</td>
<td>3</td>
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<tr>
<td>CSME</td>
<td>Advanced Cosmetology Techniques</td>
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<tr>
<td>CSME</td>
<td>Principles of Hair Coloring &amp; Related Theory</td>
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</tr>
<tr>
<td>PSYC</td>
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**Second Semester**

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<tr>
<td>DIHG</td>
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</tr>
<tr>
<td>DHIY</td>
<td>Preventive Dental Hygiene I</td>
<td>2</td>
</tr>
<tr>
<td>DHIY</td>
<td>Dental Radiology</td>
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<tr>
<td><strong>SEMESTER TOTAL</strong></td>
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</table>

**TOTAL Credit Hours for AAS Degree**

**1** Must meet the multicultural requirement.

Note: Capstone experience is completed by taking a departmental exam.

**DENTAL HYGIENE**

The North Harris Montgomery Community College District offers an Associate of Applied Science in Dental Hygiene at Kingwood College. The Dental Hygiene curriculum offered at Kingwood College is a structured intense program with didactic and clinical practice taking place in the health science building on the Kingwood College campus. External rotations are integrated into the second year curriculum for experiences outside of the school setting. This program is designed for those interested in becoming a registered dental hygienist. Graduates are prepared to function in a variety of settings including private dental offices, dental clinics or public dental health care clinics. The AAS in Dental Hygiene program includes general education courses as a foundation for dental hygiene courses. Prerequisite courses are designed to allow the student an opportunity to experience the type of coursework that will be involved in the study of dental hygiene.

At some facilities, students may be required to successfully pass a background check and drug screen. Also, regulations require that students complete the Hepatitis B immunization series prior to the first day of class. This immunization series takes 6 months to complete.

**DENTAL HYGIENE**

**Associate of applied science degree**

(degree offered at Kingwood College)

**PREREQUISITE**

<table>
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<th>Course</th>
<th>Title</th>
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<tbody>
<tr>
<td>CHEM</td>
<td>Introduction to Chemistry</td>
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<tr>
<td>ENGL</td>
<td>Composition and Rhetoric</td>
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</tr>
<tr>
<td>BIOL</td>
<td>Human Anatomy and Physiology</td>
<td>4</td>
</tr>
<tr>
<td>SOCI</td>
<td>Principles of Sociology</td>
<td>3</td>
</tr>
<tr>
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**FIRST YEAR**

**First Semester**

<table>
<thead>
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<th>Title</th>
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<tbody>
<tr>
<td>BIOL</td>
<td>Human Anatomy and Physiology</td>
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<tr>
<td>DHIY</td>
<td>Orofacial Anatomy, Histology &amp; Embryology</td>
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<tr>
<td>DHIY</td>
<td>Preclinical Dental Hygiene Care</td>
<td>4</td>
</tr>
<tr>
<td>DHIY</td>
<td>Preventive Dental Hygiene I</td>
<td>2</td>
</tr>
<tr>
<td>DHIY</td>
<td>Dental Radiology</td>
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<td><strong>SEMESTER TOTAL</strong></td>
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**Second Semester**

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<th>Course</th>
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<tr>
<td>BIOL</td>
<td>Medical Microbiology</td>
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<td>DHIY</td>
<td>Clinical - Dental Hygiene/ Hygienist I</td>
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<td>DHIY</td>
<td>Periodontology</td>
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<td>DHIY</td>
<td>General and Dental Nutrition</td>
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<td>Contemporary Dental Hygiene Care I</td>
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<td>1</td>
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**Third Semester (Summer)**

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<tr>
<td>DHIY</td>
<td>Dental Materials</td>
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<td>DHIY</td>
<td>Clinical - Dental Hygiene/ Hygienist II</td>
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### DEGREES AND CERTIFICATES

#### SECOND YEAR

<table>
<thead>
<tr>
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<th>Credit</th>
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<tbody>
<tr>
<td>SPCH 1318</td>
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<tr>
<td>DHYG 1235</td>
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<tr>
<td>DHYG 2231</td>
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<tr>
<td>DHYG 2362</td>
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<td>DHYG 1339</td>
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<table>
<thead>
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<th>Second Semester</th>
<th>Credit</th>
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<tbody>
<tr>
<td>PHIL 2306</td>
<td>3</td>
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<tr>
<td>DHYG 1215</td>
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<td>DHYG 1123</td>
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<td>DHYG 2363</td>
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</table>

**TOTAL Credit Hours for AAS Degree** 72

* Students must meet Math competency

---

**DIAGNOSTIC MEDICAL SONOGRAPHY**

The associate of applied science degree in diagnostic medical sonography and the advanced technical certificate in diagnostic medical sonography are designed to prepare graduates for employment in the health industry in the sonography field. The program is also designed to provide opportunities for job advancement and retention for currently employed radiologic technologists.

Students who currently hold an ARRT certification or a two-year degree in a patient care health program are eligible for admission to the certificate program. Students who do not hold an ARRT certification or a two-year degree in a patient care health program would apply for the AAS in DMS. Students must pass the THEA test and place into college level reading, writing and math prior to entering the program. Students must complete ENGL 1301, MATH 1314, PHYS 1410, BIOL 2401 and 2402 prior to the first DMSO course in the AAS degree. Interested students should contact Sonography Faculty for information regarding application and admission to the program.

Students are required to successfully pass a background check and at some facilities may also be required to successfully pass a drug screening. Also, regulations require that students complete the Hepatitis B immunization series that may take 3 to 6 months prior to direct patient contact. Prospective students are required to attend an information session.

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### DIAGNOSTIC MEDICAL SONOGRAPHY

**Associate of applied science degree**

(degree offered at Cy-Fair College)

#### PREREQUISITE

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<th>First Semester</th>
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<td>PHYS 1410</td>
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### FIRST YEAR

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<td>DMSO 1405</td>
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### SECOND YEAR

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115
### DEGREES AND CERTIFICATES

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<td>Elective</td>
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<td>Practicum III</td>
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<td>DSVT 2200</td>
<td>Vascular Technology Applications</td>
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**TOTAL Credit Hours for AAS Degree** 72

1. Meets multicultural course requirement
2. Capstone course

Students must pass the THEA test and place into college level reading, writing and math prior to entering program.

Students must complete PHYS 1410, ENGL 1301, MATH 1314, BIOL 2401 and 2402 prior to the first DMSO course.

Oral communications will be woven throughout laboratory courses and clinical courses.

### SONOGRAPHY ADVANCED TECHNICAL CERTIFICATE

(certificate offered at Cy-Fair College)

**FIRST YEAR**

**First Semester**

<table>
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<td>DMSO 1351</td>
<td>Sonographic Sectional Anatomy</td>
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<td>DMSO 1405</td>
<td>Sonography of Abdominopelvic Cavity</td>
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<td>DMSO 1302</td>
<td>Basic Ultrasound Physics</td>
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<td>DMSO 1360</td>
<td>Clinical</td>
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<td>DMSO 1342</td>
<td>Intermediate Ultrasound Physics</td>
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<tr>
<td>DMSO 2405</td>
<td>Sonography of Obstetrics/Gynecology</td>
<td>4</td>
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<tr>
<td>DMSO 2253</td>
<td>Sonography of Superficial Structures</td>
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**Third (Summer Semester)**

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<td>Practicum II (13 weeks)</td>
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<td>DMSO 2342</td>
<td>Sonography of High Risk Obstetrics</td>
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<tr>
<td></td>
<td>(12 weeks)</td>
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<td>DMSO 2351</td>
<td>Doppler Physics (12 weeks)</td>
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**SECOND YEAR**

**First Semester**

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<td>DMSO 2366</td>
<td>Practicum III</td>
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<tr>
<td>DMSO 2130</td>
<td>Advanced Ultrasound Review</td>
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<td>DMSO 2245</td>
<td>Advanced Sonography Practices</td>
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<tr>
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<td><strong>SEMESTER TOTAL</strong></td>
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</table>

**TOTAL Credit Hours for Sonography Advanced Technical Certificate** 44

1. Capstone course

Note: Admission to the program requires graduation from a two-year patient-care allied health program.

### ELECTRICIAN

If you have been fascinated by electricity, then you might want to look at a career as an electrician. Electricians also enjoy one of the higher paid specialty-industry fields with a solid future as America becomes more dependent on consistent and well-maintained supplies of electricity.

You can become an electrician by entering a four-year apprenticeship program through the sponsorship of a Master Electrician or through the sponsorship of a company that provides electrician services under the supervision of a Master Electrician. Candidates must complete 8000 hours of on-the-job training in the program during the apprenticeship time with classroom instruction also being provided. At the completion of the apprenticeship, the individual is qualified to take a state-licensing exam to become a Journeyman Electrician.

There are two general types of electrical work:

- Construction work, which includes reading blueprints, wiring, installing, and testing electrical systems; and
- Maintenance work, which involves troubleshooting, testing, and fixing already installed, improperly functioning, electrical systems.

Some Electricians become electrical inspectors, enter teaching programs, or work as construction consultants. A few enter training programs to become contractors. Electricians are also finding that their profession is becoming linked with those who do computer and telecommunications wiring. Over 15 percent of electricians take additional classes on telecommunications systems, wiring, and the electrical interfaces.

At Tomball College, specialized electrician courses are offered that emphasize application more than theoretical development. The courses complement the on-the-job training and mirror real world situations by providing classroom studies with hands-on applications in high-tech laboratories. The program also works with local electrician providers/companies to insure the class focus meets their needs and on
DEGREES AND CERTIFICATES

preparing the student to pass the Texas State Licensing exam.

The core courses will transfer to a variety of colleges and universities. Contact a counselor or faculty adviser for specific information or to obtain the recommended sequencing of courses.

RESIDENTIAL/COMMERCIAL ELECTRICIAN CERTIFICATE
(certificate offered at Tomball College)

FIRST YEAR
First Semester
ELPT 1311 Basic Electrical Theory 3
ELPT 1315 Electrical Calculations I 3
ELPT 1321 Intro to Electrical Safety and Tools 3
ELPT 1325 National Electrical Code I 3

SEMESTER TOTAL 12

Second Semester
ELPT 2325 National Electrical Code II 3
DFTG 1325 Blueprint Reading and Sketching 3
ELPT 1429 Residential Wiring 4
ELPT 1445 Commercial Wiring 4

SEMESTER TOTAL 14

TOTAL Credit Hours for Residential/Commercial Electrician Certificate 26

1 Capstone course

EMERGENCY MEDICAL SERVICES PROFESSIONS

The emergency medical services professions associate of applied science degree includes knowledge, skills and attitudes necessary to recognize, assess, and manage medical emergencies under the supervision and direction of a physician. Graduates can expect career opportunities predominantly with transfer and emergency ambulance services.

Students completing course work in this program are eligible to take EMT National Registry exams. Advanced placement is available for EMT’s, EMT-I’s and paramedics who are currently certified in the State of Texas, or Nationally Registered, and who enter the EMS professions program having taken approved EMS training courses for which college credit was not given. Contact the EMSP program director for additional information concerning advanced placement questions.

The general education core will transfer to a variety of colleges and universities. Contact a counselor, or faculty member at any of the colleges for specific information and to obtain the recommended sequencing of courses. The sequence of courses can also be found at www.nhmccd.edu/catalog/

Admissions Criteria:
To be admitted to the EMSP program, students must first meet the basic requirements for admission to North Harris Montgomery Community College District. However, admission to NHMCCD does not constitute automatic acceptance into the EMSP program.

Admission to the program does not guarantee eligibility for the National Registry Exams or certification by Texas Department of State Health Services. Criminal background checks are a part of the screening process conducted by the Texas Department of State Health Services. As a result, some candidates may be ineligible for certification. Clinical facilities may require students to successfully pass a background check and drug screen. Candidates with concerns about their background in this regard should contact the Texas Department of State Health Services, in Austin, with specific concerns. NHMCCD personnel are unable to make any determinations as to a potential candidate’s eligibility.

Persons wishing to enroll in the EMT-Basic course (EMSP 1501/1160) must:

1. Hold a high school diploma or a GED.
2. Apply for and achieve admission to NHMCCD.
3. Present proof of successful completion of the American Heart Association’s Basic Life Support for Health Care Providers, or an equivalent course approved by the Program Director, within the previous two years.
4. Document immunization against tetanus, diphtheria, mumps, measles, rubella and hepatitis B prior to first scheduled clinical rotation.
5. Document negative results from a tuberculosis test (Mantoux) or chest x-ray performed within the previous 12 months.

Students must make formal application to the EMSP Department to pursue course work beyond EMSP 1501/1160. Applicants who are currently certified at the EMT-Basic or EMT-Intermediate level or have completed EMSP 1501 (EMT-Basic) and EMSP 1160 (EMT-Basic Clinical) but who do not hold EMT-Basic certification may be accepted with the provision that they obtain EMT-Basic certification prior to beginning the first paramedic clinical rotation. Students are accepted for advanced course work only in the fall semester.

The number of students is limited by spaces available for clinical experience in affiliated hospitals and EMS provider organizations. Competitive selection of students may be necessary if the number of applicants exceeds the number of seats available.

An application portfolio must be submitted according to the deadlines established by the EMSP Department of each college program. The portfolio must include:

1. A completed application for admission,
2. Documentation of high school diploma or a GED,
3. Copies of all relevant academic transcripts: high school, college or university, military service schools, and other (proprietary schools),
4. A resume or curriculum vitae showing work history with emphasis on EMS or other health care experience,
5. Documentation of EMT-Basic certification. Students who currently are enrolled in an EMT-Basic course or who have completed EMT-Basic course work and are engaged in the credentialing process should provide a statement to this effect.
6. Results of the Department’s comprehensive EMT-Basic examination. Students who successfully complete EMSP 1501 are exempt from taking this examination and may substitute their score on the EMSP 1501 final examination. To be considered for admission, an applicant must achieve a minimum score of 70 on this examination. One retest will be permitted.
7. Verification of immunization against tetanus, diphtheria, mumps, measles, rubella, and hepatitis B.
8. Negative results from a tuberculosis skin test (Mantoux) or chest x-ray performed within the last 12 months.
9. Proof of successful completion of the American Heart Association’s Basic Life Support for Health Care Providers, or an equivalent course approved by the Program Director, within the previous two years.

After a completed application portfolio is on file, an interview with one or more members of the EMSP faculty will be scheduled. Letters regarding admission status will be mailed out at the conclusion of the application process. Additional program costs to be assumed by the student include uniforms, malpractice insurance, background checks, and skills examination fees.

For additional information, including a downloadable application at NHC, please visit the Web site at http://ems.nhmccd.edu.

North Harris College is a nationally accredited program through the Commission on Accreditation of Allied Health Educational Programs. For additional information concerning the Cy-Fair EMS program including a downloadable application, please visit the Web site at http://www.cy-faircollege.com/EMSfire/

EMERGENCY MEDICAL SERVICES PROFESSIONS INTERMEDIATE CERTIFICATE
(certificate offered at Cy-Fair College and North Harris College)

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<tbody>
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**FIRST YEAR**

**Prerequisite Semester**

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**First Semester**

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**Second Semester**

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**SECOND YEAR**

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**TOTAL Credit Hours for Emergency Medical Services Professions Intermediate Certificate** 23

**Note:** It is recommended that students complete BIOL 2401 prior to beginning paramedic coursework.

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**EMERGENCY MEDICAL SERVICES PROFESSIONS PARAMEDIC CERTIFICATE**

(certificate offered at Cy-Fair College and North Harris College)

**Prerequisite Semester**

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**FIRST YEAR**

**First Semester**

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**Third Semester**

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**SECOND YEAR**

**First Semester**

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**Second Semester**

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</table>

**TOTAL Credit Hours for Emergency Medical Services Professions Paramedic Certificate** 39

1 Capstone experience course

**Note:** It is recommended that students complete BIOL 2401 prior to beginning paramedic coursework.

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**EMERGENCY MEDICAL SERVICES PROFESSIONS**

Associate of applied science degree, Tech Prep

(degree offered at Cy-Fair College and North Harris College)

**Prerequisite Semester**

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**FIRST YEAR**

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**Second Semester**

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<tr>
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**SECOND YEAR**

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<td><strong>SEMESTER TOTAL</strong></td>
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</tbody>
</table>

**TOTAL Credit Hours for Emergency Medical Services Professions Paramedic Certificate** 39

**Note:** It is recommended that students complete BIOL 2401 prior to beginning paramedic coursework.
DEGREES AND CERTIFICATES

Second Semester  
EMSP 2143 Assessment Based Management 1  
EMSP 2361 Clinical - EMS 3  
GOVT 2301 American Government 3  
SOCF 1301 Principles of Sociology 3  
**SEMESTER TOTAL** 10  

**TOTAL Credit Hours for AAS Degree** 67

1. Capstone course  
2. Meets multicultural requirements.  
3. Choose from EMSP 1358, EMSP 2300, EMSP 2345, or EMSP 2352  
4. Students must meet Math competency  
   Note: It is recommended that students complete BIOL 2401 prior to beginning paramedic coursework.

ENGINEERING TECHNOLOGY

ENGINEERING DESIGN GRAPHICS TECHNOLOGY

The engineering design graphics technology associate of applied science degree program prepares graduates for entry-level careers as engineering design technicians. Courses within the program include technical design graphics applications, computer-aided design software and programming, solid modeling design, applied strength of materials, statics, technical specialty courses, and general academic courses.

The engineering design graphics technology associate of applied science degree is awarded for successful completion of the 61-65 semester credit hours required in the degree plan. Students may specialize in architectural engineering, mechanical engineering or metal building drafting and design. Students desiring a less comprehensive program may consider the Computer-Aided Design Operator/Drafting Certificate. This certificate program includes 27-28 semester credit hours of required technical courses.

Graduates of the engineering design graphics technology associate of applied science degree possess the technical skills and knowledge to perform essential design layout, prepare supporting documentation, and create finished engineering documentation for production in the engineering, construction, or manufacturing industries.

A wide variety of employment opportunities are available to graduates. Engineering design graphics technicians are listed as emerging and evolving occupations by the Texas State occupational information coordinating committee and identified as targeted occupations by TechForce 2000 for the Gulf Coast region. A targeted occupation is one which has a minimum of 1000 job openings each year and meets an above average hourly wage rate.

The general education core and many technical courses will transfer to a variety of colleges and universities. Contact a counselor, or faculty member at any of the colleges for specific information and to obtain the recommended sequencing of courses. The sequence of courses can also be found at: www.nhmccd.edu/catalog/

COMPUTER-AIDED DESIGN OPERATOR/ DRAFTING CERTIFICATE  
(certificate offered at Cy-Fair College, North Harris College and Tomball College)

**FIRST YEAR**

<table>
<thead>
<tr>
<th>Semester</th>
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<tbody>
<tr>
<td>First Semester</td>
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</tr>
<tr>
<td>DFTG 1305 Technical Drafting</td>
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<tr>
<td>DFTG 1309 Basic Computer-Aided Drafting</td>
<td>3</td>
</tr>
<tr>
<td>CNBT1 1311 Construction Meth. &amp; Materials I OR</td>
<td>3</td>
</tr>
<tr>
<td>MCHN2 1319 Manufacturing Materials &amp; Processes</td>
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<tr>
<td>TECM3 1303 Technical Mathematics OR</td>
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<tr>
<td>MATH 1314 College Algebra</td>
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<td>DFTG 2340 Solid Modeling/Design</td>
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**TOTAL Credit Hours for Computer-Aided Design Operator/Drafting Certificate** 27-28

1. CNBT 1311 is for students interested in the areas of architectural, structural, civil, or construction.  
2. MCHN 1319 is for students interested in the areas of manufacturing or product design.  
3. Students pursuing an associate degree should consider taking MATH 1314.  
4. Students interested in the areas of architectural, structural, civil, or construction should select from the following electives: DFTG 1317, 2310, 2312, 2323, or 2328. Students interested in the areas of manufacturing or
product design should select from the following electives: DFTG 2302, 2312, 2323, 2335 or CETT 1409. Students not specializing may select from either group of electives. Note: A capstone experience is the completion of a departmental exam with a minimum grade of 80% and is required to complete this certificate.

**ARCHITECTURAL ENGINEERING TECHNOLOGY SPECIALIZATION**

*Associate of applied science degree, Tech Prep* (specialization offered at North Harris College)

**FIRST YEAR**

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<td>MATH 1314</td>
<td>College Algebra</td>
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<td>CNBT 1311</td>
<td>Construction Methods &amp; Materials I</td>
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<tr>
<td>DFTG 1309</td>
<td>Basic Computer-Aided Drafting OR</td>
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<td>DFTG 2319</td>
<td>Intermediate Computer-Aided Drafting</td>
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<td>Building Codes &amp; Inspection</td>
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<td>DFTG 2331</td>
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**SECOND YEAR**

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<td>DFTG 1371</td>
<td>Metal Building Systems I</td>
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<tr>
<td>PHYS 1401</td>
<td>General Physics I</td>
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<tr>
<td>DFTG 1317</td>
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<td>SPCF 1</td>
<td>Speech Elective</td>
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<tr>
<td>ENTC 1423</td>
<td>Strength of Materials</td>
</tr>
<tr>
<td>ENTC 2380</td>
<td>Cooperative Education OR</td>
</tr>
<tr>
<td>DFTG 2338</td>
<td>Final Project - Advanced Drafting</td>
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**TOTAL Credit Hours for Architectural Engineering Technology Specialization** | **65**

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**MECHANICAL ENGINEERING TECHNOLOGY SPECIALIZATION**

*Associate of applied science degree, Tech Prep* (specialization offered at North Harris College)

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<td>MCHN 1319</td>
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<td>DFTG 1309</td>
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<td>Humanities/Fine Arts</td>
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<td>DFTG 2302</td>
<td>Machine Drafting</td>
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<tr>
<td>PHYS 1401</td>
<td>General Physics I</td>
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<td>DFTG 2358</td>
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<td>QCTC 1303</td>
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<td>Social/Behavioral Science</td>
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<td>DFTG 2336</td>
<td>CAD Programming OR</td>
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<td>INMT 1311</td>
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</table>

**TOTAL Credit Hours for Mechanical Engineering Technology Specialization** | **63**

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1 See college catalog for Associate of applied science degree graduation requirements for a listing of electives. Select...
course from either of these areas to meet multicultural requirement.

IEIR 1310 and DFTG 2336 are intended for students wanting to focus on being mechanical designers, but may or may not be within a production manufacturing environment.

QCTC 1303 and INMT 1311 are intended for students wanting to focus their employment within a production and manufacturing environment.

Capstone course

PRE-ENGINEERED METAL BUILDING DRAFTING & DESIGN SPECIALIZATION

Associate of applied science degree, Tech Prep
(specialization offered at Cy-Fair College and North Harris College)

FIRST YEAR

First Semester

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credit</th>
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<tbody>
<tr>
<td>ENGL 1301</td>
<td>Composition &amp; Rhetoric I</td>
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<tr>
<td>CNBT 1311</td>
<td>Construction Methods &amp; Materials I</td>
<td>3</td>
</tr>
<tr>
<td>DFTG 1305</td>
<td>Technical Drafting</td>
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</tr>
<tr>
<td>MATH 1314</td>
<td>College Algebra</td>
<td>3</td>
</tr>
<tr>
<td>SPCH 1318</td>
<td>Interpersonal Communication</td>
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<tr>
<td>DFTG 1309</td>
<td>Basic CAD</td>
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Second Semester

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<tr>
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<td>DFTG 2310</td>
<td>Structural Drafting</td>
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<tr>
<td>DFTG 2331</td>
<td>Adv Technologies Architectural Design and Drafting</td>
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<tr>
<td>DFTG 2319</td>
<td>Interim. Computer-Aided Drafting</td>
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<td>ENGL 2311</td>
<td>Technical Communications OR</td>
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<tr>
<td>ENGL 1302</td>
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SECOND YEAR

First Semester

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<td>Architectural Drafting - Commercial</td>
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<td>ENTC 1343</td>
<td>Statics</td>
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<td>DFTG 1371</td>
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Second Semester

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<td>ENTC 2</td>
<td>Cooperative Education OR</td>
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TOTAL Credit Hours for Pre-Engineered Metal Building Drafting & Design Specialization 61

1 See college catalog for associate of applied science degree graduation requirements for a listing of electives. Select course from either of these areas to meet multicultural requirement

2 Capstone course

ELECTRONICS TECHNOLOGY

If you are interested in an exciting and rewarding career where people and technology come together, engineering technology may be for you. Specialized courses in engineering technology emphasize application more than theoretical development. The program provides classroom studies with hands-on, high-tech laboratories. The student will use the tools of mathematics, science and telecommunications, as well as the calculator, computer, telecommunication networks and other laboratory equipment.

Engineering Technologists fill entry-level positions in industry, which include: circuit diagnostics, laboratory and field-testing, manufacturing and assembly, quality assurance, technical sales, field service and certification of new installation projects. They are involved with all products and systems of industry, including radios, radars, computers, network/wireless telecommunications applications and security systems, robots, audio and video systems, automotive electronics, medical instruments and navigation systems.

Offered specializations provide our students the opportunity for employment in some of the following job functions:

- Service Shop Technician
- Industrial Manufacturing Technician
- Laboratory Technician
- Field Service Technician
- Wireless Telecommunication Technician
- Engineering Assistant/Associate Engineer
- Technical Writer
- Technical Sales

The core courses will transfer to a variety of colleges and universities. Contact a counselor or faculty adviser for specific information. All programs address employment in fields identified as “emerging occupations” by the Texas State
Occupational Information coordinating committee and identified as targeted occupations by TechForce 2000 for the Gulf Coast region. A targeted occupation is one which has a minimum of 1,000 job openings each year and meets an above average hourly wage rate.

**Basic Electronics Certificate**

*(offered at Cy-Fair College and North Harris College)*

**FIRST YEAR**

First Semester  
ITSC 1401 Introduction to Computers OR COSC 1401 Microcomputer Applications  
**SEMMESTER TOTAL** 4

Second Semester  
CETT 1403 DC Circuits  
MATH 1314 College Algebra  
CETT 1405 AC Circuits  
**SEMMESTER TOTAL** 11

Third Semester  
CETT 1425 Digital Fundamentals  
CETT 1429 Solid State Devices OR Elective  
**SEMMESTER TOTAL** 8

**TOTAL Credit Hours for Basic Electronics Certificate** 23

1. Capstone course
2. Approved electives include any CETT, CPMT, EECT, or ITCC course.

**COMPUTER ENGINEERING TECHNOLOGY SPECIALIZATION**

**Associate of applied science degree, Tech Prep**

*(specialization offered at Cy-Fair College, North Harris College, and Kingwood College)*

**PREREQUISITE**

**First Semester**  
ITSC 1401 Introduction to Computers OR COSC 1401 Microcomputer Applications OR CPMT 1403 Introduction to Computer Technology  
**PREREQUISITE TOTAL** 4

**SECOND YEAR**

First Semester  
CETT 1429 Solid State Devices  
CETT 1445 Microprocessor  
CPMT 1445 Computer Systems Maintenance  
MATH 1316 Trigonometry  
**SEMMESTER TOTAL** 15

Second Semester  
ITSY 1442 Information Technology Security  
CPMT 2433 Computer Integration  
Elective  
ENGL 1301 Composition & Rhetoric I  
**SEMMESTER TOTAL** 11-12

**TOTAL Credit Hours for Computer Engineering Technology Specialization** 65-66

1. To meet multicultural requirement, choose either SOCI 1301 or any foreign language
2. Choose technical elective from CPMT 1449; EECT 2439; ELMT 2433; CPMT 1449; or departmental approval
3. Capstone Course. Choose from CETT 2449, EECT 2380 or ELMT 2433

Note: Student must meet the multicultural requirements of the degree. See the college catalog for a complete listing of those courses that meet that requirement for the Associate of applied science degree.

**Industrial Electrical Technology Certificate**

*(certificate offered at North Harris College)*

**FIRST YEAR**

First Semester  
CETT 1409 DC/AC Circuits OR HART 1401 Basic Electricity for HVAC  
IEIR 1310 Motor Controls  
ELMT 2433 Industrial Electronics  
RBTC 1401 Programmable Controllers  
**SEMMESTER TOTAL** 15

1. Capstone course
DEGREES AND CERTIFICATES

INDUSTRIAL CONTROLS TECHNOLOGY
SPECIALIZATION

Associate of applied science degree, Tech Prep
(specialization offered at North Harris College)

FIRST YEAR

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<tr>
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<th>Course Name</th>
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<td>CPMT 1403</td>
<td>Intro to Computer Technology</td>
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<td>DFTG 1309</td>
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<td>ENGL 1301</td>
<td>Composition &amp; Rhetoric I</td>
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<td>MATH 1314</td>
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SECOND YEAR

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<td>Social/Behavioral Sciences</td>
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</table>

TOTAL Credit Hours for Industrial Controls Technology Specialization 63-64

¹ Student must meet the multicultural requirements of the degree. See the NHMCCD catalog for a complete listing.
² CETT 2449; EECT 2380; or ELMT 2437 (Capstone course)

WIRELESS TELECOMMUNICATIONS
ENGINEERING TECHNOLOGY
SPECIALIZATION

Associate of applied science degree, Tech Prep
(specialization offered at Tomball College)

PREREQUISITE

<table>
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FIRST YEAR

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<td></td>
<td>ITCC 1402</td>
<td>CCNA 1: Networking Basics</td>
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<td>MATH 1314</td>
<td>College Algebra</td>
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<td>SPCH 1318</td>
<td>Interpersonal Communications</td>
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<td>EECT 1440</td>
<td>Telecommunications Transmission</td>
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<td>CETT 1409</td>
<td>DC-AC Circuits</td>
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<td>EECT 2432</td>
<td>Telecommunications Switching</td>
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<td>ITNW 1451</td>
<td>Fundamentals of Wireless LANs</td>
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<td>ITNW 1492</td>
<td>Special Topics in Computer Systems Networking and Telecommunications</td>
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<td>EECT³ 2380</td>
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</table>

TOTAL Credit Hours for Wireless Telecommunications Engineering Technology Specialization 67

¹ To meet multicultural requirement, choose any course listed as meeting the multicultural course requirement in the NHMCCD catalog and that meets the Humanities/Fine Arts elective.
Choose from core social/behavioral science electives in catalog.

3 Capstone course is EECT 2380 or Technical Elective

4 Any advanced course from CPMT, EECT, ITCC, or ITNW with departmental approval.

Note: Student must meet the multicultural requirement of the degree. See the NHMCCD catalog for a complete listing.

WIRELESS TELECOMMUNICATIONS TECHNICIAN CERTIFICATE
(specialization offered at Tomball College)

PREREQUISITE
Prerequisite Credit
ITSC 1401 Introduction to Computers OR 4
COSC 1401 Microcomputer Applications
PREREQUISITE TOTAL 4

FIRST YEAR
First Semester Credit
CETT 1409 DC-AC Circuits 4
ITCC 1402 CCNA 1: Networking Basics 4
EECT 1403 Intro to Telecommunications 4
POFT 1301 Business English OR 3
ENGL 1301 Composition & Rhetoric I 3
TECM 1303 Technical Mathematics OR 3
MATH 1314 College Algebra
SEMMESTER TOTAL 18

Second Semester Credit
CETT 1402 Electricity Principles 4
ITCC 1406 CCNA 2: Router and Routing Basics 4
EECT 1440 Telecommunications Transmission Media 4
EECT 2430 Telecommunications Switching 4
SEMMESTER TOTAL 16

Third Semester Credit
EECT 2432 Telecommunications Signaling 4
ITNW 1451 Fundamentals of Wireless LANs 4
ITCC 1409 Voice and Data Cabling 4
SEMMESTER TOTAL 12

TOTAL Credit Hours for Wireless Telecommunications Technician Certificate 50

FIRE SCIENCE TECHNOLOGY
The associate of applied science degree in fire science technology is designed to prepare graduates for employment in the fire service field. The program is also designed to provide opportunities for job advancement for currently employed fire fighters. The Structural Firefighting certificate is for students wanting to pursue job opportunities as fire fighters. Interested students should contact Fire Science Technology faculty for information regarding application and admission to the program.

BASIC STRUCTURAL FIREFIGHTER CERTIFICATE
(certificate offered at Cy-Fair College)

FIRST YEAR
First Semester Credit
FIRS 1301 Firefighter Certification I 3
FIRS 1407 Firefighter Certification II 4
FIRS 1313 Firefighter Certification III 3
FIRS 1319 Firefighter Certification IV 3
FIRT 1171 Firefighter Agility & Fitness Prep 1
SEMMESTER TOTAL 14

Second Semester Credit
FIRT Elective OR 3-5
EMSP 1501 Emergency Medical Technician Basic 1-3
EMSP 1160 Clinical - Basic EMT 1
FIRT 2171 Firefighter Agility & Fitness Prep II 1
FIRS 1423 Fire Certification V 4
FIRS 1329 Fire Certification VI 3
FIRS 1433 Fire Certification VII 4
SEMMESTER TOTAL 18

TOTAL Credit Hours for Basic Structural Fire Fighter Certificate 32

1 Courses must be taken as corequisites.

2 Capstone course

FIRE SCIENCE TECHNOLOGY
Associate of applied science degree
(degree offered at Cy-Fair College)

FIRST YEAR
First Semester Credit
FIRS 1301 Firefighter Certification I 3
DEGREES AND CERTIFICATES

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<tr>
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<td>FIRS 1407</td>
<td>Firefighter Certification II</td>
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<td>FIRS 1313</td>
<td>Basic Firefighter Certification III</td>
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<td>FIRS 1319</td>
<td>Firefighter Certification IV</td>
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<td>FIRT 1171</td>
<td>Firefighter Agility &amp; Fitness Prep</td>
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<td>EMSP</td>
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<td>Math /Science</td>
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<td>Intro to Computers OR</td>
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<td>COSC 1401</td>
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SECOND YEAR

First Semester Credit

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<tr>
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<td>FIRT</td>
<td>1319 Firefighter Health and Safety</td>
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<td>Elective2</td>
<td>Humanities/Fine Arts</td>
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<td>FIRT4</td>
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TOTAL Credit Hours for AAS Degree 71-72

1 Courses must be taken as corequisites.
2 One course must meet multicultural requirement.
3 Select from FIRT 1303, 1305, 1307, 1331, 1338, 1355, or 2333.
4 Capstone course
* Students must meet Math competency

GEOGRAPHIC INFORMATION SYSTEMS

The geographic information systems (GIS) certificates and degree program prepare graduates for wide ranging career possibilities as entry-level technicians to data analysts and project managers in diverse fields of GIS application. From data collection and input, to management and analysis, to project completion and information delivery, individuals will develop the skills to work at many levels of business, industry, government agencies and research and development.

The GIS technician certificate is awarded for completion of 23 credit hours of course work, focused on the development of the skills to be proficient in GIS software applications and data management. The GIS analyst certificate is awarded for completion of 34-35 credit hours of course work and provides graduates additional skills to develop and analyze data and prepare projects for delivery to clients. The associate of applied science degree for GIS is awarded for the completion of 63-64 credit hours of course work and cooperative work experience. Graduates will have the essential skills to manage the initiation, development and completion of GIS projects requiring data collection, data management, analysis, map product development and final report writing for presentation.

Employment opportunities are far reaching at the present time. The increasing use of GIS in nearly every field of education, business and government is creating a strong need for skilled personnel.

The general education core will transfer to a variety of colleges and universities. Contact counselors or geology faculty for specific information or to obtain the recommended sequencing of courses. The information can be found at: www.nhmccd.edu/catalog/
CHAPTER 10

GEOGRAPHIC INFORMATION SYSTEMS

TECHNICIAN CERTIFICATE

(certificate offered at Cy-Fair College and North Harris College)

FIRST YEAR

First Semester

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<thead>
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<th>Course</th>
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<td>ITSC 1401</td>
<td>Introduction to Computers</td>
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<tr>
<td>CRTG 1411</td>
<td>Introduction to Geographic Information Systems (GIS)</td>
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<tr>
<td>MATH 1314</td>
<td>College Algebra OR</td>
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<td>TECM 1303</td>
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**SEMESTER TOTAL** 11

Second Semester

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<td>CRTG 1421</td>
<td>Intro to Raster-Based GIS</td>
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<tr>
<td>ITC 1407</td>
<td>Introduction to Databases</td>
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**SEMESTER TOTAL** 12

TOTAL Credit Hours for Geographic Information Systems Technician Certificate 23

1 MATH 1314 is required for the Analyst Certificate and the AAS Degree

GEOGRAPHIC INFORMATION SYSTEMS

ANALYST CERTIFICATE

(certificate offered at Cy-Fair College and North Harris College)

FIRST YEAR

First Semester

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<td>Introduction to Geographic Information Systems (GIS)</td>
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<tr>
<td>DFTG 1305</td>
<td>Technical Drafting</td>
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<td>ENGL 1301</td>
<td>Principles of Geography</td>
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**SEMESTER TOTAL** 17

Second Semester

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<td>Intro to Raster-Based GIS</td>
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<td>DFTG 1309</td>
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**SEMESTER TOTAL** 17

SECOND YEAR

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<td>SPCH 1315</td>
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**SEMESTER TOTAL** 15

Second Semester

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<td>CRTG 2411</td>
<td>Geographic Information Systems (GIS)</td>
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<tr>
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**SEMESTER TOTAL** 14-15

TOTAL Credit Hours for AAS Degree 63-64

1 Select course to meet multicultural requirement
2 Capstone course
3 Choose one track for electives. Track 1 - Programming electives include ITSE 1402 and ITSE 1431. Track 2 - Database electives include ITC 1407 and ITC 2437. Track 3 - CRTG 2464.
**HEALTH INFORMATION TECHNOLOGY**

The Health Information Technology (HIT), tech prep associate of applied science degree is designed to prepare graduates for entry level employment as health information technicians. The Associate of Applied Science degree program and the Hospital-Based Coding certificate are currently accredited by the Commission on Accreditation of Allied Health Educational Programs (CAAHEP) in cooperation with the Council on Accreditation of the American Health Information Management Association (AHIMA). Program accreditation allows AAS degree graduates to apply for certification examination to become Registered Health Information Technicians (RHIT).

Registered health information technicians perform technical medical record functions vital to the operation of the organization, including analyzing, coding, and health record evaluation. Registered health information technicians process, maintain, complete and report health information data for reimbursement, facility planning, marketing, risk management, utilization management, quality assessment and research. Graduates may be employed in a variety of settings including hospitals, health maintenance organizations, and other health care facilities.

The general education core will transfer to a variety of colleges and universities. Contact a counselor or faculty member at any of the colleges/universities for specific information and to obtain the recommended sequencing of courses. The sequence of courses can also be found at [www.nhmccd.edu/catalog/](http://www.nhmccd.edu/catalog/).

**Admission Criteria for AAS degree:**
In order to be considered for admission to the HIT program, students must pass the college’s Student Success Initiative requirements and THEA test. Students must submit an application that can be found on the college’s website under the HIT department. Prospective students may download the form and mail or bring to the departmental office in WNSP-174i. Applications are due **July 30** for Fall entry into the program. Students wishing to begin the program at any other time besides the Fall may take some of the support classes or prerequisites for the program such as ITSC 1401 Introduction to Computers or HITT 1305 Medical Terminology. Students who are exempt from the THEA test must take the ASSET or COMPASS test and receive college-level placement in reading, writing, and completion of MATH 0306 or higher.

Applicants seeking admission into the Health Information Technology AAS degree Program and Coding Certificate Program must successfully pass a criminal background check and drug screen when required by clinical affiliates. Information on approved vendors will be provided by the program director. Applicants must bear the cost of the background check.

**Admission Criteria for the Hospital-Based Coding or the Physician Office-Based Certificate:**
Admission to either coding certificate program requires completion of an application found on the North Harris College website. Applications are due **July 30** for Fall entry. Admission requires the following:

1. college-level reading and writing readiness skill;
2. completion of ENGL 0305 & ENGL 0307 or higher;
3. completion of MATH 0306 or higher.

A certificate in hospital-based medical coding prepares the technician to assign a code to a medical diagnosis or procedures. Medical coders consult classification manuals and rely on their knowledge of disease processes to assign codes. After completion of the certificate, graduates are eligible to sit for a national certification exam administered by AHIMA and become certified as a Certified Coding Associate. The coding certificate program begins in the Fall semester. Students wishing to begin the certificate program at any other time besides the Fall may take some of the core classes or prerequisites for the program.

The physician-based coding certificate prepares the technician to work in ambulatory settings.
such as clinics and doctors’ offices. Also known as billing and coding specialists, the medical biller is an integral part of the medical team. Their contribution is essential to running the medical office. Since most of the revenues generated by a medical office involve patient care, billing and collecting the revenue generated from patient care is one of the vital functions of the medical biller. Medical billers may also handle such things as filling out claim forms, corresponding with patient, managing office supplies, and handling minor accounting for the office. Students completing this certificate will be certified by the American Association of Professional Coders with one year’s experience.

Admission Criteria for Medical Transcription Certificate:
This certificate is a multi-entry program for Fall or Spring. Students may also take classes in this certificate during the summer. An application is required for admission to the North Harris College program and can be found on the Health Information Technology Program Web site at North Harris College. An application is not required for Kingwood, Tomball, or Montgomery Colleges. Admission requires the following:

1. college-level reading and writing readiness skills;
2. completion of ENGL 0305 & ENGL 0307 or higher;
3. completion of MATH 0306 or higher.

Medical transcriptionists listen to dictated recordings made by physicians or other healthcare professionals and transcribe those recordings into medical reports, correspondence, and other administrative material. These documents are then returned by the medical transcriptionists to the dictator for review/correction and signature. Medical transcriptionists must have a grasp of medical terminology, anatomy and physiology, diagnostic procedures, and treatment. They also must be able to translate medical jargon and abbreviations into their expanded forms. After completion of the certificate, graduates are eligible to sit for a voluntary certification exam administered by the American Association of Medical Transcriptionists.

Employment of medical transcriptionists, medical billers, and medical coders is projected to grow faster than the average for all occupations through 2010 according to the Bureau of Labor Statistics. This growth will be spurred by a growing and aging population who will receive proportionately greater numbers of health procedures that require documentation.

Students admitted to the program will be required to pay liability insurance during the semesters involving off-campus practicums or internships. At some facilities, students may be required to successfully pass a criminal background check and drug screen, as well as to show proof of immunizations such as Hepatitis B, tuberculosis, tetanus, and MMR (mumps, measles, rubella). These costs are borne by the student.

**HOSPITAL-BASED CODING CERTIFICATE**
(Certificate offered at North Harris College)

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<tr>
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<tr>
<td>HITT 1305 Medical Terminology</td>
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<td>COSC 1401 Microcomputer Applications</td>
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<td>ITSC 1401 Introduction to Computers</td>
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<td>BIOL 2402 Human Anatomy &amp; Physiology II</td>
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<td>HITT 1401 Health Data Content &amp; Structure</td>
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<td>HPRS 2301 Pathophysiology</td>
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<td>HITT 1441 Coding &amp; Classification Systems</td>
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<td>HITT 1345 Health Care Delivery Systems</td>
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<td>HITT 2435 Coding &amp; Reimbursement Methodologies</td>
<td>4</td>
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<tr>
<td>HITT 1211 Computers in Health Care</td>
<td>2</td>
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<tbody>
<tr>
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**TOTAL Credit Hours for Coding Certificate**

1 Capstone Course

129
### DEGREES AND CERTIFICATES

**PHYSICIAN OFFICE-BASED CODING CERTIFICATE**
(Certificate offered at North Harris College)

<table>
<thead>
<tr>
<th>Prerequisite Semester</th>
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<tbody>
<tr>
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<td>HPRS 2301</td>
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<td>HITT 1213</td>
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<tr>
<td>HITT 1280</td>
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</table>

**TOTAL Credit Hours for Physician Coding Certificate** 33

1 Capstone Course

### MEDICAL TRANSCRIPTION CERTIFICATE
(certificate offered at Kingwood College, North Harris College, and Tomball College)

**FIRST YEAR**

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<tbody>
<tr>
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<tr>
<td>BIOL 2404</td>
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<tr>
<td>MRMT 1307</td>
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<td>COSC 1401</td>
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<td>ITSC 1401</td>
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<td>MRMT 1266</td>
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**TOTAL Credit Hours for Medical Transcription Certificate** 33

1 Capstone Course

### HEALTH INFORMATION TECHNOLOGY
Associate of applied science degree, Tech Prep
(degree offered at North Harris College)

**FIRST YEAR**

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<tbody>
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<td>HITT 1401</td>
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<td>HITT 1353</td>
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**SECOND YEAR**

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</tr>
<tr>
<td>HITT 2343</td>
<td>3</td>
</tr>
<tr>
<td>HITT 1342</td>
<td>3</td>
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<td>HITT 2435</td>
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<td><strong>SEMESTER TOTAL</strong></td>
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</table>
HEATING, VENTILATION, AIR CONDITIONING AND REFRIGERATION

The heating ventilation, air conditioning and refrigeration associate of applied science degree prepares the individual for a technical service career in residential or light commercial/industrial environmental systems. The student will study the mechanical and electrical/electronic systems involved in contemporary environmental controls. The academic requirements of the program provides for a foundation for continued studies should the student decide to pursue his or her education or training.

The HVAC&R certificate program prepares the individual for basic, entry-level employment in the residential or light commercial heating and air-conditioning service industry. The essentials of the mechanical and electrical systems of contemporary air-conditioning and heating systems are addressed throughout the program.

The general education core will transfer to a variety of colleges and universities. Contact a counselor, or faculty member at any of the colleges for specific information and to obtain the recommended sequencing of courses.

The sequence of courses can also be found at www.nhmccd.edu/catalog/
DEGREES AND CERTIFICATES

HART 2441 Commercial Air Conditioning 4
HART 2457 Specialized Commercial Refrigeration 4

SEMESTER TOTAL 16

Third Semester Credit
HART 2434 Advanced A/C Controls 4
HART 2443 Industrial Air Conditioning 4
HART 1291 Special Topics 2

SEMESTER TOTAL 10

TOTAL Credit Hours for HVAC & R Commercial Servicing Certificate 42

NOTE: Capstone is ICE Commercial Exam.

HEATING, VENTILATION, AIR CONDITIONING AND REFRIGERATION

Associate of applied science degree, Tech Prep
(degree offered at North Harris College)

FIRST YEAR

First Semester Credit
HART 1401 Basic Electricity for HVAC 4
ENGL 1301 Composition & Rhetoric I 3
HART 1407 Refrigeration Principles 4
TECM* 1303 Technical Mathematics 3

SEMESTER TOTAL 14

Second Semester Credit
SPCH¹ Elective 3
HART 1403 Air Conditioning Control Principles 4
HART 1441 Residential Air Conditioning 4
HART 1445 Gas and Electric Heating 4

SEMESTER TOTAL 15

Third Semester Credit
HART 2445 Residential Air Conditioning Systems Design 4
HART 2431 Advanced Electricity 4

SEMESTER TOTAL 8

SECOND YEAR

First Semester Credit
CHEM 1405 Introductory Chemistry 4
Elective Social/Behavioral Science 3
HART 2442 Commercial Refrigeration 4
HART 2449 Heat Pumps 4
HART 2434 Advanced A/C Controls 4

SEMESTER TOTAL 19

Second Semester Credit
HART² 1291 Special Topics 2
HART 2380 Cooperative Education 3
HART 2436 Air Conditioning Troubleshooting 4
HART 2443 Industrial Air Conditioning 4
HUMA³ 1301 Introduction to the Humanities I 3

SEMESTER TOTAL 16

TOTAL Credit Hours for AAS Degree 72

¹ Choose from SPCH 1311, 1315, or 1321
² The capstone experience is completed by taking a departmental exit exam. It is strongly suggested to take one of the following professional exams: ARI/GAMA: Competency Exam in Residential Air Conditioning Service; ICE: Certification in Residential and Light Commercial Air Conditioning Service; or Technician Certification Exam.
³ Meets multicultural requirement.

HOSPITALITY MANAGEMENT

The Hospitality Management program provides students with an exciting opportunity to learn skills in customer service, decision-making, analysis and planning that are essential for managers and supervisors in one of the fastest growing areas of our economy: hospitality services. Employment opportunities exist for trained staff in all areas of hospitality services including hotels, restaurants, bed and breakfast lodges, country clubs, food service organizations, convention centers, resorts, and spas. The program and objectives were designed by experienced faculty and guided by leaders in successful hotel and restaurant establishments. The associate of applied science degree in hospitality services management provides opportunities for students to learn concepts and practice skills in the classroom and in the workplace.

The general education core courses will transfer to a variety of universities. Students may have earned some college credit through articulation of high school courses if they enroll within one year of graduation.

Contact a counselor or faculty member for additional information or the recommended sequence of courses.
HOSPITALITY MANAGEMENT

Associate of applied science degree
(degree offered at North Harris College)

FIRST YEAR

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<thead>
<tr>
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<th>Credit</th>
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<td>BMGT 1341</td>
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<td>ENGL 1301</td>
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<tr>
<td>HAMG 1308</td>
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<td>HRPO 1311</td>
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<td>BMGT 2303</td>
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<td>ACCT 2401</td>
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<td>COSC 1401</td>
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SECOND YEAR

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<td>HRMO 1303</td>
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<td>SPCH X3XX</td>
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<td>RSTO 1325</td>
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TOTAL Credit Hours for AAS Degree 65-69

¹ Choose from BIOL 1322, CHEM 1405, PHYS 1410 or PHIL 2303
² Choose elective from Humanities/Fine Arts
³ Choose elective from SPCH 1311, 1315, 1318, or 1321
⁴ Choose elective from Social/Behavioral Science
⁵ Choose elective from HRMO 1301, HAMG 2337, BUSG 2309, HRPO 2307, ACCT 2402, SPAN 1411, SPAN 1412

HUMAN SERVICES

The human services program provides the skills and competencies required for a variety of positions in the helping professions field. Human service workers work in a variety of settings and perform many different functions. Graduates of a program in human services are employed in group homes, halfway houses, child and youth service agencies, state welfare offices, substance abuse treatment centers, and a number of other social service agencies. Through an interdisciplinary approach, human service workers focus on the prevention and remediation of problems facing individuals and families. Human service workers should have a strong desire to help others, good communication skills, and be very responsible.

All course work required for licensing as a chemical dependency counselor, as well as the supervised practicum training, is provided.

At some facilities, students may be required to successfully pass a background check and drug screen.

For transfer into two specific four-year college programs that lead to the baccalaureate, masters, and doctorate degrees, see program faculty or counselor for more information. Associate degree level positions are available in the field and include such jobs as eligibility worker, child abuse case aide, and a variety of other mental health, mental retardation, and social services positions. By consulting with program faculty and staff, an individualized program including academics, supervision, networking, and professional activities can be developed to meet the desires and career aspirations of each individual student.

Through the prior learning assessment program, students holding a current licensed chemical dependency counselor’s license who are in good standing with the licensing board would be eligible to receive credit for the following courses: DAAC 1304, 1309, 1317, 1319, 1341 and 2360.
DEGREES AND CERTIFICATES

The general education core will transfer to a variety of colleges and universities. Contact a counselor, or faculty member at any of the colleges for specific information and to obtain the recommended sequencing of courses. The sequence of courses can also be found at: www.nhmccd.edu/catalog/.

HUMAN SERVICES CERTIFICATE
(certificate offered at Montgomery College and Tomball College)

FIRST YEAR

First Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit</th>
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<tbody>
<tr>
<td>CMSW 1301 Intro to Social Services</td>
<td>3</td>
</tr>
<tr>
<td>DAAC 1304 Pharmacology of Addiction</td>
<td>3</td>
</tr>
<tr>
<td>DAAC 1314 Dynamics of Group Counseling</td>
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</tr>
<tr>
<td>DAAC 1317 Basic Counseling Skills</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 2301 General Psychology</td>
<td>3</td>
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Second Semester

<table>
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<tr>
<th>Course</th>
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<tbody>
<tr>
<td>CMSW 1341 Behavior Modification &amp; Cognitive Disorder</td>
<td>3</td>
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<tr>
<td>DAAC 1311 Counseling Theories</td>
<td>3</td>
</tr>
<tr>
<td>DAAC 2360 Oral OR Clinical</td>
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<td>SCWK 2386 Internship</td>
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<td>Elective Technical</td>
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<td>PSYC 2308 Child Growth &amp; Development OR</td>
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<tr>
<td>PSYC 2314 Life-Span Growth &amp; Development</td>
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<td><strong>TOTAL</strong></td>
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TOTAL Credit Hours for Human Services Certificate **30**

1. Elective to be chosen from CMSW, DAAC or GERS
2. Capstone course
3. Students may also take DAAC 2160 and DAAC 2260 to fulfill the field placement requirement, as long as three (3) credit hours are obtained in total.
4. Students may also take SCWK 2186 and SCWK 2286 to fulfill the field placement requirement, as long as three (3) credit hours are obtained in total.

ADVANCED CHEMICAL Dependency Counselor CERTIFICATE
(certificate offered at Montgomery College and Tomball College)

FIRST YEAR

First Semester

<table>
<thead>
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<th>Course</th>
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<tbody>
<tr>
<td>CMSW 1301 Intro to Social Services</td>
<td>3</td>
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<tr>
<td>DAAC 1304 Pharmacology</td>
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<td>DAAC 1314 Dynamics of Group Counseling</td>
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<td>DAAC 1317 Basic Counseling Skills</td>
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<tr>
<td>DAAC 1319 Intro to Alcohol &amp; Other Drug Addictions</td>
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Second Semester

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<tr>
<td>CMSW 1341 Behavior Modification &amp; Cognitive Disorder</td>
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<td>CMSW 1345 Abnormal Behavior</td>
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<td>CMSW 1353 Family Intervention Strategies</td>
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TOTAL Credit Hours for Chemical Dependency Counselor Certificate **36**

1. Capstone course

BASIC CHEMICAL Dependency Counselor CERTIFICATE
(certificate offered at Montgomery College and Tomball College)

FIRST YEAR

First Semester

<table>
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<tr>
<td>CMSW 1301 Intro to Social Services</td>
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<tr>
<td>DAAC 1314 Dynamics of Group Counseling</td>
<td>3</td>
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<tr>
<td>DAAC 1317 Basic Counseling Skills</td>
<td>3</td>
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<tr>
<td>DAAC 1304 Pharmacology</td>
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Second Semester

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<tbody>
<tr>
<td>DAAC 1311 Counseling Theories</td>
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<tr>
<td>DAAC 1341 Counseling Alcohol and Other Drug Addictions</td>
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</tr>
<tr>
<td>DAAC 2360 Clinical/Field Placement</td>
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TOTAL Credit Hours for Chemical Dependency Counselor Certificate **21**

Note: Capstone experience is completed by a departmental exam.

1. Students may also take DAAC 2160 and DAAC 2260 to fulfill the field placement requirement, as long as three (3) credit hours are obtained in total.
HUMAN SERVICES

Associate of applied science degree
(degree offered at Montgomery College and Tomball College)

FIRST YEAR

First Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit</th>
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<tbody>
<tr>
<td>CMSW 1301 Intro to Social Services</td>
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<tr>
<td>DAAC 1317 Basic Counseling Skills</td>
<td>3</td>
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<tr>
<td>ENGL 1301 Composition and Rhetoric I</td>
<td>3</td>
</tr>
<tr>
<td>ITSC 1401 Introduction to Computers</td>
<td>4</td>
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<tr>
<td>PSYC 2301 General Psychology</td>
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Second Semester

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<tr>
<td>CMSW 1345 Abnormal Behavior</td>
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<td>DAAC Elective OR</td>
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<tr>
<td>CMSW Elective</td>
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<tr>
<td>DAAC 1311 Counseling Theories</td>
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<tr>
<td>ENGL 1302 Composition and Rhetoric II</td>
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<tr>
<td>SOCI 1301 Principles of Sociology</td>
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<tr>
<td>KINE Physical Activity</td>
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SECOND YEAR

First Semester

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<thead>
<tr>
<th>Course</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>GOVT 2301 American Government</td>
<td>3</td>
</tr>
<tr>
<td>DAAC Elective OR</td>
<td>3</td>
</tr>
<tr>
<td>CMSW Elective</td>
<td>3</td>
</tr>
<tr>
<td>DAAC 1314 Dynamics of Group Counseling</td>
<td>3</td>
</tr>
<tr>
<td>DAAC 2360 Clinical OR</td>
<td>3</td>
</tr>
<tr>
<td>SCWK 2386 Internship</td>
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</tr>
<tr>
<td>Elective Academic</td>
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Second Semester

<table>
<thead>
<tr>
<th>Course</th>
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</thead>
<tbody>
<tr>
<td>DAAC 2360 Clinical OR</td>
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</tr>
<tr>
<td>SCWK 2386 Internship</td>
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</tr>
<tr>
<td>Elective Technical</td>
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</tr>
<tr>
<td>Elective Technical</td>
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</tr>
<tr>
<td>Elective Math/Natural Science</td>
<td>3-4</td>
</tr>
<tr>
<td>KINE Physical Activity</td>
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<tr>
<td>SPCH Elective</td>
<td>3</td>
</tr>
<tr>
<td><strong>SEMIESTER TOTAL</strong></td>
<td><strong>16-17</strong></td>
</tr>
</tbody>
</table>

TOTAL Credit Hours for AAS Degree 63-64

1 Elective courses will vary according to a student's particular degree emphasis. See faculty for assistance in determining what electives will work best for you.

2 Students should consult their prospective senior institution's catalog for science, math, and speech requirements.

3 Electives chosen from DAAC, CMSW, or GERS

4 Capstone course

5 Meets multicultural requirement

6 Students may also take DAAC 2160 and DAAC 2260 to fulfill the field placement requirement, as long as three (3) credit hours are obtained in total.

7 Students may also take SCWK 2186 and SCWK 2286 to fulfill the field placement requirement, as long as three (3) credit hours are obtained in total.

8 Choose from SPCH 1311, 1315, 1318 or 1321.

* Students must meet Math competency

INDUSTRIAL MAINTENANCE

The program of Industrial Maintenance Technology (IMT) prepares students to enter several technology-driven fields. From manufacturing to food & beverage processing, the skills of preventive maintenance, troubleshooting, and repair will continue to be in high demand. The IMT program provides training in the areas of fluid power (hydraulics & pneumatics), basic electronics and instrumentation, machining, programmable logic control (PLC), motor control, and automation. Students pursuing an Associate of Applied Science (AAS) degree in IMT choose an area of specialization: electrical, welding, or hydraulics. The AAS in IMT allows students to become employable as an Industrial Maintenance Technician, Field Service Technician, or similar position. The one-year Certificate in IMT covers several of the technical courses which are the foundation of the AAS degree. Students pursuing the Certificate in IMT become employable as Industrial/Manufacturing Operators, Equipment Operators, or similar position.

The general education core courses will transfer to a variety of colleges and universities. Several technical courses may transfer to technology-based bachelor degree programs. Contact an academic adviser for more details on the transferability of specific courses.
DEGREES AND CERTIFICATES

INDUSTRIAL MAINTENANCE TECHNOLOGY CERTIFICATE
(certified offered at Cy-Fair College)

FIRST YEAR
First Semester  Credit
MCHN 1358 Intermediate Lathe Operations 3
TECM 1303 Technical Math OR 3
MATH 1314 College Algebra 3
HYDR 1305 Basic Hydraulics 3
WLDG 1413 Introduction to Blueprint Reading for Welders 4
MCHN 2305 Millwright III 3
SEMESTER TOTAL 16

Second Semester  Credit
CETT 1409 DC-AC Circuits 4
HYDR 1315 Basic Fluid Power (Pneumatics) 3
WLDG 1421 Intro to Welding Fundamentals 4
COSC 1401 Microcomputer Application 4
INMT 2345 Industrial Troubleshooting 3
SEMESTER TOTAL 18

TOTAL Credit Hours for Industrial Maintenance Technology Certificate 34

Industrial Maintenance Technology
Associate of applied science degree
(degree offered at Cy-Fair College)

FIRST YEAR
First Semester  Credit
MCHN 1358 Intermediate Lathe Operations 3
MATH 1314 College Algebra 3
HYDR 1305 Basic Hydraulics 3
WLDG 1413 Introduction to Blueprint Reading for Welders 4
MCHN 2305 Millwright III 3
SEMESTER TOTAL 16

Second Semester  Credit
ENGL 1301 Composition and Rhetoric 3
CETT 1409 DC-AC Circuits 4
HYDR 1315 Basic Fluid Power (Pneumatics) 3
WLDG 1421 Intro to Welding Fundamentals 4
COSC 1401 Microcomputer Application 4
SEMESTER TOTAL 18

SECOND YEAR
First Semester  Credit
INMT 2301 Machinery Installation 3

SEMESTER TOTAL 16-17

TOTAL Credit Hours for Industrial Maintenance Technology AAS 64-67

1 Humanities Elective: Select one course from the core requirements that meets the multicultural requirement.
2 Technical Elective (select two courses from one of the following tracks, the third technical elective may come from the same track or one of the other tracks)
   Welding: WLDG 1430, 1434, 1428, 2447, 2451, 1457;
   Electrical: INTC 1307, ELPT 1445, INTC 1422;
   Mechanical: HYDR 1309, 1345, 1315.
3 Capstone experience
   Safety is integrated throughout all courses; student needs to lift up to 150 pounds and be able to read basic tools such as using a tape measure and ruler.

INTERIOR DESIGN TECHNOLOGY

A comprehensive curriculum leads to a two-year associate of applied science degree. Students interested in a less comprehensive program should consider the one-year Home Decorating Certificate program.

The interior design associate of applied science degree program covers both classroom instruction and hands-on experience dealing with typical residential and commercial design problems. The well-stocked labs are equipped with computers, drafting tables, a blue-line machine, and a comprehensive resource library containing catalogues and samples for student projects. All courses in the Interior Design curriculum have been fully endorsed by the National Kitchen and Bath Association.
The internship program allows students to work with prominent designers throughout the greater Houston area. The program has a very active student chapter of ASID (American Society of Interior Designers), which works closely with the professional ASID membership.

The general education core will transfer to a variety of colleges and universities. Contact a counselor, or faculty member at any of the colleges for specific information and to obtain the recommended sequencing of courses. The sequence of courses can also be found at: www.nhmccd.edu/catalog/

### Home Decorating Certificate
*(certificate offered at Kingwood College)*

**FIRST YEAR**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARTS 1311 Elective - General Education</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 1301 Composition &amp; Rhetoric I</td>
<td>3</td>
</tr>
<tr>
<td>IND 1319 Technical Drawing/Interior Design</td>
<td>3</td>
</tr>
<tr>
<td>IND 1351 History of Interiors I</td>
<td>3</td>
</tr>
<tr>
<td>IND 2307 Textiles for Interior Design</td>
<td>3</td>
</tr>
</tbody>
</table>

**Second Semester**

<table>
<thead>
<tr>
<th>Credit</th>
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<tbody>
<tr>
<td></td>
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</tbody>
</table>

**TOTAL Credit Hours for Home Decorating Certificate** 30

1 Capstone course

### INTERIOR DESIGN TECHNOLOGY
*Associate of applied science degree*
*(degree offered at Kingwood College)*

**FIRST YEAR**

<table>
<thead>
<tr>
<th>First Semester</th>
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<tbody>
<tr>
<td>ARTS 1316 Drawing I</td>
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<tr>
<td>ENGL 1301 Composition &amp; Rhetoric I</td>
<td>3</td>
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<tr>
<td>IND 1311 Fundamentals of Interior Design</td>
<td>3</td>
</tr>
<tr>
<td>IND 1319 Technical Drawing for Interior Designers</td>
<td>3</td>
</tr>
<tr>
<td>IND 2307 Textiles for Interior Design</td>
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</table>

**SECOND YEAR**

<table>
<thead>
<tr>
<th>Credit</th>
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</tbody>
</table>

**TOTAL Credit Hours for Interior Design AAS** 64

1 MATH 1314, 1316, 1324, 1325, 1332, 1342, 1350, 1351, 2320, 2412, 2413, 2414, or 2415.
2 For IND 2305 in third and fourth semesters, choose from IND 1345, 1371, 1372, or 2313; cannot choose same course twice
3 Meets Multicultural requirement
4 Capstone course

### FACILITIES MANAGEMENT
*Associate of applied science degree*
*(degree offered at Kingwood College)*

**FIRST YEAR**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 1314 College Algebra</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 1301 Composition &amp; Rhetoric I</td>
<td>3</td>
</tr>
<tr>
<td>IND 1311 Fundamentals of Interior Design</td>
<td>3</td>
</tr>
<tr>
<td>IND 1319 Tech. Drawing for Interior Designers</td>
<td>3</td>
</tr>
<tr>
<td>KINE Physical Activity</td>
<td>1</td>
</tr>
<tr>
<td>ITSC 1401 Introduction to Computers OR</td>
<td>4</td>
</tr>
<tr>
<td>COSC 1401 Microcomputer Applications</td>
<td>4</td>
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</table>

**SECOND YEAR**

<table>
<thead>
<tr>
<th>Credit</th>
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<tbody>
<tr>
<td></td>
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</tr>
</tbody>
</table>

**TOTAL Credit Hours for Interior Design AAS** 64
**DEGREES AND CERTIFICATES**

**SECOND YEAR**

**First Semester**
- **ENGL 2311** Technical Communications 3
- **BUSI 2301** Business Law I 3
- Elective 3-4
- **BMGT 1309** Information & Project Management 3
- **INDS 1345** Commercial Design I 3
- **INDS 2486** Internship - Interior Design 4

**Semester Total** 19-20

**Total Credit Hours for Facilities Mgmt AAS** 69-70

1. Must meet Multicultural requirement
2. Choose elective from ARTS 2356, INDS 1372, INDS 2311, CRJ 1301, CETT 1402, MRKG 1301, HART 1401, BUSI 2302, ITCC 1409
3. Capstone course

**ASL COMMUNICATIONS SKILLS CERTIFICATE**

*(certificate offered at Cy-Fair College and North Harris College)*

**First Year**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 1301</td>
<td>3</td>
</tr>
<tr>
<td>SGNL 1401</td>
<td>4</td>
</tr>
<tr>
<td>SLNG 1215</td>
<td>2</td>
</tr>
<tr>
<td>SLNG 1317</td>
<td>3</td>
</tr>
</tbody>
</table>

**Semester Total** 12

**Total Credit Hours for ASL Communications Skills Certificate** 21

1. Capstone course

**INTERPRETER TRAINING TECHNOLOGY**

The Interpreter Training Technology Associate of Applied Science Degree, Tech Prep program prepares graduates for entry-level careers as American Sign Language/English Interpreters. The Interpreter Training Technology program will provide graduates with a strong academic and technical foundation designed to prepare them for state certification.

The Interpreter Training Technology Associate of Applied Science Degree, Tech Prep program requires the completion of 66-67 semester credit hours of coursework including 29-30 semester credit hours of general academic courses and 37 semester credit hours of technical coursework. The program includes a supervised internship as a capstone external learning experience and integrates all instructional components of the program.

Students may also earn an ASL Communications Skills Certificate. This two-semester program concentrates on developing skills that are required for simple communication with ASL speakers. It is not intended to prepare students to perform as interpreters. Students who desire those skills should complete the two-year program.

The general education core will transfer to a variety of colleges and universities. Contact a counselor, or faculty member at any of the colleges for specific information and to obtain the recommended sequencing of courses. The sequence of courses can also be found at: www.nhmccd.edu/catalog/.

**INTERPRETER TRAINING TECHNOLOGY**

*Associate of applied science degree, Tech Prep*

*(degree offered at Cy-Fair College and North Harris College)*

**First Year**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elective 1</td>
<td>3</td>
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</tbody>
</table>

**ASL COMMUNICATIONS SKILLS CERTIFICATE**

*(certificate offered at Cy-Fair College and North Harris College)*

**First Year**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit</th>
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</thead>
<tbody>
<tr>
<td>ENGL 1301</td>
<td>3</td>
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<tr>
<td>SGNL 1401</td>
<td>4</td>
</tr>
<tr>
<td>SLNG 1211</td>
<td>2</td>
</tr>
<tr>
<td>SLNG 1347</td>
<td>3</td>
</tr>
</tbody>
</table>

**Semester Total** 9

**Total Credit Hours for ASL Communications Skills Certificate** 21

1. Capstone course
DEGREES AND CERTIFICATES

LOGISTICS MANAGEMENT

Logistics management is a unique business management program that prepares graduates for employment in the areas of logistics management, inventory control, materials management, and distribution. The field of logistics management includes occupations such as supervisors and/or managers of transportation, storage, and/or distribution; helpers, laborers, and/or hand material movers; and transportation/machine and vehicle material movers.

Persons employed in the storage and distribution arena plan, direct, and coordinate the storage and distribution operations within an organization. With the aid of industry-specific software, many managers are able to more efficiently prepare and review invoices, work orders, and consumption reports. Similarly, shipping and transportation managers utilize resource planning software systems to improve the speed and efficiency of shipping and receiving. These managers supervise and coordinate the activities of transportation and material moving machines and vehicle operators.

The AAS degree in logistics management is a four-semester program consisting of courses from the core academic area, business management, and logistics management. The degree program is located at Cy-Fair College. Kingwood College and Cy-Fair College offers the first line logistics leader certificate as a one-semester program of five courses.

FIRST LINE LOGISTICS LEADER CERTIFICATE

(certificate offered at Cy-Fair College and Kingwood College)

FIRST YEAR

First Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit</th>
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</thead>
<tbody>
<tr>
<td>LMGT 1425</td>
<td>Warehouse &amp; Distrib Ctr Mgmt.</td>
<td>4</td>
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<tr>
<td>LMGT 1319</td>
<td>Intro to Business Logistics</td>
<td>3</td>
</tr>
<tr>
<td>LMGT 1321</td>
<td>Intro to Materials Handling</td>
<td>3</td>
</tr>
<tr>
<td>BMGT 1301</td>
<td>Supervision</td>
<td>3</td>
</tr>
<tr>
<td>BMGT 2303</td>
<td>Problem Solving &amp; Decision Making</td>
<td>3</td>
</tr>
</tbody>
</table>

SEMESTER TOTAL 16

TOTAL Credit Hours for First Line Logistics Leader Certificate 16

1 Capstone course

LOGISTICS MANAGEMENT

Associate of applied science degree, Tech Prep

(AAS degree offered at Cy-Fair College)

FIRST YEAR

First Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 1301</td>
<td>Composition &amp; Rhetoric I</td>
<td>3</td>
</tr>
<tr>
<td>TECM 1303</td>
<td>Technical Mathematics</td>
<td>3</td>
</tr>
<tr>
<td>LMGT 1319</td>
<td>Intro to Business Logistics</td>
<td>3</td>
</tr>
</tbody>
</table>

TOTAL Credit Hours for First Line Logistics Leader Certificate 16

1 Capstone course
DEGREES AND CERTIFICATES

LMGT 1321 Intro to Materials Handling 3
ITSC 1401 Introduction to Computers 4

SEMESTER TOTAL 16

Second Semester
LMGT 1425 Warehouse & Distrib Ctr Mgmt 4
LMGT 1345 Economics of Trans. & Distrib. 3
Elective Math/Science Elective 3-4
GEOG 1303 World Geography 3
KINE  Physical Activity 1

SEMESTER TOTAL 14-15

SECOND YEAR

First Semester Credit
BMGT 1301 Supervision 3
LMGT 2434 Principles of Traffic Management 4
LMGT 1323 Domestic and Internat’l Trans 3
SPCH  Elective 3
BMGT 2303 Problem Solving & Decision Making 3

SEMESTER TOTAL 16

Second Semester
BMGT 1309 Information & Project Mgmt. 3
LMGT 1393 Special Topics in Log/Mat. Mgmt. 3
BMGT 2382 Co-op: Business Admin. & Mgmt. I 3
Elective Humanities/Fine Arts 3
Elective Spanish Elective 3

SEMESTER TOTAL 15

TOTAL Credit Hours for AAS Degree 61-62

1 SPCH 1311, 1315, 1318, or 1321
2 Capstone course

MACHINING TECHNOLOGY

The Computer Numeric Control Operator/Programmer Certificate program is designed to prepare graduates for careers in the operation and programming of Computer Numeric Control (CNC) mills and lathes used extensively in the manufacturing industries. Topics within the certificate program include blueprint reading, manufacturing materials and processes, computer-aided manufacturing (CAM), and extensive hands-on in set up operation and programming of CNC mills and lathes.

CNC Operator/Programmer is classified as an evolving occupation and most likely to provide future employment growth and economic competitiveness within Texas.

COMPUTER NUMERIC CONTROL OPERATOR I CERTIFICATE
(certificate offered at Cy-Fair College and North Harris College)

FIRST YEAR

First Semester
DFTG 1325 Blueprint Reading and Sketching 3
MCHN 1338 Basic Machine Shop I 3
INMT 1443 CAD-CAM 4

SEMESTER TOTAL 10

Second Semester
MCHN 2334 Operation of CNC Machining Ctrs 3
MCHN 2331 Operation of CNC Turning Centers 3
MCHN 1391 Special Topics Machinist OR 3
MCHN 1381 Cooperative Education

SEMESTER TOTAL 9

TOTAL Credit Hours for Computer Numeric Control Operator I Certificate 19

1 Capstone experience course

COMPUTER NUMERIC CONTROL OPERATOR II CERTIFICATE
(certificate offered at Cy-Fair College and North Harris College)

FIRST YEAR

First Semester
INMT 1443 CAD-CAM 4
MCHN 2438 Adv. Comp.-Assisted Manufacturing 4
MCHN 1393 Special Topics in Tool & Die Tech 3

SEMESTER TOTAL 11

Second Semester
MCHN 2303 Fund. of CNC Machine Controls 3
MCHN 2335 Advanced CNC Machining OR 3
MCHN 2381 Cooperative Education

SEMESTER TOTAL 6

TOTAL Credit Hours for Computer Numeric Control Operator II Certificate 17

1 Capstone experience course

MACHINIST I CERTIFICATE
(certificate offered at Cy-Fair College)

 FIRST YEAR

First Semester
DFTG 1325 Blueprint Reading and Sketching 3
MCHN 1338 Basic Machine Shop I 3
MCHN 1320 Precision Tools and Measurement 3

SEMESTER TOTAL 9
MANAGEMENT

The Management Associate of Applied Science Degree includes knowledge, skills and attitudes necessary to succeed in the business world. This program provides students with a broad foundation in general management skills.

The Management Associate of Applied Science Degree is awarded for successful completion of 65-68 credit hours. Those desiring a less comprehensive program should consider the certificate programs listed below.


A wide variety of job opportunities are available to graduates in middle-management positions, first-line supervisors or other positions requiring leadership and decision-making skills such as entrepreneur, management trainee, transportation manager, real estate property manager or retail store manager.

The general education core will transfer to a variety of colleges and universities. Contact a counselor, or faculty member at any of the colleges for specific information and to obtain the recommended sequencing of courses. The sequence of courses can also be found at: www.nhmccd.edu/catalog/.

GENERAL BUSINESS CERTIFICATE
(certificate offered at Cy-Fair College, Kingwood College, Montgomery College, North Harris College and Tomball College)

FIRST YEAR

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUSI 1301</td>
<td>Business Principles 3</td>
</tr>
<tr>
<td>ITSC 1401</td>
<td>Introduction to Computers 4</td>
</tr>
<tr>
<td>BMGT 1341</td>
<td>Business Ethics 3</td>
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<tr>
<td><strong>SEMESTER TOTAL</strong></td>
<td><strong>10</strong></td>
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</table>

Second Semester

<table>
<thead>
<tr>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elective</td>
</tr>
<tr>
<td>Elective</td>
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<tr>
<td>Elective</td>
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<tr>
<td>BMGT 2382</td>
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<tr>
<td>BMGT 2388</td>
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<tr>
<td><strong>SEMESTER TOTAL</strong></td>
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</tbody>
</table>

TOTAL Credit Hours for General Business Certificate 22

1 The specialization electives are chosen from any BUSI, BMGT, BUSG, HRPO, IBUS, MRKG or department-approved course

2 Capstone course

HUMAN RESOURCE CERTIFICATE
(certificate offered at Cy-Fair College, Kingwood College, Montgomery College, North Harris College and Tomball College)

FIRST YEAR

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Credit</th>
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</thead>
<tbody>
<tr>
<td>HRPO 1311</td>
<td>Human Relations 3</td>
</tr>
<tr>
<td>HRPO 2301</td>
<td>Human Resources Management 3</td>
</tr>
<tr>
<td>ITSC 1401</td>
<td>Introduction to Computers 4</td>
</tr>
<tr>
<td><strong>SEMESTER TOTAL</strong></td>
<td><strong>10</strong></td>
</tr>
</tbody>
</table>

Second Semester

<table>
<thead>
<tr>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>BMGT 1301</td>
</tr>
<tr>
<td>BMGT 1303</td>
</tr>
<tr>
<td>HRPO 2307</td>
</tr>
<tr>
<td>IBUS 2341</td>
</tr>
<tr>
<td>BMGT 2382</td>
</tr>
<tr>
<td>BMGT 2388</td>
</tr>
<tr>
<td><strong>SEMESTER TOTAL</strong></td>
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</tbody>
</table>

TOTAL Credit Hours for Human Resource Certificate 22

1 Meets multicultural requirements
2 Capstone course
### INTERNATIONAL BUSINESS CERTIFICATE
(certificate offered at Cy-Fair College, Kingwood College, North Harris College and Tomball College)

**FIRST YEAR**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>IBUS 1305 Intro to Internat'l Business &amp; Trade</td>
<td>3</td>
</tr>
<tr>
<td>IBUS 1301 Principles of Import/Export</td>
<td>3</td>
</tr>
<tr>
<td>ITSC 1401 Introduction to Computers</td>
<td>4</td>
</tr>
<tr>
<td><strong>SEMESTER TOTAL</strong></td>
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<table>
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<th>Second Semester</th>
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<tr>
<td>Elective</td>
<td>Specialization Elective</td>
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<tr>
<td>IBUS 2341 International Comparative Mgmt</td>
<td>3</td>
</tr>
<tr>
<td>IBUS 2345 Import Customs Regulations</td>
<td>3</td>
</tr>
<tr>
<td>BMGT 2382 Cooperative Education</td>
<td>3</td>
</tr>
<tr>
<td>BMGT 2388 Internship</td>
<td>3</td>
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<tr>
<td><strong>SEMESTER TOTAL</strong></td>
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</tbody>
</table>

**TOTAL Credit Hours for International Business Certificate** 22

1. The specialization elective is chosen from any BUSI, BMGT, BUSG, HRPO, IBUS, MRKG or department-approved course

### MARKETING CERTIFICATE
(certificate offered at Cy-Fair College, Kingwood College, North Harris College and Tomball College)

**FIRST YEAR**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>BMGT 1303 Principles of Management</td>
<td>3</td>
</tr>
<tr>
<td>BMGT 1309 Information and Project Mgmt.</td>
<td>3</td>
</tr>
<tr>
<td>MRKG 1301 Customer Relations</td>
<td>3</td>
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<tr>
<td>ITSC 1401 Introduction to Computers</td>
<td>3-4</td>
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<tr>
<td>ARTC 1313 Digital Publishing I</td>
<td>3</td>
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<tr>
<td>MRKG 1311 Principles of Marketing</td>
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<table>
<thead>
<tr>
<th>Second Semester</th>
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<tbody>
<tr>
<td>BUSI 1311 Salesmanship</td>
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<tr>
<td>MRKG 2333 Principles of Selling</td>
<td>3</td>
</tr>
<tr>
<td>MRKG 2349 Advertising &amp; Sales Promotion</td>
<td>3</td>
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<tr>
<td>BMGT/MRKG 2388 Capstone course</td>
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<td><strong>SEMESTER TOTAL</strong></td>
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**TOTAL Credit Hours for Marketing Certificate** 21-22

1. Choose capstone course from MRKG 2348, 2380, 2388, BMGT 2382 or 2388

### SMALL BUSINESS MANAGEMENT CERTIFICATE
(certificate offered at Cy-Fair College, Kingwood College, Montgomery College, North Harris College and Tomball College)

**FIRST YEAR**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Credit</th>
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<tbody>
<tr>
<td>ACCT 2401 Principles of Accounting I</td>
<td>4</td>
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<td>BUSI 2301 Business Law I</td>
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<table>
<thead>
<tr>
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<tbody>
<tr>
<td>MRKG 2348 Marketing Research &amp; Strat.</td>
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<tr>
<td>MRKG 2333 Principles of Selling</td>
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<tr>
<td>BUSI 1311 Salesmanship</td>
<td>3</td>
</tr>
<tr>
<td>BUSG 1341 Small Business Financing</td>
<td>3</td>
</tr>
<tr>
<td>BUSG 2309 Small Business Management</td>
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<tr>
<td>BUSI 1301 Business Principles</td>
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**TOTAL Credit Hours for Small Business Certificate** 23

1. Capstone course

### MANAGEMENT
Associate of applied science degree, Tech Prep
(certificate offered at Cy-Fair College, Kingwood College, Montgomery College, North Harris College and Tomball College)

**FIRST YEAR**

<table>
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<tr>
<th>First Semester</th>
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<tr>
<td>BMGT 1303 Principles of Management</td>
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<tr>
<td>Elective Humanities/Fine Arts</td>
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<tr>
<td>ENGL 1301 Composition &amp; Rhetoric I</td>
<td>3</td>
</tr>
<tr>
<td>ITSC 1401 Introduction to Computers</td>
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<tr>
<td>MRKG 1311 Principles of Marketing</td>
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<table>
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<tr>
<td>ACCT 2401 Principles of Accounting I</td>
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<tr>
<td>BUSI 1301 Business Principles</td>
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</tr>
<tr>
<td>ECON 2301 Macroeconomics</td>
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</tr>
<tr>
<td>ECON 2302 Microeconomics</td>
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<tr>
<td>IBUS 2341 International Comparative Mgmt</td>
<td>3</td>
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<tr>
<td>SPCH 1321 Business Speech</td>
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<tr>
<td>SPCH 1315 Public Speaking</td>
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**SECOND YEAR**

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<th>First Semester</th>
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<tbody>
<tr>
<td>HRPO 1311 Human Relations</td>
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<tr>
<td>HRPO 2301 Human Resource Management</td>
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<tr>
<td>BMGT 1309 Information &amp; Project Mgmt.</td>
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1. Capstone course
BUSI 2304 Business Communications 3
BUSI 1307 Personal Finance 3
BUSI 2301 Business Law 3
BMGT 1341 Business Ethics 3

**SEMESTER TOTAL** 18

**Second Semester**

<table>
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<tr>
<th>Elective</th>
<th>Credit</th>
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<tr>
<td>Cooperative Education OR Internship</td>
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<tr>
<td>Math/Natural Science</td>
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<td>Elective</td>
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<table>
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<th>Credit</th>
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<tr>
<td>Specialization</td>
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<tbody>
<tr>
<td>4</td>
<td></td>
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<tr>
<td>Specialization</td>
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</table>

**SEMESTER TOTAL** 15-17

**TOTAL Credit Hours for Management Degree** 65-67

1. Meets multicultural requirements
2. Suggested elective: MATH 1314 College Algebra
   * Student must meet math competency
3. Any BMGT or MRKG Co-op or Internship
4. Any BUSI, BMGT, BUSG, HRPO, IBUS, MRKG or dept. approved course.

**MEDICAL ASSISTING**

*Medical Assisting Certificate*

(certificate offered at Cy-Fair College and North Harris College)

Medical Assisting is a versatile health care profession that prepares an individual to perform various clinical and administrative functions in a health care facility. These functions, performed under the direction of a licensed physician and/or licensed physicians assistant, are completed while examining and treating patients. Medical assistants are responsible for performing a variety of the tasks that enable a health care facility to properly treat its patients. These tasks include, but are not limited to: preparing treatment rooms for patients’ examinations; scheduling appointments and maintaining medical records; interviewing patients, measuring vital signs, weight and height, and then recording the information; operating x-ray, electrocardiograph (EKG), and other equipment to administer routine diagnostic tests; and completing insurance forms. The exact duties that a medical assistant performs are unique to the setting in which she or he is employed. Industries that employ medical assistants include doctors’ offices/clinics, health practitioners, ambulatory care facilities, and osteopathic offices/clinics.

The Medical Assisting Certificate is a three-semester program. The final semester includes both a Review Course in order to prepare for the American Association of Medical Assistants’ Certified Medical Assistant Exam and a clinical/externship. Many clinical facilities will require students to successfully pass a background check. The clinical allows the student to work in a health care setting to apply the knowledge, skills, and abilities that she or he has learned and to gain practical experience as well.

**FIRST YEAR**

**First Semester**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit</th>
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<tbody>
<tr>
<td>MDCA 1216</td>
<td>Procedures in a Clinical Setting</td>
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<tr>
<td>MDCA 1220</td>
<td>Administrative Procedures</td>
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</tr>
<tr>
<td>MDCA 1217</td>
<td>Procedures in a Clinical Setting</td>
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</tr>
<tr>
<td>MDCA 1221</td>
<td>Administrative Procedures</td>
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</tr>
<tr>
<td>MDCA 1325</td>
<td>Business Math with Machine Apps</td>
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<td>POFT 1301</td>
<td>Business English</td>
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<tr>
<td>MDCA 1213</td>
<td>Medical Terminology</td>
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**SEMESTER TOTAL** 16

**Second Semester**

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<tr>
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<td>A &amp; P for Medical Assistants I</td>
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<tr>
<td>MDCA 1209</td>
<td>A &amp; P for Medical Assistants II</td>
<td>2</td>
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<tr>
<td>MDCA 1352</td>
<td>Medical Laboratory Procedures</td>
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</tr>
<tr>
<td>MDCA 1243</td>
<td>Medical Insurance</td>
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</tr>
<tr>
<td>MDCA 1291</td>
<td>Special Topics in Medical Assistant</td>
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</tr>
<tr>
<td>MDCA 1242</td>
<td>Medical Insurance</td>
<td>2</td>
</tr>
<tr>
<td>MDCA 1348</td>
<td>Pharmacology &amp; Administration of Medications</td>
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**SEMESTER TOTAL** 16

**Third Semester**

<table>
<thead>
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<th>Course Title</th>
<th>Credit</th>
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<tr>
<td>MDCA 1244</td>
<td>Electrocardiography</td>
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</tr>
<tr>
<td>MDCA 1205</td>
<td>Medical Law and Ethics</td>
<td>2</td>
</tr>
<tr>
<td>MDCA1 1154</td>
<td>Certified Medical Assisting Exam Review</td>
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</tr>
<tr>
<td>MDCA 1264</td>
<td>Practicum (or field experience) - Medical/Clinical Assistant</td>
<td>2</td>
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**SEMESTER TOTAL** 7

**TOTAL Credit Hours for Medical Assisting Certificate** 39

1. Capstone Course

**MEDICAL RADIOLOGIC TECHNOLOGY**

The course of study for a Radiologic Technologist is a two-year program, leading to an associate of applied science degree. The program is offered at...
DEGREES AND CERTIFICATES

Montgomery College and Cy-Fair College. Each college will accept one class each year into the radiologic technology program. The six-semester program includes two summer semesters for a total of 72 credit hours.

The curriculum is a balance of general educational and technical courses in the classroom and laboratory, as well as supervised clinical experiences at local hospitals and outpatient clinics. This combination provides the student an opportunity for educational development and assurance of competency in radiographic skills.

The program is designed to provide the student with the knowledge and skills to perform radiographic examinations, provide patient care and assist the Radiologist during diagnostic procedures. Radiologic Technologists are employed in medical centers, community hospitals, extended care facilities, physicians’ offices, specialist clinics and other health care institutions.

Prior to entering the Radiologic Technology AAS degree program, students may take any of the general education core courses required in the program. Radiologic Technology students must earn a grade of “C” or better in each Radiography (RADR) course and maintain an overall grade point average of at least 2.0 in order to graduate from the Radiologic Technology program. The general education core will transfer to a variety of colleges and universities. For more specific information and the sequence of courses at each college, contact the program director or a college counselor. The sequence of courses can also be found at www.nhmccd.edu/catalog

In addition to the tuition and textbooks for the radiologic technology courses, there are additional fees and expenses. Students are required to purchase uniforms and accessories. Each student is accepted into the program is required to purchase student liability insurance (subject to rates applicable at the time of registration) and obtain current immunizations as required by the Texas Department of State Health Services for healthcare providers. Regulations require that students complete the Hepatitis B immunization series that may take between 3-6 months prior to patient contact. Each student is also responsible for his/her own transportation to the clinical areas.

Graduates of the Radiologic Technology AAS degree program are eligible to apply for the certification examination radiologic technology given by the American Registry of Radiologic Technologists (ARRT); www.arrt.org. Graduates may also apply for Texas State certification through the Texas Department of State Health Services; www.tdh.state.tx.us/hcqs/plc/mrt.htm.

More information on a Radiologic Technology career can be found at the American Society of Radiologic Technologists web site: www.asrt.org.

Admission Criteria:
In addition to the general admission requirements of the North Harris Montgomery College District, the following requirements must be met in order to apply for admission to the Radiologic Technology AAS program.

1. College entry-level ability in mathematics, English and writing, as defined by North Harris Montgomery Community College District. For further information, contact any of the Student Development offices.

2. Satisfactory completion of Anatomy and Physiology I (BIOL 2401) with a C or better within the previous five years and prior to submission of an application for the Radiologic Technology program.

3. A cumulative grade point average (GPA) of at least 2.0 in high school and/or college. If a student has completed more than 24 semester hours of college courses, only the GPA will be considered.

4. Because clinical space is limited, students are admitted on a competitive basis.

5. Final acceptance into the program is contingent upon a satisfactory background check (as required by hospitals) that is completed by a college approved agency at the student’s expense. Clinical facilities may also require completion of satisfactory drug screening.
MEDICAL RADIOLOGIC TECHNOLOGY

Associate of Applied Science Degree
(degree offered at Cy-Fair College and Montgomery College)

The sequence of courses at Montgomery College may vary due to the January start date, however, all courses listed below must be completed to fulfill degree requirements.

Prerequisite Credit
BIOL 2401 Human Anatomy and Physiology I 4

SEMESTER TOTAL 4

FIRST YEAR

First Semester Credit
BIOL 2402 Human Anatomy and Physiology II 4
RADR 1409 Intro to Radiography and Patient Care 4
RADR 1411 Basic Radiographic Procedures 4
RADR 1313 Principles of Radiographic Imaging I 3

SEMESTER TOTAL 15

Second Semester Credit
MATH 1314 College Algebra 3
RADR 2401 Intermediate Radiographic Procedures 4
RADR 1260 Clinical 2
RADR 2305 Principles of Radiographic Imaging II 3

SEMESTER TOTAL 12

Third Semester Credit
ENGL 1301 Composition & Rhetoric I 3
RADR 1261 Clinical 2
RADR 2331 Advanced Radiographic Procedures 3

SEMESTER TOTAL 8

SECOND YEAR

First Semester Credit
ITSC 1401 Intro to Computers 4
RADR 2313 Radiation Biology and Protection 3
RADR 1360 Clinical 3
RADR 2309 Radiographic Imaging Equipment 3

SEMESTER TOTAL 13

Second Semester Credit
RADR 2360 Clinical 3
PSYC 2301 General Psychology 3
Elective1 Humanities/Fine Arts 3
RADR 2217 Radiographic Pathology 2
SPCH Elective 3

SEMESTER TOTAL 14

Third Semester Credit
RADR 2335 Radiologic Technology Seminar 3
RADR2 2361 Clinical 3

SEMESTER TOTAL 6

TOTAL Credit Hours for Medical Radiologic Technology AAS Degree 72

1 Choose from SPCH 1311, 1315, 1318, or 1321
2 Capstone course
3 Choose from the general education core on page 86.

NURSING

The North Harris Montgomery Community College District offers a variety of nursing programs and curricula at its college campuses. Kingwood, Montgomery, North Harris, and Tomball Colleges offer multiple entry/exit programs of study in Associate Degree Nursing (ADN) in an integrated design. With an integrated nursing curriculum, both classroom and clinical content are organized around a series of concepts that progress from simple to complex. Cy-Fair College offers a block nursing curriculum. In a blocked nursing curriculum, learning experiences are divided by content area such as Care of Children and Families and Adult Health. Both of these programs and curricula are designed for those individuals interested in becoming a registered nurse.

The vocational nursing certificate program is offered at Cy-Fair, Kingwood, Montgomery and Tomball Colleges. Graduates are prepared to provide nursing care for clients with predictable outcomes in a variety of health care settings. These programs are designed for those individuals interested in becoming a licensed vocational nurse.

GENERAL GUIDELINES

Upon acceptance into the program, students must submit a record of current immunizations (including a complete Hepatitis B Series as required by the Texas Department of State Health Services) and a clear criminal background check. Criminal background checks are required by clinical facilities and the Board of Nurse Examiners for the State of Texas (BNE.) Drug screens are required by some clinical facilities.

Completion of the nursing program does not guarantee eligibility to take the state licensure exam. Candidates for Texas nursing licensure must submit fingerprint cards to the BNE. The background check will be processed by the Federal Bureau of Investigations (FBI). Individuals
with histories of criminal convictions, mental illness and/or chemical dependency will be considered on an individual basis after review by the Board of Nurse Examiners. This process may take six (6) months to two (2) years to complete. Prospective applicants who question their eligibility are encouraged to discuss their situation with the Board of Nurse Examiners, at www.bne.state.tx.us or 512.305.7400 prior to enrollment.

Costs for completing the program include tuition and fees for the nursing courses as well as additional expenses for textbooks, uniforms, immunizations, testing fees, clinical/lab equipment and licensure fees. Nursing students also have the responsibility for covering the costs of their physical examinations, CPR certifications, background checks, drug screens and transportation to and from clinical agencies for day and evening learning experiences.

The admission requirements, selection criteria and application process for the nursing program are presented in regularly scheduled information sessions open to the public.

For additional information visit www.nhmccd.edu and select the preferred college link and then the nursing program.

Students applying to the NHMCCD nursing programs must adhere to the Code of Conduct and other policies of the Associate Degree Nursing Program included in the Student Handbook, which can be found on the college’s web sites.

Progression Requirements
To remain in good standing and progress within the nursing curriculum, students must:

1. Maintain a cumulative grade point of 2.0, and
2. Attain a grade of “C” or better in each nursing and general education course designated in the ADN degree plan.
3. Successfully complete all concurrent nursing courses to advance to the next level.

Testing Requirements
Students are required to take nationally-normed tests throughout the curriculum and to make satisfactory scores on each test. Additionally, in the last semester of the curriculum, students must achieve a satisfactory exit exam score in order to graduate from the program. All costs for the exams and remediation are the student’s responsibility.

Students with Disabilities
It is the policy of NHMCCD to comply with the requirements of the Americans with Disabilities Act (ADA). Students with documented disabilities will be given accommodations in accordance with the NHMCCD policy and those allowed by the National Council of State Boards of Nursing.

Biology Course Requirements
Note: Biology courses submitted for program credit must be completed no more than five (5) years prior to application to the nursing program. Each biology course may be repeated for a grade change (including a ‘W” or “I”) only one (1) time during the same five (5) year period.

Tech Prep/Dual Credit Courses
Students who have completed high school health science technology courses may be eligible for articulated credit in the nursing programs. Dual credit opportunities exist for other courses in the nursing degree plans. Please refer to the college catalog, website, or counseling office for further information.

Additional Guidelines
Applicants who have failed or withdrawn from any nursing program will be considered on an individual basis. An individual’s request to transfer into any NHMCCD nursing program will be reviewed on an individual basis by the program director and admissions committee. Class placement is based on previous achievement and space availability. Admission is considered only if prior program enrollment has been within one (1) year.

Transfer Guidelines
1. Transfer requests for those who have completed nursing coursework (within two semesters of inquiry) at other colleges are evaluated individually and acceptances are based on program space availability.
2. Students who have had two (2) unsuccessful attempts in a previous associate degree (ADN) or vocational nursing (VN) program are not eligible for transfer into the associate degree (ADN) nursing program at NHMCCD. These students may apply as a beginning student.

3. Transfer applicants will be required to submit a letter of standing from the prior nursing program director.

4. See college websites for additional information regarding the Nursing Program Transfer Policy.

NURSING

Associate of Applied Science Degree, Tech Prep

There are three (3) programs of study offered in associate degree nursing: The Basic Track, the Vocational Nursing Track and the Transition Track for Articulating Students. Upon completion of the AAS degree, nursing graduates may apply to take the licensure exam to become a registered nurse (RN). Eligibility to take the National Council Licensure Exam for Registered Nurses (NCLEX-RN) is determined solely by the Board of Nurse Examiners (BNE).

The Associate Degree Nursing Programs of the North Harris Montgomery Community College District are all accredited by the National League for Nursing Accrediting Commission (NLNAC). Accreditation information regarding this program is available through NLNAC, 61 Broadway, 33rd Floor, New York, NY 10006, phone 212.363.5555 ext. 153, and the Board of Nurse Examiners for the State of Texas, 333 Guadalupe #3-460, Austin, TX 78701, telephone 512/305-7400.

ADMISSION CRITERIA – BASIC TRACK

In addition to the admission requirements of the district, the following are requirements for admission into the Associate Degree Nursing program. The applicant must:

1. Submit passing THEA exam scores in reading, writing and math or complete NHMCCD Student Success Initiative (SSI) requirements. To determine your SSI status, see a college adviser.

2. Complete the following courses with a minimum grade point average of 2.5 or higher: BIOL 2401, ENGL 1301, and PSYC 2301. (BIOL 2401 is required to meet the admission criteria, however, the highest grade in BIOL 2401 or 2402 will be used for calculation of GPA).

Note: Biology courses submitted for program credit must be completed no more than five (5) years prior to application to the nursing program. Each biology course may be repeated for a grade change (including a ‘W’ or “I”) only one (1) time during the same five (5) year period.

3. Obtain a grade of a C or higher in all courses required in the associate degree nursing (ADN) degree plan. GPA in all courses in the ADN degree plan must be 2.5 or greater at time of application.

4. Complete a national standardized nursing pre-entrance test and meet the minimum score requirement. The cost of this test is the responsibility of the applicant. All applicants must take the nursing pre-entrance test. The entrance test may only be taken one (1) time each admission period.

5. Submit official transcripts from colleges attended other than NHMCCD.

6. Submit a completed application to the preferred college’s nursing program. Application deadlines are posted on the college’s websites. Separate applications to the college nursing programs are only required if the deadline submission dates differ.

7. Final acceptance into the program is contingent upon a completed Hepatitis B immunization series and a satisfactory background check (as required by hospitals), which will be completed by a district-approved agency at the student’s expense.

ADMISSION CRITERIA – ARTICULATING STUDENTS

In addition to the admission requirements for the district, the following are admission require-
DEGREES AND CERTIFICATES

ments for the transition track for articulating students:

1. Submit passing THEA exam scores in reading, writing and math or complete NHMCCD Student Success Initiative (SSI) requirements. To determine your SSI status, see a college adviser.

2. Complete the following courses with a minimum cumulative grade point average of 2.5 or higher: BIOL 2401, BIOL 2402, ENGL 1301, PSYC 2301, PSYC 2314, and RNSG 1301. In addition, there are other courses that must be completed prior to enrolling in nursing courses.

Note: Biology courses submitted for program credit must be completed no more than five (5) years prior to application to the nursing program. Each biology course may be repeated for a grade change (including a ‘W” or “I”) only one (1) time during the same five (5) year period.

3. Obtain a grade of C or higher in all courses required in the associate degree nursing degree plan. GPA in all courses in the ADN degree plan must be 2.5 or greater at time of application.

4. Possess current Texas license as a Licensed Vocational Nurse, current National Registry EMT Paramedic Certification, current Texas Department of Health EMT Paramedic Certification, OR current Texas Department of Health Paramedic License.

5. Be currently employed as an LVN or paramedic OR have graduated from an LVN or paramedic educational program within the past year.

6. Submit official transcripts from colleges attended other than NHMCCD.

7. Submit a completed application to the preferred college’s nursing program. Application deadlines are posted on the college’s websites. Separate applications to the college nursing programs are only required if the deadline submission dates differ.

8. Final acceptance into the program is contingent upon a completed Hepatitis B immunization series and a satisfactory background check (as required by hospitals), which will be completed by a district approved agency at the student’s expense.

VOCATIONAL NURSING CERTIFICATE

The Vocational Nursing Program is a three-semester, one year full-time 47-credit hour certificate program. The program is approved by the Board of Nurse Examiners. Upon completion of the Vocational Nursing Certificate, nursing graduates may apply to take the licensure exam to become a Licensed Vocational Nurse (LVN). Eligibility to take the National Council Licensure Examination for Practical Nurses (NCLEX-PN) is determined solely by the Board of Nurse Examiners for the State of Texas.

VOCATIONAL NURSING ADMISSION CRITERIA

In addition to the district admission requirements, the following are required for the vocational nursing program:

1. Graduate from high school verified by an official transcript or GED certificate. If the high school transcript is from a country other than the USA, it must be evaluated by an approved transcript evaluation company.

2. Submit passing THEA exam scores in reading, writing or math or complete NHMCCD Student Success Initiative (SSI) requirements. To determine your SSI status, see a college adviser.

3. Complete BIOL 2404 with a grade of C or higher. (Completion of BIOL 2401 & 2402 is accepted in place of BIOL 2404, and is recommended for those students planning to transition into the ADN program.) Biology courses submitted for program credit must be completed no more than five (5) years prior to application to the nursing program. Each biology course may be repeated for a grade change (including a ‘W” or “I”) only one (1) time during the same five (5) year period.

4. Maintain a cumulative grade point of 2.0 in college level courses.
5. Complete a standardized nursing pre-entrance test. The cost of this test is the responsibility of the applicant. All applicants must take the nursing pre-entrance test and obtain a minimum score of 70 in both math and reading. The entrance test may only be taken one (1) time each admission period.

6. Submit official transcripts from colleges attended other than NHMCCD.

7. Submit a completed application to the preferred college’s nursing program. Application deadlines are posted on the college’s websites. Separate applications to the college nursing programs are only required if the deadline submission dates differ.

8. Final acceptance into the program is contingent upon a completed Hepatitis B immunization series and a satisfactory background check (as required by hospitals), which will be completed by an approved agency at the student’s expense.

**LVN Transition to Associate Degree Nursing (RN)**

Graduates of the vocational nursing program who become licensed as LVN’s and complete the required prerequisite courses may be eligible to apply for the Transition Track for Articulating Students.

**VOCATIONAL NURSING CERTIFICATE**

(certificate offered at Cy-Fair College, Kingwood College, Montgomery College, and Tomball College)

**FIRST YEAR**

<table>
<thead>
<tr>
<th>Prerequisite Semester</th>
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<tbody>
<tr>
<td>BIOL(^1) 2404 Introduction to A&amp;P</td>
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**SEMIESTER TOTAL** 4

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<tr>
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<tr>
<td>VNSG 1260 Clinical I</td>
<td>2</td>
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<tr>
<td>VNSG(^2) 1116 Nutrition</td>
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<tr>
<td>VNSG 1323 Basic Nursing Skills</td>
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<tr>
<td>VNSG 1304 Foundations</td>
<td>3</td>
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<tr>
<td>VNSG 1400 Nursing in Health &amp; Illness I</td>
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**SEMIESTER TOTAL** 14

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**Second Semester**

| VNSG\(^3\) 1238 Mental Illness | 2 |
| VNSG 1163 Pediatric Clinical | 1 |
| VNSG 1231 Pharmacology | 2 |
| VNSG 1262 Clinical II | 2 |
| VNSG 1307 Pediatric Nursing | 3 |
| VNSG 1409 Nursing in Health & Illness II | 4 |

**SEMIESTER TOTAL** 14

---

**Third Semester**

| VNSG 1219 Professional Development | 2 |
| VNSG\(^4\) 1226 Gerontology | 2 |
| VNSG 1306 Maternity/Newborn Nursing | 3 |
| VNSG 1410 Nursing In Health & Illness III | 4 |
| VNSG 2161 Maternity/Newborn Clinical | 1 |
| VNSG\(^5\) 2361 Clinical III | 3 |

**SEMIESTER TOTAL** 15

**TOTAL Credit Hours for Vocational Nursing Certificate** 47

---

1. BIOL 2401 & 2402 Anatomy & Physiology I & II can be substituted for BIOL 2404, if student has taken them.

2. BIOL 1322 Nutrition can be substituted for VNSG 1116 Nutrition, if student has taken it already.

3. Capstone course

4. Course may be taken during any semester as scheduled by college.

---

**NURSING SPECIALIZATION**

(Integrated Curriculum)

Associate of applied science degree, Tech Prep

(specialization offered at Kingwood College, Montgomery College, North Harris College, and Tomball College)

**FIRST YEAR**

<table>
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<tr>
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<tr>
<td>BIOL 2401 Human Anatomy &amp; Physiology I</td>
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<td>ENGL 1301 Composition &amp; Rhetoric I</td>
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<td>PSYC 2301 General Psychology</td>
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**SEMIESTER TOTAL** 10

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<tr>
<td>RNSG 1172 Preparation for Basic Care</td>
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<tr>
<td>SOC(^6) 1301 Principles of Sociology</td>
<td>3</td>
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<td>BIOL 2402 Human Anatomy &amp; Physiology II</td>
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<td>RNSG 1301 Pharmacology</td>
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<td>KINE Physical Activity</td>
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<td>BIOL 2420 Medical Microbiology</td>
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<td>RNSG 1361 Clinical - Nursing I</td>
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<tr>
<td>RNSG 1523 Intro to Professional Nursing</td>
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**SEMIESTER TOTAL** 13

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1. BIOL 2401 & 2402 Anatomy & Physiology I & II can be substituted for BIOL 2404, if student has taken them.

2. BIOL 1322 Nutrition can be substituted for VNSG 1116 Nutrition, if student has taken it already.

3. Capstone course

4. Course may be taken during any semester as scheduled by college.
# DEGREES AND CERTIFICATES

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### Elective
- Humanities/Fine Arts
- RNSG 2230 Professional Nursing Review and Licensure Preparation
- RNSG 2362 Clinical - Nursing IV
- RNSG 2535 Integrated Client Care Management

| **TOTAL Credit Hours for Nursing Specialization** | 72 |

1. Meets multicultural requirement
2. Capstone course

## TRANSITION TO PROFESSIONAL NURSING FOR ARTICULATING STUDENTS

**Integrated Curriculum**

Associate of applied science degree

(specialization offered at North Harris College, Montgomery College and Tomball College)

### FIRST YEAR

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<td>Introduction to Speech Communication</td>
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### Second Semester

1. Meets multicultural requirement
2. Capstone course

## VOCATIONAL NURSING ADN TO VN CERTIFICATE

(certificate offered at North Harris College)

Must be enrolled in ADN Program

### FIRST YEAR

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<tr>
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**SEMESTER TOTAL** 12

### SECOND YEAR

#### First Semester

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<td>VNSG 2362</td>
<td>Clinical - Practical Nurse I</td>
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<td>VNSG 2363</td>
<td>Clinical - Practical Nurse II</td>
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**SEMESTER TOTAL** 7

**TOTAL Credit Hours for Vocational Nursing ADN to VN Certificate** 54

1. Meets multicultural requirement
2. Capstone course

### NURSING ASSISTANT CERTIFICATE

(certificate offered at Kingwood College, Montgomery College, North Harris College, and Tomball College)

Must be enrolled in ADN Program

#### First Semester

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<th>Credit</th>
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**SEMESTER TOTAL** 11

#### Second Semester

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<td>Integrated Nursing Skills I</td>
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**SEMESTER TOTAL** 17

**TOTAL Credit Hours for Nursing Assistant Certificate** 28

1. Capstone course

### NURSING SPECIALIZATION

(Block Curriculum)

Associate of applied science degree

(degree offered at Cy-Fair College)

#### FIRST YEAR

#### First Semester

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#### Second Semester

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<tr>
<td>ENGL 1301</td>
<td>Composition &amp; Rhetoric I</td>
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**SEMESTER TOTAL** 10

**TOTAL Credit Hours for Nursing Specialization Block Curriculum** 72

1. Meets multicultural requirement
2. Capstone Course

* Can be taken during 1st year, 3rd semester or 2nd year, 1st semester, depending on spring or fall enrollment.
DEGREES AND CERTIFICATES

OCCUPATIONAL THERAPY ASSISTANT

Occupational therapy assistants, under the direction of a licensed occupational therapist, assist individuals with disabling conditions to achieve independence through the use of purposeful activity. The curriculum for the Occupational Therapy Assistant program covers a period of two years and is designed to lead toward an Associate of Applied Science degree. Students will engage in coursework for a period of four semesters followed by a fifth semester of full-time fieldwork at health care facilities in the community. The educational experience will include classroom instruction, laboratory activities and clinical work. Many clinical facilities will require students to successfully pass a background check. Students will be trained to work with all age groups in a variety of health care settings.

The Tomball and Kingwood College Occupational Therapy Assistant programs are accredited by the Accreditation Council for Occupational Therapy Education (ACOTE) of the American Occupational Therapy Association (AOTA) located at 4720 Montgomery Lane, P.O. Box 31220, Bethesda, MD 20824-1220, 301.652.AOTA. Graduates will be eligible for the national certification examination administered by the National Board for Certification in Occupational Therapy (NBCOT). After successful completion of this examination, the graduate will be a Certified Occupational Therapy Assistant (COTA). Most states, including Texas, require licensure to practice. Texas licensure is based on successful completion of the NBCOT examination. A felony conviction may affect a graduate’s ability to sit for the NBCOT examination or attain a state licensure.

The general education core will transfer to a variety of colleges and universities. Contact a counselor, or faculty member at any of the colleges for specific information. To obtain the recommended sequencing of courses, contact either program director at Tomball College or Kingwood College. The sequence of courses can also be found at: www.nhmccd.edu/catalog/.

Admission Criteria:
Applicants must meet the college’s general admission criteria as well as program admission criteria and submit all documentation to the Occupational Therapy Assistant office at Tomball College or Kingwood College.

Program Admission Criteria include:
- Apply for admission to the occupational therapy assistant department by submitting a formal application and all required official documents to the department. All eligible candidates will be scheduled for a personal interview. Applicants will be notified by mail of their admission status;
- Submit three completed personal reference forms;
- Observation hours may be required, contact the program director for specific information.
- Applicants may be asked to provide a writing sample.
- Final acceptance into the program is contingent upon a satisfactory background check (as required by hospitals), which will be completed by an approved agency at the student’s expense. Clinical facilities may also require completion of satisfactory drug screening. The following academic requirement options are for the Tomball College program. Applicants for the Kingwood College program should contact that program director.

Minimum Academic Requirements Include:
Applicants can meet the academic requirements through ONE of the three following options:

Option 1 (Test scores that show college level skills such as):
THEA scores of Reading 230, Writing 220, and Math 230. Other test scores may be substituted in place of THEA scores such as SAT, ACT, ASSET and Compass scores. Please inquire with the program director regarding any substitutions.
Option 2 (Course Completion):
Complete a minimum of seven semester college credit hours including the following courses (within the past seven years) with a grade point average (GPA) of 2.0 with no grade below a C.

a. BIOL 2401: Human Anatomy & Physiology I
   OR BIOL 2402: Human Anatomy & Physiology II and
b. ENGL 1301: Composition & Rhetoric I

Applicants may also substitute other completed courses such as psychology, history, etc. Contact the program director for verification of any substitutions.

Option 3 (A combination of testing and coursework):
Applicants may combine test scores with course completion. For example, completion of ENGL 1301 with a Math score of 38 (elementary algebra) on the ASSET would be an acceptable combination. Contact the program director for specific questions regarding the combining of scores and coursework.

Upon admission to the program students must have:

- Physical examination completed by a licensed physician;
- Verification of updated immunization record; regulations require that prior to patient contact, the student must have completed the Hepatitis B immunization series which is received over a 3 - 6 month period
- Certificate of completion of CPR prior to Level II Fieldwork

Incomplete applications will not receive a department review. Each applicant is responsible for contacting the OTA department to confirm whether their application is complete. Applicants to the program will be ranked according to their level of achievement of the program admission criteria and will be accepted into the program on a competitive basis. Applicants who are not accepted for admission in the year in which they apply may submit a letter to the director of the occupational therapy assistant program requesting that their application be reconsidered for the following year. Students must complete Level II fieldwork assignments within 18 months following completion of academic preparation. Additional information can be obtained from the occupational therapy assistant department at Tomball College and Kingwood College.

OCCUPATIONAL THERAPY ASSISTANT

Associate of applied science degree
(degree offered at Kingwood College and Tomball College)

Course sequence is for Tomball College. Contact the Kingwood College program director for details on its course sequence.

**FIRST YEAR**

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<th>Semester</th>
<th>Credit</th>
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SECOND YEAR

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<tr>
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<tr>
<td>Elective 1</td>
<td>Humanities/Fine Arts</td>
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<tr>
<td>OTHA 1341</td>
<td>Occupational Performance from Birth Through Adolescence</td>
</tr>
<tr>
<td>OTHA 1353</td>
<td>Occupational Performance for Elders</td>
</tr>
<tr>
<td>OTHA 2166</td>
<td>Practicum</td>
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<td>OTHA 2335</td>
<td>Management in Occup. Therapy</td>
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<td>SPCH 1318</td>
<td>Interpersonal Communications</td>
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<td>OTHA 2461</td>
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</table>
DEGREES AND CERTIFICATES

TOTAL Credit Hours for AAS Degree 65
1 Combination of these courses meet multicultural requirement
2 Capstone course
* Student must meet math competency

PARALEGAL STUDIES

Degrees and certificates in paralegal studies are available for students wishing to pursue a professional career as a paralegal/legal assistant. The goal of the program is to prepare students to perform effectively in a variety of legal settings and to adapt readily to changes in the legal environment. The program offers a two-year associate of applied science degree and a one-year certificate in paralegal studies.

Exciting and fulfilling careers can be found in both the public and private sectors of legal practice for graduates holding paralegal degrees and certificates. Paralegals are trained to assist attorneys in such legal services as drafting legal documents, conducting legal research and factual investigations, and interviewing clients and witnesses. Paralegals must work under the direct supervision of a lawyer. The program offers a faculty of experienced paralegal professionals and attorneys, and an extensive law library with Westlaw Computer Assisted Legal Research available on campus. Lexis/Nexis computer research is also available online with computer access to the library website.

For students enrolled fulltime the AAS degree may be earned in two years, and the certificate in one year. For those attending on a part-time basis time for completion will be longer. The general education core will transfer to a variety of colleges and universities. Transferred legal specialty courses will be approved as course substitutions as appropriate by the program director only. All students must take at least 12 semester credits of legal specialty courses in the traditional classroom setting. Contact a counselor or paralegal studies faculty member at North Harris College for more information. Find us on the Web at: www.nhmccd.edu/students/academics/info/divisions

PARALEGAL STUDIES CERTIFICATE
(certificate offered at North Harris College)

Admission to this program is limited to students who have already earned an associate or a baccalaureate degree from an accredited college or university. Students without a prior degree who wish to pursue Paralegal Studies must matriculate under the AAS.

FIRST YEAR

First Semester Credit
ITSW 1301 Intro to Word Processing OR 3-4
ITSC 1401 Introduction to Computers
LGLA 1219 Legal Ethics & Prof. Responsibility 2
LGLA 1303 Legal Research 3
LGLA 1307 Intro to Law & Legal Professions 3
LGLA 2303 Torts & Personal Injury Law 3
LGLA 2370 Rules of Civil Procedure 3

SEMESTER TOTAL 17-18

Second Semester Credit
ACNT 1303 Introduction to Accounting 3
LGLA 1345 Civil Litigation 3
LGLA 2305 Interviewing & Investigating 3
LGLA 2331 Adv. Legal Research & Writing 3
LGLA 1 Elective 3
LGLA 2388 Internship Paralegal/Legal Assist. OR 3
LGLA 1 Elective

SEMESTER TOTAL 18

TOTAL Credit Hours for Paralegal Studies Certificate 35-36
1 LGLA 1323, 1341, 1349, 1353, 1355, 1359, 1371, 2301, 2309, 2311, 2313, 2315
2 Capstone course

PARALEGAL STUDIES

Associate of applied science degree, Tech Prep
(degree offered at North Harris College)

FIRST YEAR

First Semester Credit
BUSI 2301 Business Law 3
MATH 1332 Math for Liberal Arts 3
ENGL 1301 Composition & Rhetoric I 3
ITSC 1401 Introduction to Computers 4
LGLA 1307 Intro to Law & Legal Professions 3

SEMESTER TOTAL 16

Second Semester Credit
ACNT 1303 Introduction to Accounting 3
Elective 3
Elective 3
Elective 3
GOVT 2302 American Government II 3
### DEGREES AND CERTIFICATES

**SECOND YEAR**

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<tr>
<td>LGLA 1219 Legal Ethics &amp; Prof. Responsibility</td>
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<td>LGLA 1345 Civil Litigation</td>
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<td>LGLA 2370 Rules of Civil Procedure</td>
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<td>LGLA 2303 Torts and Personal Injury Law</td>
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<td>ITCW 1301 Intro to Word Processing</td>
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**SEMESTER TOTAL** 15

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<tr>
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<tr>
<td>LGLA 2305 Interviewing &amp; Investigations</td>
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<td>LGLA Elective</td>
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<td>SPCH 1315 Public Speaking</td>
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**SEMESTER TOTAL** 15

**TOTAL Credit Hours for AAS Degree** 61-62

1. Capstone course.
2. Humanities course requirement must be selected from this list: ENGL 2332, 2333, HIST 2321, 2322, HUMA 1301, 1302, PHIL 1304, FREN 2311, 2312, GERM 2311, 2312, SPAN 2311, 2312. These courses also meet the Multicultural requirement.
3. Select from general education requirements
4. LGLA 1323, 1341, 1349, 1353, 1355, 1359, 1371, 2301, 2309, 2311, 2313, 2315

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### PHARMACY TECHNOLOGY

Pharmacy technicians are paraprofessionals who work under the supervision of a licensed pharmacist to assist with activities that do not require the professional judgment of the pharmacist. Pharmacy technicians assist with maintaining records, filling and dispensing routine prescriptions and medication orders, stocking supplies of patient care areas, maintaining inventories of drug supplies, preparing sterile compound products, accepting prescriptions and refills requests, and providing assistance to the customers and patients specific to the pharmacy practice setting. Exciting careers are available in traditional pharmacy settings, e.g. retail and hospital pharmacies, and non-traditional pharmacy settings, e.g. compounding and nuclear pharmacies.

The pharmacy technology certificate program is a two-semester cohort program that provides an excellent introduction to the pharmacy profession. Recruitment for the fall class begins in the month of April. Students typically begin the two-semester daytime program in August (fall). Because of the demand for the program, students starting in the spring will be in the evening program that runs for 12 months (January through December). Recruitment for the January class (spring) begins in the month of November. The certificate program at North Harris College is accredited by the American Society of Health-System Pharmacists.

In fall 2005, the pharmacy technology program at North Harris College began offering an Associate of Applied Science Degree in Pharmacy Technology. Students interested in ultimately becoming pharmacists can benefit from the knowledge gained in the classroom and internship experiences. Program credit hours will not transfer into a professional sequence for pharmacy school.

The pharmacy technology certificate program prepares graduates to sit for the National Pharmacy Technician Certification Examination, administered by the Pharmacy Technician Certification Board, to become a certified pharmacy technician (CPhT). Pharmacy technicians in the State of Texas are required to be certified by examination within the year allotted. The Texas State Board of Pharmacy also requires certified pharmacy technicians to register with the Board.

**Admission Criteria for the Certificate Program:**

Applicants must meet the program admission criteria and submit all documentation to the pharmacy technology office at either North Harris or Tomball College. Students must not have a history of a felony or any type of controlled substance violation. Contact the program director at the appropriate college to determine eligibility and qualifications for the program prior to completing the application form.

Applicants to the certificate program must:
DEGREES AND CERTIFICATES

1. Contact the North Harris program director at 281.618.5727 or the Tomball program director at 281.357.3790 to determine eligibility and prerequisite requirements.

2. Include official documentation of college level reading, writing, and math by:
   a. submit previous college and/or high school transcripts from all colleges/universities attended;
   b. submit COMPASS, THEA, or ASSET scores,
   c. take the assessment test (i.e. COMPASS) at a cost of $29 for reading, writing, and math at any campus assessment center.

3. Schedule a personal interview with the program director. Applicants will be notified by mail or phone of the admission status. It is strongly recommended that application be made at least a month in advance of the semester for which the student would like to enroll.

4. Receive a high school diploma or GED before applying to the program.

5. Complete a criminal background check prior to admission. Students with a history of one or more felonies or controlled substance violations will not be admitted to the program. Students will be informed of college-approved vendors that can provide this service at the student’s cost.

6. Complete a drug screen prior to clinical affiliation if required by that facility or pharmacy. Students will be provided further information according to agency and/or college policy.

7. Complete the Hepatitis B immunization series prior to patient contact if required by clinical affiliates.

Upon admission to the program, students must have:

1. Recent verification of physical examination-completed by a licensed physician
2. Verification of an updated immunization record Agencies may also require recent TB skin test results, MMR immunity, and/or varicella vaccine.

3. Student liability insurance (paid when student registers for the first semester)
4. Long-sleeve, short-length white lab jacket, program patch, and school-approved name tag.

5. Certificate of completion of CPR prior to the first internship assignment. Incomplete applications will not receive a complete departmental review. Each applicant is responsible for contacting the pharmacy technology office to confirm whether the application is complete. Additional information can be obtained from the pharmacy technology office at North Harris College or Tomball College.

The Associate of Applied Science degree in Pharmacy Technology requires an additional year of course work. Applicants must be registered with the Texas State Board of Pharmacy. The purpose of the program is to prepare graduates for managerial positions and customer service in hospital and community/retail pharmacies. An associate degree in pharmacy technology emphasizes the technician’s interest in and dedication to the work. Further emphasis is placed on ethics and federal and state laws.

Applicants seeking admission to the AAS Program must contact the program director at 281-618-5727 to determine eligibility and prerequisite requirements. Include official documentation of the Pharmacy Technician Certification Board (PTCB) certificate, Texas State Board of Pharmacy (TSBP) certificate, and completion of the pharmacy technology certificate from an accredited institution. Each candidate will be assessed on an individual basis by the program director to determine his or her eligibility before applying to the AAS program. Those who did not complete a pharmacy technology program but had informal on-the-job training must contact the program director for a PLA (Prior Learning Assessment). A nominal fee is required for an assessment of the student’s previous work experience. Prior to graduation from the AAS degree program, students must submit passing THEA exam scores in reading, writing, and math or complete NHMCCD.
**PHARMACY TECHNOLOGY CERTIFICATE**  
(certificate offered at North Harris College and Tomball College)

**FIRST YEAR**

<table>
<thead>
<tr>
<th>First Semester</th>
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<tbody>
<tr>
<td>PHRA 1102 Pharmacy Law</td>
<td>1</td>
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<tr>
<td>PHRA 1305 Drug Classification</td>
<td>3</td>
</tr>
<tr>
<td>PHRA 1309 Pharmaceutical Mathematics I</td>
<td>3</td>
</tr>
<tr>
<td>PHRA 1361 Clinical - Community Pharmacy</td>
<td>3</td>
</tr>
<tr>
<td>PHRA 1413 Community Pharmacy Practice</td>
<td>4</td>
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<td><strong>SEMESTER TOTAL</strong></td>
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<tr>
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<tbody>
<tr>
<td>PHRA 1143 Pharm Tech Certification Review</td>
<td>1</td>
</tr>
<tr>
<td>PHRA 1304 Pharmacotherapy &amp; Disease Proc.</td>
<td>3</td>
</tr>
<tr>
<td>PHRA 1345 Intravenous Admixture &amp; Sterile Compounding</td>
<td>3</td>
</tr>
<tr>
<td>PHRA 1347 Pharmaceutical Mathematics II</td>
<td>3</td>
</tr>
<tr>
<td>PHRA 1449 Institutional Pharmacy Practice</td>
<td>4</td>
</tr>
<tr>
<td>PHRA1 2361 Clinical - Institutional Pharmacy</td>
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<tr>
<td><strong>SEMESTER TOTAL</strong></td>
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**TOTAL Credit hours for Pharmacy Technology Certificate** 31

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**PHARMACY TECHNOLOGY AAS**  
(degree offered at North Harris College)

**FIRST YEAR**

<table>
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<tr>
<th>First Semester</th>
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<tbody>
<tr>
<td>PHRA 1413 Community Pharmacy Practice</td>
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<td>3</td>
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<td>PHRA 1305 Drug Classification</td>
<td>3</td>
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<tr>
<td>PHRA 1102 Pharmacy Law</td>
<td>1</td>
</tr>
<tr>
<td>PHRA 1361 Clinical</td>
<td>3</td>
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<tr>
<td>PHRA 1347 Pharmaceutical Mathematics II</td>
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<td>PHRA 1304 Pharmacotherapy &amp; Disease Proc.</td>
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<td>PHRA 1143 Pharmacy Technician Certification Review</td>
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<td>PHRA 1449 Institutional Pharmacy Practice</td>
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**TOTAL Credit hours for Pharmacy Technology AAS** 65

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**SECOND YEAR**

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<td>PHRA 1240 Pharmacy Third Party Payment</td>
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<td>ENGL 1301 Composition and Rhetoric I</td>
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<tr>
<td>BIOL 2404 Introduction to A&amp;P</td>
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<tr>
<td>PHRA 1207 Law and Ethics Pharmacy Law</td>
<td>2</td>
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<tr>
<td>BMGT 1301 Supervision OR</td>
<td>3</td>
</tr>
<tr>
<td>BMGT 1303 Principles of Management OR</td>
<td>3</td>
</tr>
<tr>
<td>BMGT 2303 Problem Solving &amp; Decision Making</td>
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<tbody>
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<td>SOC1 1301 Principles of Sociology</td>
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<td>SPCH 1318 Interpersonal Communication</td>
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<tr>
<td>PHRA2 1164 Practicum (or field experience) - Pharmacy Technician/Assistant</td>
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<tr>
<td>MRKG 1301 Customer Relations</td>
<td>3</td>
</tr>
<tr>
<td>PHRA 1206 Computerized Drug Delivery Systems I</td>
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<td><strong>SEMESTER TOTAL</strong></td>
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The course of study for a physical therapist assistant (PTA) is a two-year program, leading to an associate of applied science degree. One class is accepted each year into the PTA program, which starts in the fall semester. The five-se-
DEGREES AND CERTIFICATES

mester program includes one summer semester for a total of 69 credit hours. The program is designed to prepare skilled health care workers to perform treatment under the direction of a licensed physical therapist and includes didactic learning, skill development in the lab and clinical training. The treatments include thermal and electrical modalities, rehabilitation techniques, therapeutic exercise and patient education. Clinical facilities will require students to successfully pass a certified background check and may require a screening for drug usage. Graduates are prepared for employment as PTAs in acute care hospitals, rehabilitation centers, outpatient clinics, school systems, home health agencies and other places physical therapy is practiced. On completion of the program, graduates must pass the licensing exam administered by the Texas State Board of Physical Therapy Examiners in order to practice.

The general education core will transfer to a variety of colleges and universities. For more specific information and to obtain the recommended sequencing of courses, contact the program director or a college counselor. The sequence of courses can also be found at www.nhmccd.edu/catalog/

Admission Criteria:
In addition to the general admission requirements of the North Harris Montgomery Community College District, the following are requirements that must be met in order to apply for admission to the PTA program:

1. College entry level ability in mathematics and English, as required by the North Harris Montgomery Community College District. For further information, contact any of the Student Development offices.

2. A grade point average (GPA) of at least 2.0 in high school and/or college.

3. Must have completed at least 40 hours of exposure to the field under the direction of a licensed physical therapist or physical therapist assistant. This requirement may be met by work, volunteer or observation experience.

4. Regulations require that prior to patient contact, the student must have completed the Hepatitis B immunization series which is received over a 3-6 month period.

5. Final acceptance into the program is contingent upon a satisfactory background check (as required by clinical facilities), which will be completed by an approved agency at the student’s expense.

It is recommended that students complete as many of the general education core courses as possible prior to application to the PTA program. BIOL 2401, Human Anatomy & Physiology I, and PTHA 1201, The Profession of Physical Therapy, must be completed with grades of “C” or better prior to admission into the program. Additionally, BIOL 2401 must be completed within the last 7 years.

Applications for admission will be received during the spring semester before the program starts. Because admission to the program is competitive, the students who will be accepted are most likely to be those who score highest on the criteria established by the admissions committee including, but not limited to, the following:

1. have completed a number of the general education core courses in the degree plan and

2. have the highest grades in these courses;

In order to practice as a physical therapist assistant (PTA), a person must be licensed by the Texas Board of Physical Therapy Examiners. To take the PTA licensing exam, a person must be a graduate of a PTA educational program which is accredited by the Commission on Accreditation in Physical Therapy Education. The PTA program at Montgomery College is accredited by the Commission on Accreditation in Physical Therapy Education.

PHYSICAL THERAPIST ASSISTANT
Associate of applied science degree
(degree offered at Montgomery College)

PREREQUISITES
First Semester
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<tr>
<th>Course</th>
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<tr>
<td>BIOL 2401</td>
<td>Human Anatomy &amp; Physiology I</td>
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<tr>
<td>PTHA 1201</td>
<td>The Profession of Physical Therapy</td>
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FIRST YEAR
First Semester
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<tbody>
<tr>
<td>ENGL 1301</td>
<td>Composition &amp; Rhetoric I</td>
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<tr>
<td>PTHA 1225</td>
<td>Communication in Health Care</td>
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<td>PTHA 1305</td>
<td>Basic Patient Care Skills</td>
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<td>PTHA 1413</td>
<td>Functional Anatomy</td>
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Second Semester
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<tbody>
<tr>
<td>BIOL 2402</td>
<td>Human Anatomy &amp; Physiology II</td>
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<td>PTHA 1431</td>
<td>Physical Agents</td>
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<td>PTHA 2201</td>
<td>Essentials of Data Collection</td>
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<td>PTHA 2435</td>
<td>Rehabilitation Techniques</td>
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Third Semester
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<tr>
<th>Course</th>
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<tr>
<td>PSYC 2301</td>
<td>General Psychology</td>
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<td>PTHA 1260</td>
<td>Clinical (1 week)</td>
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<tr>
<td>PTHA 1321</td>
<td>Pathophysiology</td>
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<tr>
<td>PTHA 2409</td>
<td>Therapeutic Exercise</td>
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SECOND YEAR
First Semester
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<tbody>
<tr>
<td>MATH^1</td>
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<tr>
<td>PHIL 2306</td>
<td>Introduction to Ethics</td>
</tr>
<tr>
<td>PTHA 2217</td>
<td>Issues in Health Care</td>
</tr>
<tr>
<td>PTHA 1291</td>
<td>Special Topics in Physical Therapy</td>
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<tr>
<td>SPCH^2</td>
<td>Elective - College level</td>
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Second Semester
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<tr>
<td>PSYC 2314</td>
<td>Lifespan Growth &amp; Development</td>
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<tr>
<td>PTHA^3 1360</td>
<td>Clinical (1st 6 weeks)</td>
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<tr>
<td>PTHA^3 1361</td>
<td>Clinical (2nd 6 weeks)</td>
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Third Semester
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<th>Credit</th>
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<tbody>
<tr>
<td>PTHA^3 2360</td>
<td>Clinical (1st 6 weeks)</td>
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<tr>
<td>PTHA^3,4 2361</td>
<td>Clinical (2nd 6 weeks)</td>
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TOTAL Credit Hours for AAS Degree | 72

^1 Choose from MATH 1314, 1316, 1324, 1325, 1332, 1342, 1350, 1351, or 2320.
^2 Choose from SPCH 1311, 1315, 1318, 1321, 2333, or 2335.
^3 Combination of courses meet multicultural requirement.
^4 Capstone course

PROFESSIONAL OFFICE TECHNOLOGY

The professional office technology associate of applied science degree, tech prep program includes the knowledge, skills, and attitudes necessary to succeed in the business, medical or legal office. Topics cover time management, human relations, filing procedures, telephone and listening techniques, inventory management, and oral and written business communications. Computer skills include not only word processing and spreadsheets, but also database, presentation, project management, and Internet applications.

For the AAS award relating to office administrative assistant, please see the Computer Application Support Specialist degree under Computer Information Technology in this catalog.

The professional office technology associate of applied science degrees, tech prep are awarded for successful completion of 60-65 credit hours.

There are two specializations as options for the professional office technology associate of applied science degree: legal office specialization and medical office specialization. Both options have multiple exit points for certificate programs. The legal office specialization of the professional office technology associate of applied science degree offers certificates in legal office receptionist, legal secretary, and legal administrative assistant. The medical office specialization of the professional office technology associate of applied science degree offers certificates in medical office receptionist, medical office specialist, and medical administrative assistant. A one-semester Bilingual Office Specialist certificate is also offered, as well as a one-semester Computer Office Receptionist Certificate.

Students in the medical office program will be required to pay liability insurance during the semesters involving off-campus practicums or internships. At some facilities, students may be required to show proof of immunizations such as Hepatitis B, tuberculosis, tetanus, and MMR (mumps, measles, rubella). These costs are borne by the student.
DEGREES AND CERTIFICATES

Graduation requirement: students must submit passing THEA exam scores in reading, writing, or math or complete NHMCCD Student Success Initiative (SSI) requirements. To determine your SSI status, see a college adviser.

A wide variety of job opportunities are available to graduates. Some include computer office receptionist, bilingual office receptionist, medical office receptionist, medical secretary, medical administrative assistant, legal office receptionist, legal secretary and legal office administrative assistant.

The general education core will transfer to a variety of colleges and universities. Students may have earned some college credit while in high school through articulation if they enroll within one year of graduation. Contact a high school program administrator or a counselor or faculty member at any college for specific information and to obtain the recommended sequencing of courses. The sequence of courses can also be found at www.nhmccd.edu/catalog/

BILINGUAL OFFICE SPECIALIST CERTIFICATE
(certificate offered at Cy-Fair College, North Harris College and Tomball College)

FIRST YEAR

First Semester Credit
ITSC 1401 Introduction to Computers 4
POFT1 1309 Administrative Office Procedures I 3
POFT 1325 Bus. Math & Machine Applications 3
POFT 1329 Beginning Keyboarding OR 3
ITSW 1301 Intro to Word Processing 3
POFT 1303 Bilingual Business Writing 3

TOTAL Credit Hours for Bilingual Office Specialist Certificate 16

1 Capstone course

OFFICE ASSISTANT SPECIALIZATION CERTIFICATE
(degree offered at Cy-Fair College, Kingwood College, Montgomery College, North Harris College and Tomball College)

FIRST YEAR

Prerequisite Semester Credit
POFT 1329 Beginning Keyboarding 3
ITSC 1401 Introduction to Computers OR 4
COSC 1401 Microcomputer Applications 4

SEMEESTER TOTAL 7

First Semester Credit
POFT 1309 Administrative Office Procedures I 3
BMGT1 1309 Information and Project Mgmt. 3
POFT 2301 Intermediate Keyboarding OR 3
ITSW 1301 Intro to Word Processing 3
POFT 1301 Business English 3

SEMEESTER TOTAL 12

TOTAL Credit Hours for Office Assistant Specialization Certificate 19

1 Capstone course

ADMINISTRATIVE SUPPORT SPECIALIZATION CERTIFICATE
(degree offered at Cy-Fair College, Kingwood College, Montgomery College, North Harris College and Tomball College)

FIRST YEAR

Prerequisite Semester Credit
POFT 1329 Beginning Keyboarding 3
ITSC 1401 Introduction to Computers OR 4
COSC 1401 Microcomputer Applications 4

SEMEESTER TOTAL 7

First Semester Credit
ITSC 1401 Introduction to Computers OR 4
POFT 1309 Administrative Office Procedures I 3
BMGT 1309 Information and Project Mgmt. 3
POFT 2301 Intermediate Keyboarding OR 3
ITSW 1301 Intro to Word Processing 3
POFT 1301 Business English 3

SEMEESTER TOTAL 12

Second Semester Credit
POFT 1305 Business Math and Machine Apps. 3
ITSW 1404 Introduction to Spreadsheets 4
ACNT 1303 Introduction to Accounting I 3
SPCH1 1315 Speech Elective 3
POFT2 2331 Administrative Systems 3

SEMEESTER TOTAL 16

TOTAL Credit Hours for Administrative Support Specialization Certificate 35

1 Choose from SPCH 1315, 1318, 1321
2 Capstone course

ADMINISTRATIVE ASSISTANT SPECIALIZATION CERTIFICATE
(degree offered at Cy-Fair College, Kingwood College, Montgomery College, North Harris College and Tomball College)
FIRST YEAR

Prerequisite Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit</th>
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</thead>
<tbody>
<tr>
<td>POFT 1329</td>
<td>Beginning Keyboarding</td>
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<tr>
<td>ITSC 1401</td>
<td>Introduction to Computers OR</td>
</tr>
<tr>
<td>COSC 1401</td>
<td>Microcomputer Applications</td>
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First Semester

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<tr>
<td>POFT 1309</td>
<td>Administrative Office Procedures I</td>
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<td>BMGT 1309</td>
<td>Information and Project Mgmt.</td>
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<tr>
<td>POFT 2301</td>
<td>Intermediate Keyboarding OR</td>
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<tr>
<td>ITCW 1301</td>
<td>Intro to Word Processing</td>
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<td>POFT 1301</td>
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Second Semester

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<tr>
<td>POFT 1325</td>
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<td>Introduction to Accounting I</td>
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SECOND YEAR

First Semester

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<tr>
<td>ACNT 1311</td>
<td>Introduction to Computerized Acct.</td>
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<tr>
<td>ENGL 1301</td>
<td>Composition &amp; Rhetoric I</td>
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<td>MRKG 1301</td>
<td>Customer Relations</td>
</tr>
<tr>
<td>POFT</td>
<td>Cooperative Education OR</td>
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<td>POFT 2380</td>
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Second Semester

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<td>Math/Natural Science</td>
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<td>KINE</td>
<td>Physical Activity</td>
</tr>
<tr>
<td>POFT</td>
<td>Cooperative Education OR</td>
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<tr>
<td>POFT 2381</td>
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<tr>
<td>IMED 1316</td>
<td>Web Page Design I OR</td>
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TOTAL Credit Hours for Business Administrative Support AAS 67-68

1 Choose from SPCH 1315, 1318, 1321
2 Must meet multicultural requirement
3 Capstone course (course selected must be different than course used to meet second semester requirement)

BUSINESS ADMINISTRATIVE SUPPORT SPECIALIZATION
(degree offered at Cy-Fair College, Kingwood College, Montgomery College, North Harris College and Tomball College)

FIRST YEAR

Prerequisite Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit</th>
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</thead>
<tbody>
<tr>
<td>POFT 1329</td>
<td>Beginning Keyboarding</td>
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<tr>
<td>ITSC 1401</td>
<td>Introduction to Computers OR</td>
</tr>
<tr>
<td>COSC 1401</td>
<td>Microcomputer Applications</td>
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First Semester

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<tbody>
<tr>
<td>POFT 1309</td>
<td>Administrative Office Procedures I</td>
</tr>
<tr>
<td>BMGT 1309</td>
<td>Information and Project Mgmt.</td>
</tr>
<tr>
<td>POFT 2301</td>
<td>Intermediate Keyboarding OR</td>
</tr>
<tr>
<td>ITCW 1301</td>
<td>Intro to Word Processing</td>
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<td>POFT 1301</td>
<td>Business English</td>
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Second Semester

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<th>Course</th>
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<tbody>
<tr>
<td>POFT 1325</td>
<td>Business Math and Machine Apps.</td>
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<tr>
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<td>Introduction to Spreadsheets</td>
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<tr>
<td>ACNT 1303</td>
<td>Introduction to Accounting I</td>
</tr>
<tr>
<td>SPCH</td>
<td>Speech Elective</td>
</tr>
<tr>
<td>POFT 2331</td>
<td>Administrative Systems</td>
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<tr>
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SENIOR YEAR

First Semester

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<tr>
<td>COSC 1401</td>
<td>Microcomputer Applications</td>
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<tr>
<td>ITCW 1301</td>
<td>Intro to Word Processing OR</td>
</tr>
<tr>
<td>POFT 1301</td>
<td>Business English</td>
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Second Semester

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<tr>
<td>ITCW 1404</td>
<td>Introduction to Spreadsheets</td>
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<tr>
<td>ACNT 1303</td>
<td>Introduction to Accounting I</td>
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<td>SPCH</td>
<td>Speech Elective</td>
</tr>
<tr>
<td>POFT 2331</td>
<td>Administrative Systems</td>
</tr>
<tr>
<td><strong>SEMESTER TOTAL</strong></td>
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TOTAL Credit Hours for Business Administrative Support AAS 67-68

1 Choose from SPCH 1315, 1318, 1321
2 Must meet multicultural requirement
3 Capstone course (course selected must be different than course used to meet second semester requirement)

MEDICAL OFFICE RECEPTIONIST CERTIFICATE
(certificate offered at Kingwood College, Montgomery College, North Harris College and Tomball College)

FIRST YEAR

First Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit</th>
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<tbody>
<tr>
<td>ITSC 1401</td>
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<tr>
<td>COSC 1401</td>
<td>Microcomputer Applications</td>
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<tr>
<td>ITCW 1301</td>
<td>Intro to Word Processing OR</td>
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<tr>
<td>POFT 1301</td>
<td>Business English</td>
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<td><strong>SEMESTER TOTAL</strong></td>
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Second Semester

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<tr>
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<td>Introduction to Accounting I</td>
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<td>SPCH</td>
<td>Speech Elective</td>
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<tr>
<td>POFT 2331</td>
<td>Administrative Systems</td>
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<tr>
<td><strong>SEMESTER TOTAL</strong></td>
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TOTAL Credit Hours for Medical Office Receptionist Certificate 16

1 Capstone course
DEGREES AND CERTIFICATES

MEDICAL FRONT OFFICE SPECIALIST

(Certificate offered at Kingwood College, Montgomery College, North Harris College and Tomball College)

FIRST YEAR

First Semester

<table>
<thead>
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<th>Course</th>
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<th>Credit</th>
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<tbody>
<tr>
<td>ITSC 1401</td>
<td>Introduction to Computers OR</td>
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<td>COSC 1401</td>
<td>Microcomputer Applications</td>
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<tr>
<td>ITSW 1301</td>
<td>Intro to Word Processing</td>
<td>3</td>
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<tr>
<td>POFM 1302</td>
<td>Medical Software Applications</td>
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<tr>
<td>POFM 1309</td>
<td>Medical Office Procedures</td>
<td>3</td>
</tr>
<tr>
<td>HITT 1305</td>
<td>Medical Terminology I</td>
<td>3</td>
</tr>
<tr>
<td>POFT 1301</td>
<td>Business English</td>
<td>3</td>
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<tr>
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Second Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit</th>
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<tbody>
<tr>
<td>BIOL 2404</td>
<td>Intro to Anatomy &amp; Physiology</td>
<td>4</td>
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<tr>
<td>POFM 1300</td>
<td>Medical Coding Basics</td>
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<td>POFM 1327</td>
<td>Medical Insurance</td>
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<td>POFM 2380</td>
<td>Cooperative Education OR</td>
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<td>POFM 2386</td>
<td>Internship</td>
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<td>HPRS 2332</td>
<td>Health Care Communications</td>
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TOTAL Credit Hours for Medical Front Office Specialist Certificate 32

1 Capstone course (course selected must be different than course used to meet second semester requirement)

MEDICAL ADMINISTRATIVE ASSISTANT

(Certificate offered at Kingwood College, Montgomery College, North Harris College and Tomball College)

FIRST YEAR

First Semester

<table>
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<th>Course</th>
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<th>Credit</th>
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<tbody>
<tr>
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<tr>
<td>COSC 1401</td>
<td>Microcomputer Applications</td>
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<tr>
<td>ITSW 1301</td>
<td>Intro to Word Processing</td>
<td>3</td>
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<tr>
<td>POFM 1302</td>
<td>Medical Software Applications</td>
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<tr>
<td>POFM 1309</td>
<td>Medical Office Procedures</td>
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<tr>
<td>HITT 1305</td>
<td>Medical Terminology I</td>
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Second Semester

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<tbody>
<tr>
<td>BIOL 2404</td>
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<td>HPRS 2332</td>
<td>Health Care Communications</td>
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<td>POFM 1317</td>
<td>Medical Administrative Support</td>
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SECOND YEAR

First Semester

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<td>ENGL 1301</td>
<td>Composition &amp; Rhetoric I</td>
<td>3</td>
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<td>HPRS 2331</td>
<td>General Health Professions Mgmt.</td>
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<td>POFM 2310</td>
<td>Intermediate Medical Coding</td>
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<td>KINE</td>
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<td>POFM 2333</td>
<td>Medical Document Production</td>
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<td>SPCH 1311</td>
<td>Intro to Speech Communications OR</td>
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<td>SPCH 1318</td>
<td>Interpersonal Communications OR</td>
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<td>SPCH 1321</td>
<td>Business Speech</td>
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Second Semester

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<td>Medical Law and Ethics for Health Professionals</td>
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<td>HPRS 2331</td>
<td>General Health Professions Mgmt.</td>
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<td>Elective1</td>
<td>Social/Behavioral Science</td>
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**SEMESTER TOTAL** | **16** |
## DEGREES AND CERTIFICATES

### LEGAL OFFICE RECEPTIONIST CERTIFICATE
(certificate offered at Kingwood College)

**FIRST YEAR**

<table>
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<th>First Semester</th>
<th>Credit</th>
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<tbody>
<tr>
<td>POFL 1303</td>
<td>Legal Office Procedures 3</td>
</tr>
<tr>
<td>POFL 1305</td>
<td>Legal Terminology 3</td>
</tr>
<tr>
<td>POFT 1301</td>
<td>Business English 3</td>
</tr>
<tr>
<td>POFT 1329</td>
<td>Beginning Keyboarding 3</td>
</tr>
<tr>
<td>ITSC 1401</td>
<td>Intro to Word Processing 3</td>
</tr>
<tr>
<td>ITSC 1401</td>
<td>Introduction to Computers 4</td>
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<tr>
<td>COSC 1401</td>
<td>Microcomputer Applications 4</td>
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</table>

**TOTAL Credit Hours for Legal Office Receptionist Certificate** 16

1. Capstone course

### LEGAL SECRETARY CERTIFICATE
(certificate offered at Kingwood College)

**FIRST YEAR**

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<tbody>
<tr>
<td>POFL 1303</td>
<td>Legal Office Procedures 3</td>
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<td>POFL 1305</td>
<td>Legal Terminology 3</td>
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<td>POFT 1301</td>
<td>Business English 3</td>
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<td>POFT 1329</td>
<td>Beginning Keyboarding 3</td>
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<tr>
<td>ITSC 1301</td>
<td>Intro to Word Processing 3</td>
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<tr>
<td>ITSC 1401</td>
<td>Introduction to Computers 4</td>
</tr>
<tr>
<td>COSC 1401</td>
<td>Microcomputer Applications 4</td>
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**TOTAL Credit Hours for Legal Secretary Certificate** 16

### SECOND YEAR

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<tr>
<th>First Semester</th>
<th>Credit</th>
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<tbody>
<tr>
<td>BUSI 2301</td>
<td>Business Law I OR</td>
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<tr>
<td>Elective</td>
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<td>ENGL 1301</td>
<td>Composition &amp; Rhetoric I 3</td>
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<td>ITSC 1404</td>
<td>Introduction to Spreadsheets 4</td>
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<td>POFL 1380</td>
<td>Cooperative Education OR</td>
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<td>POFT 1381</td>
<td>Cooperative Education OR</td>
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<tr>
<td>POFT 1331</td>
<td>Administrative Systems 3</td>
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<tr>
<td>POFT 2301</td>
<td>Doc. Formatting &amp; Skillbuilding OR 3</td>
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**TOTAL Credit Hours for Legal Assistant Administrative Certificate** 47

1. Capstone course
2. Technical electives include POFT, POFM, POFL, ACNT, BUSG, IBUS, or departmental approval.

### LEGAL OFFICE SPECIALIZATION
Associate of applied science degree, Tech Prep
(specialization offered at Kingwood College)

**FIRST YEAR**

<table>
<thead>
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<th>Credit</th>
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<tr>
<td>ITSC 1401</td>
<td>Introduction to Computers OR</td>
</tr>
<tr>
<td>COSC 1401</td>
<td>Microcomputer Applications 4</td>
</tr>
<tr>
<td>ITSC 1301</td>
<td>Intro to Word Processing OR</td>
</tr>
<tr>
<td>POFT 1329</td>
<td>Beginning Keyboarding 3</td>
</tr>
<tr>
<td>POFL 1303</td>
<td>Legal Office Procedures 3</td>
</tr>
<tr>
<td>POFT 1301</td>
<td>Business English 3</td>
</tr>
</tbody>
</table>

**TOTAL Credit Hours for Legal Office Specialization** 63

1. Choose elective to meet the multicultural component.
2. Capstone course
3. Student must meet math competency.

### LEGAL ADMINISTRATIVE ASSISTANT CERTIFICATE
(certificate offered at Kingwood College)

**FIRST YEAR**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Credit</th>
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<tbody>
<tr>
<td>POFL 1303</td>
<td>Legal Office Procedures 3</td>
</tr>
<tr>
<td>POFL 1305</td>
<td>Legal Terminology 3</td>
</tr>
<tr>
<td>POFT 1301</td>
<td>Business English 3</td>
</tr>
<tr>
<td>POFT 1329</td>
<td>Beginning Keyboarding OR</td>
</tr>
<tr>
<td>ITSC 1301</td>
<td>Intro to Word Processing</td>
</tr>
<tr>
<td>ITSC 1401</td>
<td>Introduction to Computers OR</td>
</tr>
<tr>
<td>COSC 1401</td>
<td>Introduction to Computers 4</td>
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**SECOND YEAR**

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<tr>
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<tbody>
<tr>
<td>ACNT 1303</td>
<td>Introduction to Accounting I 3</td>
</tr>
<tr>
<td>POFL 2301</td>
<td>Legal Document Processing 3</td>
</tr>
<tr>
<td>POFL 2305</td>
<td>Legal Research 3</td>
</tr>
<tr>
<td>POFL 2380</td>
<td>Cooperative Education OR</td>
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<td>POFT 2331</td>
<td>Administrative Systems 3</td>
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<tr>
<td>SPCH 1311</td>
<td>Intro to Speech Communications OR 3</td>
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<td>SPCH 1318</td>
<td>Interpersonal Communications OR</td>
</tr>
<tr>
<td>SPCH 1321</td>
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</table>

**TOTAL Credit Hours for Legal Administrative Assistant Certificate** 63

1. Capstone course
2. Technical electives include POFT, POFM, POFL, ACNT, BUSG, IBUS, or departmental approval.

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RESPIRATORY CARE

The course of study for a respiratory therapist is a 66-credit-hour (six semesters) associate of applied science degree program. The respiratory care program prepares graduates for the credentialing examinations from the NBRC (National Board for Respiratory Care). The program is fully accredited by the CAAHEP (Committee on Accreditation of Allied Health Education Programs) through the COARC (Committee on Accreditation of Respiratory Care Education Programs). The respiratory care program prepares graduates to be competent in delivery of therapeutic procedures in acute care settings, in performing diagnostic procedures, and in performing rehabilitation therapeutic procedures. The respiratory care program also prepares graduates to assist physicians in the diagnosis of cardiopulmonary disorders, to providing emergency cardiopulmonary care in the emergency room, and to implement therapist driven protocols in the practice of respiratory care. Many clinical facilities will require students to successfully pass a background check. Areas for employment of respiratory care professionals include acute care hospitals, sub-acute care hospitals, rehabilitation hospitals, hyperbaric medicine, home care facilities, and physician offices.

The general education core will transfer to a variety of colleges and universities. Contact a counselor, or faculty member at any of the colleges for specific information and to obtain the recommended sequencing of courses. The sequence of courses can also be found at www.nhmccd.edu/catalog/.

**General Guidelines**

Upon acceptance into the program, students must submit a record of current immunizations required by the Texas Department of Health. Criminal background checks may be required by clinical facilities. The background check will be processed through the Federal Bureau of Investigations (FBI).

Completion of the respiratory care program does not guarantee eligibility to take the CRT exam administered by the NBRC or certification by the Texas Department of Health. The Texas Department of Health Respiratory Care Certification will consider individuals with histories of felony convictions, mental illness and/or chemical dependency on an individual basis after review.

**Admissions Criteria:**

The respiratory care program begins in the spring semester. Completion is in the fall semester of the second year.
In addition to the district admission requirements, the following are requirements for the respiratory therapist program:

Pre-Application:
1. Graduation from high school verified with high school transcript; OR GED certificate verified by a copy of the certificate;
2. Official transcripts from all colleges or universities previously attended;
3. ASSET test scores of 41 on reading and 45 on writing, and a score of 15 on the local math test OR the eligibility to enter ENGL 1301 and MATH 0310 by completion of ENGL 0305 and 0307 with a grade of “A” or “B”. Completion of MATH 0308 with a grade of “A” or “B” OR pass the reading section on the THEA. Score a 15 on the local math test OR score a 19 on the reading section and a score of 19 on the math section of the ACT test.

Pre-Admission:
4. Minimum age of 18 for completion of the respiratory care therapist program.
5. MANDATORY attendance at a scheduled orientation session.

Student Selection:
6. Students are ranked and selected on the following criteria by the admissions committee.
   a. Completion of all general academic courses for the respiratory care program.
   b. Completion of BIOL 2401 and any college level Math course.
   c. GPA
   d. Date of application.
7. A physical examination report, with laboratory tests and immunization records signed by a licensed physician within three weeks of the first class day. (Form provided.)
8. A CPR course for healthcare professionals (offered through the Continuing Education department with a non-credit course or the physical education department with a credit course.)
9. Hepatitis B vaccination is required for all admissions to the respiratory care program. The enrolling student must begin the series of three vaccines prior to entering the clinical practicum in the hospital setting.

RESPIRATORY CARE THERAPIST
Associate of applied science degree
(degree offered at Kingwood College)

FIRST YEAR

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Credit</th>
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<tbody>
<tr>
<td>RSPT 1207 Cardiopulmonary A&amp;P</td>
<td>2</td>
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<tr>
<td>RSPT 1166 Practicum</td>
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<tr>
<td>RSPT 1201 Intro to Respiratory Care</td>
<td>2</td>
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<tr>
<td>RSPT 1325 Respiratory Care Sciences</td>
<td>3</td>
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<tr>
<td>RSPT 1429 Respiratory Care Fundamentals I</td>
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<table>
<thead>
<tr>
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<tbody>
<tr>
<td>RSPT 1213 Basic Respiratory Care Pharm.</td>
<td>2</td>
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<tr>
<td>RSPT 1160 Clinical</td>
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<tr>
<td>RSPT 1431 Respiratory Care Fundamentals II</td>
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<tr>
<td>BIOL 2401 Anatomy &amp; Physiology I</td>
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<tr>
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<th>Credit</th>
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<tbody>
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<tr>
<td>RSPT 2210 Cardiopulmonary Disease</td>
<td>2</td>
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<tr>
<td>RSPT 2414 Mechanical Ventilation</td>
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<td>BIOL 2402 Human Anatomy &amp; Physiology II</td>
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SECOND YEAR

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<thead>
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<th>First Semester</th>
<th>Credit</th>
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<tbody>
<tr>
<td>RSPT 1241 Respiratory Home Care/Rehabilit.</td>
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<tr>
<td>BIOL 2420 Medical Microbiology</td>
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<tr>
<td>RSPT 2166 Practicum</td>
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<tr>
<td>RSPT 2325 Cardiopulmonary Diagnostics</td>
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</tr>
<tr>
<td>RSPT 2353 Neonatal/Pediatric Cardiopulmonary Care</td>
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<td><strong>SEMESTER TOTAL</strong></td>
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<tr>
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<tr>
<td>KINE</td>
<td>Physical Activity</td>
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<tr>
<td>RSPT 2160 Clinical</td>
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<tr>
<td>RSPT 2139 Advanced Cardiac Life Support</td>
<td>1</td>
</tr>
<tr>
<td>RSPT 2243 Research Application</td>
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</tr>
<tr>
<td>PSYC 2301 General Psychology</td>
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</tr>
<tr>
<td>Elective Humanities/Fine Arts</td>
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<table>
<thead>
<tr>
<th>Third Semester</th>
<th>Credit</th>
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<tbody>
<tr>
<td>ENGL 1301 Composition &amp; Rhetoric I</td>
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<tr>
<td>RSPT 2230 Examination Preparation</td>
<td>2</td>
</tr>
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<td>RSPT 2366 Practicum</td>
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</tbody>
</table>
DEGREES AND CERTIFICATES

TOTAL Credit Hours for AAS Degree 66

1 Capstone course
2 Select course to meet multicultural requirement.
* Student must meet math competency

VETERINARY TECHNOLOGY

The two-year veterinary technology associate of applied science degree provides the graduate with information, skills and experience they will need to follow a fulfilling career in a veterinary hospital, a zoological garden, industry, a medical research laboratory, a governmental regulatory program or the Veterinary Medical Corp.

Gaining its accredited status in 1990, today the veterinary technology program boasts a 99.8 passage rate on the State and National Board Examination. This success rate is unparalleled in the State of Texas and is rated as one of the highest passage percentage of the 104 programs accredited by the American Veterinary Medical Association.

Because the veterinary technology program is fully accredited by the American Veterinary Medical Association, students are eligible to take all State and National Board examinations as well as work in all areas of animal health care. An individual spends time in laboratories working with cows, dogs, cats, horses, pigs, sheep, goats, exotics and even the more traditional laboratory animals like mice and rabbits. Upon graduation the student is free to pursue any type of animal care situation they so desire.

Job opportunities for registered veterinary technician graduates has never been better. Today there are from 8 to 10 jobs available to each graduate just in the immediate Harris County area. As well as the impressive job market, it should be mentioned that scholarships are also available while the student is enrolled.

The general education core will transfer to a variety of colleges and universities. The entire 72 hours of credit in the veterinary technology program will transfer to some traditional four year colleges so students may pursue a four year baccalaureate degree in either animal science or agricultural business. Contact an adviser, or faculty member at any of the colleges for specific information and to obtain the recommended sequencing of courses. The sequence of courses can also be found at www.nhmccd.edu/

General Guidelines

Any student anticipating entrance into the veterinary technology program should ensure that remediation is not required after admission examinations are completed and have been reviewed. If admission examinations indicate the student is in need of remediation in math, English or reading, the student must successfully complete those requirements before applying for entry into the Veterinary Technology program.

Admission Procedure

In addition to the admission requirements of the NHMCCD district, the following are requirements for admission into the veterinary technology associate of applied science degree veterinary technology program:

1. ACT scores of: Math 24+ Writing 19+ Reading 19+ College Math TSI met (if within 5 yrs)
   OR SAT scores of:
   Math 520+ Writing 500+ Reading 500
   OR THEA:
   Math 270+ Writing 220+ Reading 230+
   OR ASSET:
   Math IA 45+ or CA 23+ Writing 45+ and 6 essay or 7+ essay Reading 41+
   OR COMPASS:
   Math Alg 60+ or ColALg 0-40 Writing 85+ and 6 essay or 7+ essay Reading 81+
   OR ACCU-PLACER:
   Math 86+ Writing 80+ Reading 78+

2. Students should submit a Tomball College application along with current (official) college transcripts to the admissions department at Tomball College. After visiting with an adviser, the student should submit a separate application to the Veterinary Technology program with duplicate of college transcript. Note: the application to the program should be co-signed by Tomball College adviser during the student’s visit in
DEGREES AND CERTIFICATES

the admissions department. The veterinary technology admissions application form is also available on the college website at www.Tomballcollege.com

Program applications are reviewed and evaluated for fall admission on June 15 of each year. All applicants will be notified following applicant review date of their status.

**Progression Requirements**

There are no specific progression requirements for the veterinary technology program. However, each student is required to take VTHT 1345, VTHT 2323, VTHT 2431, VTHT 1441, and VTHT 1191 within one calendar year of registration for the Veterinary Technology Clinical VTHT 2360. Failure to complete this requirement will necessitate delay of the clinical until requirements can be met.

**Registration Examination**

Students in veterinary technology at NHMCCD are considered eligible to sit for the State and National Veterinary Technology Board Examinations when they have completed all required course work with the exception of VTHT 2360, Veterinary Technology Clinical.

**VETERINARY TECHNOLOGY CERTIFICATE**

**FIRST YEAR**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Credit</th>
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<tbody>
<tr>
<td>BIOL 1406 Biology I</td>
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<tr>
<td>ENGL 1301 Composition and Rhetoric I</td>
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<tr>
<td>VTHT 1205 Vet Medical Terminology</td>
<td>2</td>
</tr>
<tr>
<td>VTHT 1401 Intro to Veterinary Technology</td>
<td>4</td>
</tr>
<tr>
<td><strong>SEMIESTER TOTAL</strong></td>
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<table>
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<th>Credit</th>
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<tbody>
<tr>
<td>ENGL 1302 Composition and Rhetoric II</td>
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</tr>
<tr>
<td>MATH 1332 College Math for Liberal Arts</td>
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<td>VTHT 1209 Veterinary Nutrition</td>
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<tr>
<td>VTHT 1413 Veterinary A&amp;PA</td>
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<td><strong>SEMIESTER TOTAL</strong></td>
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<tr>
<th>Third Semester</th>
<th>Credit</th>
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<tbody>
<tr>
<td>VTHT 1225 Pharmacological Calculations</td>
<td>2</td>
</tr>
<tr>
<td>VTHT 1217 Veterinary Office Management</td>
<td>2</td>
</tr>
<tr>
<td>VTHT 2421 Veterinary Parasitology</td>
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<tr>
<td><strong>SEMIESTER TOTAL</strong></td>
<td><strong>8</strong></td>
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</table>

**TOTAL Credit Hours for Certificate** 33

Students should not register for VTHT or any other classes from 8-8:50 a.m., MWF or 5-5:50 p.m., TTH. These times must remain open for husbandry laboratories.

**SECOND YEAR**

**First Semester**

<table>
<thead>
<tr>
<th>Credit</th>
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<tbody>
<tr>
<td>PSYC 2301 General Psychology</td>
</tr>
<tr>
<td>VTHT 1115 Exotic Animal Care and Husbandry</td>
</tr>
<tr>
<td>VTHT 2201 Canine &amp; Feline Clinical Mgmt</td>
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<td>VTHT 2313 Lab Animal Management</td>
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<td>VTHT 2205 Equine Clinical Management</td>
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<td>VTHT 2323 Veterinary Clinical Pathology I</td>
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**Second Semester**

<table>
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<tr>
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<tbody>
<tr>
<td>VTHT 1191 Special Topics</td>
</tr>
<tr>
<td>VTHT 1345 Veterinary Radiology</td>
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<tr>
<td>VTHT 1441 Anesthesia &amp; Surgical Assistance</td>
</tr>
<tr>
<td>VTHT 2209 Food Animal Clinical Mgmt</td>
</tr>
<tr>
<td>VTHT 2431 Veterinary Clinical Pathology II</td>
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<table>
<thead>
<tr>
<th>Third Semester</th>
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<tbody>
<tr>
<td>VTHT 1191 Veterinary Radiology</td>
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<tr>
<td><strong>SEMIESTER TOTAL</strong></td>
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</tbody>
</table>

**TOTAL Credit Hours for AAS Degree** 72

1. Course must meet the multicultural requirement
2. Capstone course
3. First year students should not register for VTHT or any other classes from 8 - 8:50 a.m., MWF or 5 - 5:50 p.m., TTH. These times must be left open for husbandry lab.
DEGREES AND CERTIFICATES

VISUAL COMMUNICATION

The Visual Communication program trains today's digital designers in the communication media of the future. This program provides students with skills needed for careers in commercial art and design, desktop publishing, web design, 3-D animation, multimedia development, video and post-production. The demand for these skills comes from a variety of industries including advertising, consumer products, education, entertainment, government, legal, manufacturing, medical, petroleum, publishing, transportation, and video production. The Visual Communication Associate of Applied Science Degree is awarded for successful completion of at least 67 credit hours that include a common core of academic and a selection of technical courses based on specialization.

This degree has five areas of specialization: graphic design, multimedia, video and post-production, web design, or 3D animation. Students completing the degree or certificate are prepared for entry-level positions. Certificates are available within specialization areas in graphic design, motion graphics, video and post-production, multimedia design, 3D animation, and web design. These certificates provide an opportunity to acquire technical skills in two to three semesters.

The general education core courses will transfer to a variety of universities, and the degree articulates to many area universities. Please see the department chair, faculty, or adviser for specific information.

3D ANIMATION CERTIFICATE
(certificate offered at North Harris College)

FIRST YEAR

First Semester Credit

<table>
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<tr>
<th>Course</th>
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<tbody>
<tr>
<td>ARTV 1345 3-D Modeling and Rendering I</td>
<td>3</td>
</tr>
<tr>
<td>ARTS 1316 Drawing I</td>
<td>3</td>
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<tr>
<td>ARTC 1302 Digital Imaging I</td>
<td>3</td>
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<tr>
<td>IMED 1301 Introduction to Multimedia</td>
<td>3</td>
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<td>ITSC 1401 Introduction to Computers OR</td>
<td>4</td>
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<td>COSC 1401 Microcomputer Applications</td>
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Second Semester Credit

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<tbody>
<tr>
<td>ARTV 1303 Basic Animation</td>
<td>3</td>
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<tr>
<td>ARTV 1341 3-D Animation I</td>
<td>3</td>
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<tr>
<td>ARTS 1312 Design II, 3-D</td>
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<td>ARTS 1317 Drawing II</td>
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<td>ARTV 1351 Digital Video</td>
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Third Semester Credit

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<tbody>
<tr>
<td>ARTC 2341 3-D Animation II</td>
<td>3</td>
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<tr>
<td>FLMC 1331 Computers in Video Production I</td>
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<td>IMED 2311 Portfolio Development OR</td>
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TOTAL Credit Hours for 3D Animation Certificate 40

1 Capstone course

GRAPHIC DESIGN CERTIFICATE
(certificate offered at Cy-Fair College, Kingwood College, North Harris College, and Tomball College)

FIRST YEAR

First Semester Credit

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<tbody>
<tr>
<td>ARTS 1311 Design I - 2-D</td>
<td>3</td>
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<tr>
<td>ARTS 1316 Drawing I</td>
<td>3</td>
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<tr>
<td>ARTS 2311 Design III-Color</td>
<td>3</td>
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<tr>
<td>ARTC 1313 Digital Imaging I</td>
<td>3</td>
</tr>
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<td>ARTC 1302 Digital Publishing I</td>
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Second Semester Credit

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<tbody>
<tr>
<td>ARTC 2313 Digital Publishing II</td>
<td>3</td>
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<tr>
<td>ARTC 2305 Digital Imaging II</td>
<td>3</td>
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<td>ARTC 1353 Computer Illustration</td>
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<td>ITSW 1310 Intro. to Presentation Graph. Software</td>
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Third Semester Credit

<table>
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<tbody>
<tr>
<td>IMED 1305 Multimedia Courseware Dev I</td>
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<tr>
<td>ARTC 2347 Design Communication II</td>
<td>3</td>
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<tr>
<td>ARTC 2348 Digital Publishing III</td>
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<td>ARTC 2335 Portfolio Development for Graphic Design OR</td>
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<tr>
<td>GRPH 2380 Co-op Education-Prepress/Desktop Pub. and Digital Imag. Design</td>
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TOTAL Credit Hours for Graphic Design Certificate 42

1 Capstone course
### MOTION GRAPHICS CERTIFICATE
(certificate offered at Cy-Fair College, Kingwood College and North Harris College)

#### FIRST YEAR

<table>
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<tr>
<th>First Semester</th>
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<tbody>
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<td>IMED 1316</td>
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<td>ITSC 1401</td>
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**TOTAL Credit Hours for Motion Graphics for Television & Video Certificate**: 37

1 Capstone course

### MULTIMEDIA DESIGNER CERTIFICATE
(certificate offered at Cy-Fair College, Kingwood College and North Harris College)

#### FIRST YEAR

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<td>ARTC 1302</td>
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<tr>
<td>FLMC 2331</td>
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<tr>
<td>IMED 1341</td>
<td>3</td>
</tr>
<tr>
<td>RTVB 2381</td>
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**TOTAL Credit Hours for Multimedia Designer Certificate**: 37

1 Capstone course

### VIDEO AND POST PRODUCTION CERTIFICATE
(certificate offered at Cy-Fair College, Kingwood College and North Harris College)

#### FIRST YEAR

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<td>RTVB 1321</td>
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<td>FLMC 2331</td>
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<td>IMED 2311</td>
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<td>IMED 2380</td>
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**TOTAL Credit Hours for Video and Post Production Certificate**: 37

1 Capstone course

### WEB DESIGN CERTIFICATE
(certificate offered at North Harris College)

#### FIRST YEAR

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<th>Credit</th>
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<tbody>
<tr>
<td>ARTC 1317</td>
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<td>ARTC 1302</td>
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<tr>
<td>IMED 1301</td>
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<td>ITSC 1401</td>
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**TOTAL Credit Hours for Web Design Certificate**: 37

1 Capstone course
DEGREES AND CERTIFICATES

ITSE 1402 Computer Programming 4
SEMESTER TOTAL 17

Second Semester Credit
ARTC 1353 Computer Illustration 3
IMED 1316 Web Page Design I 3
IMED 1341 2-D Interface Design 3
IMED 1345 Interactive Multimedia I 3
SEMESTER TOTAL 12

Third Semester Credit
IMED1 2311 Portfolio Development OR 3
IMED1 2380 Cooperative Education 3
IMED 2309 Internet Commerce 3
IMED 2315 Web Page Design II 3
IMED 2345 Interactive Multimedia II 3
SEMESTER TOTAL 12

TOTAL Credit Hours for Web Design Certificate 41

1 Capstone course

VISUAL COMMUNICATION
Associate of applied science degree, Tech Prep
(offerred at Cy-Fair College, Kingwood College, and North Harris College)

FIRST YEAR

First Semester
ARTS 1311 Design I 2-D 3
ARTS 1316 Drawing I 3
ARTC 1302 Digital Imaging I 3
ARTC 1317 Design Communication I 3
IMED 1301 Introduction to Multimedia 3
ITSC 1401 Introduction to Computers OR 4
COSC 1401 Microcomputer Applications 3
Elective1 Social/Behavioral Science 3
SEMESTER TOTAL 22

Second Semester Credit
ENGL 1301 Composition and Rhetoric I 3
KINE Physical Activity 1
Tech .Track Track (A, B, C, D, or E) 3
Tech .Track Track (A, B, C, D, or E) 3
Tech .Track Track (A, B, C, D, or E) 4
SEMESTER TOTAL 14

SECOND YEAR

First Semester Credit
SPCH2 Speech Elective 3
Tech .Track Track (A, B, C, D, or E) 3
Tech .Track Track (A, B, C, D, or E) 3
Tech .Track Track (A, B, C, D, or E) 3
Tech .Track Track (A, B, C, D, or E) 3
SEMESTER TOTAL 15

Second Semester Credit
Tech .Track Track (A, B, C, D, or E) 3
Tech .Track Track (A, B, C, D, or E) 3
Tech .Track Track (A, B, C, D, or E) 3
Capstone Math/Natural Science 4
Capstone Cooperative Education OR 3
Portfolio Development SEMESTER TOTAL 16

TOTAL Credit Hours for Visual Communication AAS 67

1 Social/Behavioral Science course must meet multicultural requirement
2 Speech course from SPCH 1311, 1315, 1318 or 1321
3 Choose math/science elective from AAS core requirements
* Student must meet math competency
4 Capstone course: choose from GRPH 2380, IMED 2380, RTVB 2381, ARTC 2335 or IMED 2311

Choose Technical Track courses A, B, C, D or E from following corresponding tracks:

Track A-Graphic Design
ARTC 1313, ARTC 2313, ARTC 2305, ARTC 1353
ARTC 2348, ARTC 2347, ARTS 2311,
IMED 1305, ITSW 1310; Technical/Academic
Elective (choose from ARTC 2335, ARTS 1301, 1303,
1304, 1317, 2316; FLMC 1331; GRPH 1395, 2380;
MRKG 2349)

Track B-Multimedia
IMED 1316, IMED 1341, IMED 2313, ARTC 1353,
ARTV 1345, IMED 1305 or FLMC 1331, IMED 1345
ARTV 1351, IMED 2345, IMED 2305 or FLMC 2331
These courses must be taken in designated sequence:
FLMC 1331 and FLMC 2331 or IMED 1305 and IMED 2305
* These courses must be taken in designated sequence:
FLMC 1331 and FLMC 2331 or IMED 1305 and IMED 2305

Track C-Video and Post-Production
ARTV 1351, FLMC 1304, RTVB 1321 or RTVB 1325,
FLMC 1331, ARTC 2305, ARTV 2341, IMED 1391,
FLMC 2331
Elective Technical (choose 2 courses from ARTC,
IMED, FLMC,RTVB)

Track D-Web Design
ARTC 1353, IMED 1316, IMED 1341, IMED 2313,
IMED 1345, IMED 2315, ITSE 1402, IMED 2309,
IMED 2349, IMED 2345

Track E- 3D Animation
ARTV 1301, ARTV 1345, ARTS 1317, ARTS 1312,
ARTV 1341, FLMC 1331, ARTV 1351, ARTS 2323,
ARTC 2341, GAME 1303
WELDING TECHNOLOGY

The associate of applied science degree in welding technology is designed to prepare the individual for a career as a welding technician in the fabrication, construction and manufacturing industries. The program includes hands-on application of SMAW, GTAW, GMAW, FCAW and SAW processes, in all positions, using pipe, plate and structural shapes. The student is also exposed to basic metallurgy and inspection procedures. The academic requirements of the program provide the foundation for continued studies should the student desire to continue his or her education.

The welding technology certificate program prepares the student for entry-level employment as a structural welder. The program provides the essential skills and safety practices in SMAW welding procedures in both structural plate and pipe. Courses completed in this certificate program may be applied toward the welding technology associate of applied science degree.

Creation of a product or system requires inspection and testing to ensure conformance to specification and reliability of operation. The certificate programs in nondestructive inspection and nondestructive testing are designed to train students in entry level skills relevant to such industries as shipbuilding, aeronautic, piping and vessel fabrication, bridge, building and residential construction. The introduction of ISO (International Organization for Standardization) has expanded and enhanced the demand for qualified inspectors and NDT technicians.

New developments in the fields of space exploration, oceanography and nanotechnology, as well as the demand for lighter and stronger engineering materials, improved coating for materials and advanced welding techniques mean that inspectors and technicians must receive a higher level of training.

The nondestructive testing certificate is intended to provide training to meet the challenges of the twenty-first century. Testing methods covered include codes (AWS, ASME), metallurgy, liquid penetrant, magnetic particle and ultrasonics. Courses meet the requirements of American Society of Nondestructive Testing (ASNT) recommended practice SNT-TC-1A.

The nondestructive inspection certificate includes film (radiography) interpretation and other means of inspecting a material, weldment or product while maintaining structural integrity. This certificate program provides an in-depth coverage of the American Welding Society (AWS) and American Society of Mechanical Engineering (ASME) codes for structural welding and pressure vessel fabrication. This program adequately prepares students for the AWS Certified Welding Inspector (CWI) examination.

The general education core will transfer to a variety of colleges and universities. Contact a counselor, or faculty member at any of the colleges for specific information and to obtain the recommended sequencing of courses. The sequence of courses can also be found at: www.nhmccd.edu/catalog/

**WELDING TECHNOLOGY CERTIFICATE**

(certificate offered at Cy-Fair College and North Harris College)

**FIRST YEAR**

<table>
<thead>
<tr>
<th>First Semester</th>
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<tr>
<td>WLDG 1428 Intro to Shielded Met. Arc Welding</td>
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<tr>
<td>WLDG 1430 Intro to Gas Metal Arc Welding OR</td>
<td>4</td>
</tr>
<tr>
<td>WLDG 1434 Intro to Gas Tungsten Arc Welding</td>
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<tbody>
<tr>
<td>WLDG 1413 Intro to Blueprint Reading</td>
<td>4</td>
</tr>
<tr>
<td>WLDG 1435 Intro to Pipe Welding</td>
<td>4</td>
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<td>WLDG 1457 Interm. Shielded Met. Arc Welding</td>
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<tr>
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<tr>
<td>WLDG 2447 Adv. Gas Metal Arc Welding OR</td>
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<td>WLDG 2451 Adv. Gas Tungsten Arc Welding</td>
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<tr>
<td>WLDG 2453 Advanced Pipe Welding</td>
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**TOTAL Credit Hours for**

Welding Technology Certificate 31

1 Capstone course
DEGREES AND CERTIFICATES

WELDING TECHNOLOGY SPECIALIZATION

Associate of Applied Science Degree, Tech Prep
(degree offered at Cy-Fair College
and North Harris College)

FIRST YEAR

First Semester

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>CHEM 1405 Introductory Chemistry</td>
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<td>ENGL 1301 Composition &amp; Rhetoric I</td>
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<td>TECM 1303 Technical Mathematics</td>
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<tr>
<td>WLDG 1421 Intro to Welding Fundamentals</td>
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<td>WLDG 1428 Intro to Shielded Metal Arc Wldg</td>
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Second Semester

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<tr>
<td>ITSC 1401 Introduction to Computers</td>
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<td>WLDG 5 1413 Intro to Blprtn Rdng for Welders</td>
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<tr>
<td>WLDG 1430 Intro to Gas Met. Arc Wldg OR</td>
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<td>WLDG 1434 Intro to Gas Tungsten Arc Wldg</td>
<td>4</td>
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<td>WLDG 1457 Interim. Shielded Met. Arc Wldg</td>
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Third Semester

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SECOND YEAR

First Semester

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<td>SPCH 1311 Intro to Speech Communications</td>
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<tr>
<td>WLDG 1435 Intro to Pipe Welding I</td>
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<td>WLDG 2447 Adv. Gas Met. Arc Wldg OR</td>
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<td>WLDG 2451 Adv. Gas Tungsten Arc Wldg</td>
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Second Semester

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<td>HUMA 3 1301 Intro to the Humanities</td>
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<tr>
<td>METL 1405 Welding Metallurgy</td>
<td>4</td>
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<td>QCTC 1446 Testing &amp; Inspection Systems</td>
<td>4</td>
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<td>WLDG 2453 Advanced Pipe Welding</td>
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<td>WLDG 1 2380 Cooperative Education</td>
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TOTAL Credit Hours for Welding Technology Specialization 69-70

1 See college catalog for Associate of Applied Science Degree graduation requirements.
2 Electives to be selected from the following: WLDG 1417, NDTE 1311; or QCTC 2331.
3 Meets Multicultural Requirement
4 A required Capstone experience is completed by taking either WLDG 2380 or the AWS Entry-level Welder Certificate Exam.
5 Course only offered in Spring Semester.

INSPECTION CERTIFICATE

(certificate offered at North Harris College)

FIRST YEAR

First Semester

<table>
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<th>Course</th>
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<tr>
<td>METL 1405 Welding Metallurgy</td>
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<td>NDTE 1410 Liq. Penetrant/Mag. Particle Testing</td>
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<td>NDTE 1454 Intermediate Ultrasonic Testing</td>
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<td>QCTC 1446 Testing &amp; Inspection Systems</td>
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Second Semester

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<tr>
<td>NDTE 1301 Film Interpretation of Weldments</td>
<td>3</td>
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<tr>
<td>NDTE 2401 Advanced Ultrasonic Testing</td>
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<td>QCTC 2331 Standards</td>
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<td>NDTE 2311 Prep. for WLDG Inspection</td>
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<td>WLDG 1 2380 Cooperative Education</td>
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TOTAL Credit Hours for Inspection Certificate 32

1 Capstone course

INSPECTION TECHNOLOGY SPECIALIZATION

Associate of Applied Science Degree
(degree offered at North Harris College)

FIRST YEAR

First Semester

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>ITSC 1401 Introduction to Computers</td>
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<tr>
<td>NDTE 1410 Liq. Penetrant/Mag. Particle Testing</td>
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<td>QCTC 1446 Testing and Inspection Systems</td>
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<td>TECM 1303 Technical Mathematics</td>
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Second Semester

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<tr>
<td>CHEM 1405 Introductory Chemistry</td>
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<td>ENGL 1301 Composition &amp; Rhetoric I</td>
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<td>NDTE 1454 Intermediate Ultrasonic Testing</td>
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<td>QCTC 2331 Standards</td>
<td>3</td>
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<tr>
<td>NDTE 2311 Prep. for WLDG Inspection</td>
<td>3</td>
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Third Semester

<table>
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<tbody>
<tr>
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<td>Social/Behavioral Science</td>
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SECOND YEAR

First Semester

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<tr>
<td>HUMA 1 1301 Introduction to the Humanities</td>
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<tr>
<td>METL 1405 Welding Metallurgy</td>
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NDTE 2401 Advanced Ultrasonic Testing 4
SPCH 1311 Intro to Speech Communications 3

**SEMESTER TOTAL** 17

**Second Semester**

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<th>Course</th>
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<tr>
<td>Elective 4</td>
<td>Technical/Academic 3-4</td>
</tr>
<tr>
<td>NDTE 1301</td>
<td>Film Interpretation of Weldments 3</td>
</tr>
<tr>
<td>NDTE 1471</td>
<td>Eddy Current Testing 4</td>
</tr>
<tr>
<td>WLDG 2380</td>
<td>Cooperative Education 3</td>
</tr>
</tbody>
</table>

**SEMESTER TOTAL** 13-14

**TOTAL Credit Hours for Inspection Technology Specialization** 68-70

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1. See college catalog for AAS degree requirements.
2. Free elective from any 3-4 credit hour course.
3. Meets multicultural requirement
4. Approved electives to be selected from any WLDG course, any advanced computer course, or PHIL 2306.
5. A required Capstone experience is completed by taking either WLDG 2380 or one of the following certification exams awarded by industry:
   - Senior Welding Inspector (American Welding Society)
   - Certified Welding Inspector (AWS)
   - API 510 (American Petroleum Institute)
   - API 570 (API)
   - API 653 (API)
   - Level II or III (ASNT-RP SNT-TC-1A)
   - Radiographic Interpreter (AWS)
   - Penetrant Testing, Magnetic Particle Testing, Ultrasonic Testing (AWS)

**METAL ARTS CERTIFICATE**
(Certificate offered at Cy-Fair College)

**FIRST YEAR**

**First Semester**

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>ARTS 1316</td>
<td>Drawing I 3</td>
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<tr>
<td>WLDG 1405</td>
<td>Art Metals 4</td>
</tr>
<tr>
<td>WLDG 1421</td>
<td>Intro to Welding Fundamentals 4</td>
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**SEMESTER TOTAL** 11

**Second Semester**

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<tr>
<td>WLDG 1434</td>
<td>Intro to Gas Tungsten Arc Wldg 4</td>
</tr>
<tr>
<td>WLDG 1442</td>
<td>Metal Sculpture 4</td>
</tr>
<tr>
<td>ARTS 1311</td>
<td>Design I - 2-D 3</td>
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**SEMESTER TOTAL** 11

**TOTAL Credit Hours for Metal Arts Certificate** 19

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**SECOND YEAR**

**First Semester**

<table>
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<tr>
<th>Course</th>
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<tr>
<td>ARTS 1301</td>
<td>Art Appreciation OR 3</td>
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<tr>
<td>ARTS 1303</td>
<td>Art History Survey I OR 3</td>
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<tr>
<td>ARTS 1304</td>
<td>Art History Survey II 3</td>
</tr>
<tr>
<td>WLDG 2413</td>
<td>Interm Wldg Using Mult Processes 4</td>
</tr>
<tr>
<td>WLDG 2433</td>
<td>Metalsmithing 4</td>
</tr>
<tr>
<td>TECM 1303</td>
<td>Tech Math 3</td>
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**SEMESTER TOTAL** 14

**Second Semester**

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<tr>
<td>ARTS 1312</td>
<td>Design II 3-D 3</td>
</tr>
<tr>
<td>WLDG 1437</td>
<td>Intro to Metallurgy 4</td>
</tr>
<tr>
<td>WLDG 2440</td>
<td>Advanced Art Metal 4</td>
</tr>
<tr>
<td>WLDG 2380</td>
<td>Cooperative Education 3</td>
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</tbody>
</table>

**SEMESTER TOTAL** 14

**TOTAL Credit hours for Metal Sculpture Certificate** 50

1. Capstone course
Description of Courses

The following pages contain the descriptions of all courses offered by NHMCCD. The courses are listed in alphabetical order by department.

The first digit of the course number indicates whether the course is usually taken during the first or second year. The second digit refers to the value of each course in credit hours. The third and fourth digits refer to a sequence within the subject field.

In order to offer a wide spectrum of courses to meet individual interests and needs, certain courses in specialized fields may be offered in alternate years or only at specific colleges. The student should take this into consideration when developing a long-range program. The prerequisites for any course may be waived by the Instructional VP's. The printed schedule of classes will list the specific offering of courses for each college each semester.

Abbreviations:

hrs. = hours
lec. = lecture
lab. = laboratory
ext. = external learning experience (cooperative, practicum, internship or clinical)

CREDIT COURSES

ACCT 2401 - PRINCIPLES OF ACCOUNTING I

4 Credits (3 hrs. lec., 2 hrs. lab.) An introduction to financial accounting including a study of financial statements of business entities and the measurement and reporting of assets, liabilities, equity, revenues, expenses and cash flows with emphasis on how business and economic information is generated in the accounting process. (5203015104) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing, MATH 0306

ACCT 2402 - PRINCIPLES OF ACCOUNTING II

4 Credits (3 hrs. lec., 2 hrs. lab.) An introduction to managerial accounting including a study of costs and cost behavior within business entities, the use of cost information for planning and control decisions, and product costing for purposes of inventory valuation and income determination. (5203015104) Prerequisite: ACCT 2401; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing, MATH 0306

ACNT 1193 - SPECIAL TOPICS IN TAXATION-SERVICE LEARNING

1 Credit (1 hr. lec., 1 hr. lab.) Topics address recently identified current events, skills, knowledge, and/or attitudes and behaviors pertinent to the technology or occupation and relevant to the professional development of the student. This course was designed to be repeated multiple times to improve student proficiency. This lab course is designed to provide students with 12 hours of training outside the classroom. This knowledge will enable the student to prepare tax returns at the VITA site for 20 hours. Emphasis is placed on the determination of income, statutory deductions and federal income tax liability in order to prepare individual income tax returns. The student will complete IRS testing and receive IRS recognition. Service Learning designation will appear on each student’s transcript. Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

ACNT 1303 - INTRODUCTION TO ACCOUNTING I

3 Credits (2 hrs. lec., 3 hrs. lab.) A study of analyzing, classifying, and recording business transactions in a manual and computerized environment. Emphasis is on understanding the complete accounting cycle and preparing financial statements, bank reconciliations, and payroll. Includes accounting for notes, deferrals and accruals, receivables and payables, inventory and plant assets. This course is for non-majors only. Accounting majors and transfer students should enroll in ACCT 2401. Prerequisite: ENGL 0304 and 0306, OR higher level course (ENGL 1301), OR placement by testing, MATH 0306

ACNT 1311 - INTRODUCTION TO COMPUTERIZED ACCOUNTING

3 Credits (2 hrs. lec., 2 hrs. lab.) Introduction to utilizing the computer in maintaining accounting records, making management decisions, and processing com-
DESCRIPTION OF COURSES

mon business applications with primary emphasis on a general ledger package. Prerequisite: ACNT 1303; ENGL 0304 and 0306, OR higher level course (ENGL 1301), OR placement by testing, MATH 0306

ACNT 1331 - FEDERAL INCOME TAX: INDIVIDUAL

3 Credits (3 hrs. lec.) A study of tax laws currently implemented by the Internal Revenue Service, providing a working knowledge of preparing taxes for the individual. Emphasis is placed on the determination of income, statutory deductions and federal income tax liability for individuals and sole proprietorships. This course meets the qualifying educational credit required for the CPA examination. Prerequisite: ENGL 0304 and 0306, OR higher level course (ENGL 1301), OR placement by testing, MATH 0306

ACNT 1340 - ACCOUNTING AND BUSINESS ETHICS

3 Credits (3 hrs. lec.) This course will serve as a general introduction to professional ethics in the accounting and business environments. We will discuss the fundamental ethical issues of business and society, the roles and responsibilities of accounting and auditing professionals, ethical behavior by management, and legal and professional guidelines that address the ethical concerns of society. Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

ACNT 1347 - FEDERAL INCOME TAX: PARTNERSHIPS/ CORPORATIONS

3 Credits (3 hrs. lec.) Introduction to the tax laws as currently implemented by the Internal Revenue Service providing a working knowledge of preparing taxes for a partnership, subchapter S, and corporation. Emphasis is placed on the determination of taxable income for partnerships and S corporations and C corporations, as well as on tax research and planning. This course meets the qualifying educational credit required for the CPA examination. Prerequisite: ACNT 1331, ENGL 0304 and 0306, OR higher level course (ENGL 1301), OR placement by testing, MATH 0306

ACNT 1382 - COOPERATIVE EDUCATION - ACCOUNTING TECHNICIAN

3 Credits (1 hr. lec., 20 hrs. ext.) Career-related activities encountered in the student’s area of specialization offered through an individualized agreement among the college, employer, and student. Under the supervision of the college and the employer, the student combines classroom learning with work experience. Includes a lecture component. Prerequisite: Enrollment in Professional Bookkeeper Certificate Program; completion of 15 credits in degree plan; approval of coordinator, ENGL 0304 and 0306, OR higher level course (ENGL 1301), OR placement by testing, MATH 0306

ACNT 1391 - SPECIAL TOPICS IN ACCOUNTING

3 Credits (3 hrs. lec.) A study of the process of evaluating financial statements, cash flows, and ratio analysis of businesses. Includes ratio analysis, interpretation of financial statements; account classifications; income measurements; and capital budgeting decisions. Emphasis on the relationship of comparative analysis and industry standards. Topics address recently identified current events, skills, knowledge, and/or attitudes and behaviors pertinent to the technology or occupation and relevant to the professional development of the student. This course was designed to be repeated multiple times to improve student proficiency. Prerequisite: ACNT 2303; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

ACNT 1393 - SPECIAL TOPICS IN TAXATION

3 Credits (3 hrs. lec.) Topics address recently identified current events, skills, knowledge and/or attitudes and behaviors pertinent to the technology or occupation and relevant to the professional development of the student. Includes understanding of topics in taxation that influence decision making in the areas of compliance, investing, tax planning, selection of entity formation, liability issues, and considerations for maximizing the amount of income families and individuals may retain. This course meets the qualifying educational credit required for the CPA examination. Prerequisite: ACNT 1331; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

ACNT 2303 - INTERMEDIATE ACCOUNTING

3 Credits (2 hrs. lec., 3 hrs. lab.) Critical analysis of generally accepted accounting principles, concepts, and theory underlying the preparation of financial statements. Emphasis on current theory and practice. Primary concern is with asset measurement and income determination. This course meets the qualifying educational credit required for the CPA examination. Prerequisite: ACCT 2401, ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing, MATH 0306
ACNT 2304 - INTERMEDIATE ACCOUNTING II
3 Credits (2 hrs. lec., 3 hrs. lab.) Continued in-depth analysis of generally accepted accounting principles underlying the preparation of financial statements including comparative analysis and statement of cash flow. Other topics include measuring and reporting liabilities, investments and stockholders' equity, pensions, leases, earnings per share, revenue recognition alternatives and accounting changes. This course meets the qualifying educational credit required for the CPA examination. Prerequisite: ACNT 2303, ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing, MATH 0306

ACNT 2309 - COST ACCOUNTING
3 Credits (3 hrs. lec.) A study of budgeting and cost control systems including a detailed study of manufacturing cost accounts and reports, job order costing, and process costing. Includes introduction to alternative costing methods such as activity-based and just-in-time costing. Variance analysis, standard costs, joint and by-product costing will also be discussed. This course meets the qualifying educational credit required for the CPA examination. Prerequisite: ACCT 2402, ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing, MATH 0306

ACNT 2330 - GOVERNMENTAL AND NOT-FOR-PROFIT ACCOUNTING
3 Credits (3 hrs. lec.) This course is designed to meet the objectives of generally accepted accounting principles and practices for fund accounting and reporting. Students will garner information concerning accounting, budgeting, auditing and financial reporting principles and practices for governmental and non-profit entities. The student will prepare budgets and financial statements for governmental and nonprofit organizations. This course meets the qualifying educational credit required for the CPA examination. Prerequisite: ACNT 2303

ACNT 2331 - INTERNAL CONTROL AND AUDITING
3 Credits (3 hrs. lec.) A study of internal control and auditing standards and processing used by internal auditors, managers, and independent public accountants. Emphasizes generally accepted auditing standards for cash, accounts receivable, inventory, prepaids, investments, and other assets and liabilities. Other topics include statistical sampling, vouching and auditors' reports and opinions. This course meets the qualifying educational credit required for the CPA examination. Prerequisite: ACNT 2303, ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing, MATH 0306

ACNT 2332 - ACCOUNTING INFORMATION SYSTEMS
3 Credits (3 hrs. lec.) This course is designed to provide students with the basic knowledge of data collection, retrieval, manipulation, filtering and storing of accounting information with EDP systems. This course meets the qualifying educational credit required for the CPA examination. Prerequisite: ACCT 2401 and ITSC 1401

ACNT 2333 - ADVANCED ACCOUNTING
3 Credits (3 hrs. lec.) Methods of measuring and communicating economic information, including consolidated statements, partnerships, real estate, foreign operations, and fund units. This course meets the qualifying educational credit required for the CPA examination. Prerequisite: ACNT 2304, ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing, MATH 0306

ACNT 2380 - COOPERATIVE EDUCATION
3 Credits (1 hr. lec., 20 hrs. ext.) Career-related activities encountered in the student's area of specialization offered through an individualized agreement among the college, employer, and student. Under the supervision of the college and the employer, the student combines classroom learning with work experience. Includes a lecture component. Prerequisite: ACNT 2303; Enrollment in Accounting AAS Degree program; completion of 15 credit hours in degree plan; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing, MATH 0306

ACNT 2381 - COOPERATIVE EDUCATION
3 Credits (1 hr. lec., 20 hrs. ext.) Career-related activities encountered in the student's area of specialization offered through an individualized agreement among the college, employer, and student. Under the supervision of the college and the employer, the student combines classroom learning with work experience. Includes a lecture component. Prerequisite: ACNT 2380; Enrollment in Accounting AAS degree program;
DESCRIPTION OF COURSES

Completion of 22 credits in degree plan; ENGL 0304 and 0306, OR higher level course (ENGL 1301), OR placement by testing, MATH 0306

AGRI 1131 - THE AGRICULTURE INDUSTRY

1 Credit (1 hr. lec.) Overview of world agriculture, issues, nature of the industry, and resource conservation. To provide insight regarding departmental and college programs and career opportunities in agriculture, and to provide instruction concerning academic skills. (0101035201) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing, Math 0308

AGRI 1307 - AGRONOMY

3 Credits (2 hrs. lec., 2 hrs. lab.) This course covers the fundamentals in sciences of crops, soils, and water. Principles of crop and forage production, management, plant breeding, diseases, insect control, and weed control are also discussed. (0204025101) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing, Math 0308

AGRI 1309 - COMPUTERS IN AGRICULTURE

3 Credits (2 hrs. lec., 2 hrs. lab.) This course discusses the use of computers in modern agriculture applications. Programming, languages, word processing, electronic spreadsheets, and agriculture software are also covered along with the evaluation of inputs to and outputs from farm and ranch productions. (0101015101) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing, Math 0308

AGRI 1319 - GENERAL ANIMAL SCIENCE

3 Credits (2 hrs. lec., 2 hrs. lab.) Scientific animal agriculture review. Selection, reproduction, nutrition, genetics, animal breeding, growth and development in beef cattle, sheep, horses, swine, dairy cattle, and poultry. (0202015101) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing, Math 0308

AGRI 2317 - INTRODUCTION TO AGRICULTURE ECONOMICS

3 Credits (3 hrs. lec.) Characteristics of our economic system and basic economic concepts; survey of the farm and agriculture firm and its organization and management; structure and operation of marketing system; functional and institutional aspects of agriculture finance; GAT and NAFTA programs; government farm products and relations are discussed. (0101035101) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing, Math 0308

AGRI 2321 - LIVESTOCK EVALUATION

3 Credits (2 hrs. lec., 2 hrs. lab.) The course covers the evaluation of slaughter and breeding livestock as related to growth and development, production efficiency, and carcass merit. Production records and visual evaluation are also discussed. (0202015201) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing, Math 0308

AGRI 2330 - WILDLIFE CONSERVATION AND MANAGEMENT

3 Credits (3 hrs. lec.) Principles and practices used in the production and improvement of wildlife resources. Aesthetic, ecological, and recreational uses of public and private lands. (0306015101) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

ANTH 2346 - INTRODUCTION TO ANTHROPOLOGY

3 Credits (3 hrs. lec.) Anthropology is the study of humans in all places and throughout time. This course focuses on the basic principles and concepts of the subfields of anthropology: archaeology, physical, cultural, and linguistic anthropology. (4502015101) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing
ANTH 2351 - CULTURAL ANTHROPOLGY
3 Credits (3 hrs. lec.) This course focuses on explorations of cultural diversity through the study of contemporary and recent groups of humans including their social, religious, economic, and political organization. Included will be the study of how practicing cultural relativism increases understanding of others’ cultures and how cultural anthropology can be applied to solve human problems. (4502015325) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

ARTC 1302 - DIGITAL IMAGING I
3 Credits (2 hrs. lec., 3 hrs. lab.) Digital imaging using raster image editing and/or image creation software: scanning, resolution, file formats, output devices, color systems, and image-acquisitions. Prerequisite: Competent knowledge of either Macintosh or Windows operating system

ARTC 1313 - DIGITAL PUBLISHING I
3 Credits (2 hrs. lec., 3 hrs. lab.) The fundamentals of using digital layout as a primary publishing tool and the basic concepts and terminology associated with typography and page layout. Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

ARTC 1317 - DESIGN COMMUNICATIONS I
3 Credits (2 hrs. lec., 4 hrs. lab.) Study of design development relating to graphic design terminology, tools and media, and layout and design concepts. Topics include integration of type, images and other design elements, and developing computer skills in industry standard computer programs. Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

ARTC 1349 - ART DIRECTION I
3 Credits (2 hrs. lec., 4 hrs. lab.) Creation of projects in art direction for advertising graphic campaigns encompassing products, services, or ideas. Topics include all campaign procedures from initial research and creative strategy to final execution of a comprehensive project. Prerequisite: Second Year Standing and/or departmental approval; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

ARTC 1353 - COMPUTER ILLUSTRATION
3 Credits (2 hrs. lec., 3 hrs. lab.) Mastery of the tools and transformation options of an industry-standard drawing program to create complex illustrations and follow them through to the color output stage. Includes acquisition of images through scanning and the creative use of clip art. Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

ARTC 2305 - DIGITAL IMAGING II
3 Credits (2 hrs. lec., 3 hrs. lab.) Principles of digital image processing and electronic painting. Emphasis on bitmapped or raster-based image marking and the creative aspects of electronic illustration for commercial and fine art applications. Prerequisite: ARTC 1302

ARTC 2313 - DIGITAL PUBLISHING II
3 Credits (2 hrs. lec., 3 hrs. lab.) Layout procedures from thumbnails and roughs to final comprehensive and printing; emphasis on design principles for the creation of advertising and publishing materials, techniques for efficient planning and documenting projects. Prerequisite: ARTC 1313, ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

ARTC 2335 - PORTFOLIO DEVELOPMENT FOR GRAPHIC DESIGN
3 Credits (2 hrs. lec., 4 hrs. lab.) Preparation of a portfolio comprised of completed graphic design class projects. Evaluation and demonstration of portfolio presentation methods based on the student’s specific area of study. Prerequisite: Departmental Approval

ARTC 2341 - 3-D ANIMATION II
3 Credits (2 hrs. lec., 4 hrs. lab.) Skill development in three-dimensional (3-D) modeling and rendering techniques using lighting, staging, and special effects for digital output. Emphasis on the production of three-dimensional (3-D) animation as final digital outputting using modeling, rendering, and animation software. Prerequisite: ARTV 1341

ARTC 2347 - DESIGN COMMUNICATIONS II
3 Credits (2 hrs. lec., 4 hrs. lab.) An advanced study of design, development, and art direction. Emphasis on form and content through the selection, creation, and integration of typographic, photographic, illustra-
DESCRIPTION OF COURSES

tive, and design elements. Prerequisite: ARTC 1317, ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

ARTC 2348 - DIGITAL PUBLISHING III
3 Credits (2 hrs. lec., 3 hrs. lab.) A project-based page layout course from concept to completion addressing design problems, preflight of files, color separations, and trapping techniques. Prerequisite: ARTC 2313, ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

ARTS 1301 - ART APPRECIATION
3 Credits (3 hrs. lec.) An introductory course that studies the visual arts (painting, architecture, sculpture and crafts) through an exploration of their purpose and processes. Occasional field trips are required. This course is for non-majors and art majors or minors who have little or no background in art. (5007055226) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

ARTS 1303 - ART HISTORY SURVEY I
3 Credits (3 hrs. lec.) A survey of painting, sculpture, architecture and the arts from prehistoric times to the fourteenth century. (5007035226) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

ARTS 1304 - ART HISTORY SURVEY II
3 Credits (3 hrs. lec.) A survey of painting, sculpture, architecture and the arts from the fourteenth century to the present. (5007035226) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

ARTS 1311 - DESIGN I - 2-D
3 Credits (2 hrs. lec., 4 hrs. lab.) Emphasis upon two-dimensional design; includes the fundamentals of line, form, texture, shape and space within a composition. (5004015126) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

ARTS 1312 - DESIGN II - 3-D
3 Credits (2 hrs. lec., 4 hrs. lab.) The construction of three-dimensional forms using a variety of compositional approaches and materials. (5004015326) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

ARTS 1316 - DRAWING I
3 Credits (2 hrs. lec., 4 hrs. lab.) An introductory course in freehand drawing. Involves the study of space and form through the use of perspective, line and value. (5007055226) Prerequisite: Course may be taken as a corequisite with ENGL 0305 or 0316 and ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

ARTS 1317 - DRAWING II
3 Credits (2 hrs. lec., 4 hrs. lab.) Expansion of Drawing I stressing the conceptual, expressive and compositional aspects of drawing in various media. (5007055226) Prerequisite: ARTS 1316; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

ARTS 2311 - DESIGN III - COLOR
3 Credits (2 hrs. lec., 4 hrs. lab.) The examination and application of the various systems, theories and considerations for the use of color in visual expression. (5004015326) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

ARTS 2313 - DESIGN COMMUNICATIONS I
3 Credits (2 hrs. lec., 4 hrs. lab.) This course is an introduction to creative and problem-solving aspects of graphic design using the computer and graphic software. Students will learn basic principles, techniques, compositions, visual perceptions, and strategies for graphic design. The computer and graphic software will be used as an effective tool in graphic communications. (5004015126) Prerequisite: ARTS 1311; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

ARTS 2314 - DESIGN COMMUNICATIONS II
3 Credits (2 hrs. lec., 4 hrs. lab.) This course is an in-depth study and exploration of graphic design as a creative and problem-solving tool of visual com-
munication. A translation of ideas and concepts into comprehensible visual language is emphasized. Typography, semantics, and computer and technical processes used in design will be stressed. This course is an introduction to the techniques and processes of the print media. The students will also be introduced to historical and aesthetic issues. (5004015126) Pre-requisite: ARTS 2313; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

ARTS 2316 - PRINTMAKING I

3 Credits (2 hrs. lec., 4 hrs. lab.) An introduction to the techniques and procedures of printmaking. Exploration of creative design and color through traditional and contemporary printmaking techniques, including woodcut and silk-screen. (5007105126) Prerequisite: ARTS 1316 or departmental approval, ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

ARTS 2333 - PRINTMAKING II

3 Credits (2 hrs. lec., 4 hrs. lab.) Special procedures and problems involving further investigation of various printmaking media, including etching. (5007105126) Prerequisite: ARTS 2333 or departmental approval, ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

ARTS 2341 - METALS AND JEWELRY I

3 Credits (2 hrs. lec., 4 hrs. lab.) An introduction to various painting theories and techniques using oil and/or acrylics. (5007085226) Prerequisite: ARTS 1311 and 1316, or departmental approval; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

ARTS 2342 - METALS AND JEWELRY II

3 Credits (2 hrs. lec., 4 hrs. lab.) Further investigation of metal fabrication through the study of basic materials and techniques. Includes soldering, riveting, raising, sawing and filing. Students will also learn the proper maintenance and operating procedures of machines and hand tools. (5007135126) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

ARTS 2346 - CERAMICS I

3 Credits (2 hrs. lec., 4 hrs. lab.) An introduction to ceramics processes through the study of basic materials and techniques. Includes hand building, bisque, glazing and firing procedures, as well as the use of the potter’s wheel. (5007115126) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing
DESCRIPTION OF COURSES

ARTS 2347 - CERAMICS II
3 Credits (2 hrs. lec., 4 hrs. lab.) Investigates advanced techniques, as well as the creative possibilities of clay, glazes and firing procedures. (5007115126) Prerequisite: ARTS 2346 or departmental approval, ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

ARTS 2348 - DIGITAL ART I
3 Credits (2 hrs. lec., 4 hrs. lab.) This course is an introduction to digital imaging on the computer as it relates to art and design, employing a fundamental exploration of the potential of computer hardware and software medium for their visual, conceptual and practical uses in the visual arts. Basic theories of design and composition are stressed using digital image editing software to manipulate scanned images. (5004025126) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

ARTS 2349 - DIGITAL ART II
3 Credits (2 hrs. lec., 4 hrs. lab.) This course explores the use of computer hardware and software as a medium for visual and conceptual expression in the visual arts. Students will apply skills acquired in Digital Art I to focus on the development and production of creative art pieces. (5004025126) Prerequisite: ARTS 2348, ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

ARTS 2356 - PHOTOGRAPHY I
3 Credits (2 hrs. lec., 4 hrs. lab.) A beginning course which introduces students to theoretical and applied aspects of photography, including cameras, lenses, photographic materials and techniques, black - and - white darkroom procedures and photographic composition. This is the same course as COMM 1318. (5006055126) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

ARTS 2357 - PHOTOGRAPHY II
3 Credits (2 hrs. lec., 4 hrs. lab.) A continuation of Photography I, this course provides further study of photographic theories, techniques and processes. The analysis and utilization of the design and compositional elements in photography are also stressed. (5006055226) Prerequisite: ARTS 2356 or COMM 1318; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

ARTS 2366 - WATERCOLOR
3 Credits (2 hrs. lec., 4 hrs. lab.) An introduction to aquamedia using a variety of subject matter, concepts, techniques and materials. (5007085326) Prerequisite: ARTS 1311 and 1316; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

ARTS 2389 - ACADEMIC CO-OP IN ART
3 Credits (1 hr. lec., 6 hrs. lab.) An instructional program designed to integrate on - campus study with practical hands - on work experience in art. In conjunction with class seminars, the individual student will set specific goals and objectives in art. (2401035212) Prerequisite: Departmental approval, ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

AUMT 1405 - INTRODUCTION TO AUTOMOTIVE TECHNOLOGY
4 Credits (3 hrs. lec., 4 hrs. lab.) An introduction to the automotive industry including automotive history, safety practices, shop equipment and tools, vehicle subsystems, service publications, fasteners, professional responsibilities, and automotive maintenance. Maybe taught manufacturer specific. Prerequisite: None

ARTV 1303 - BASIC ANIMATION
3 Credits (2 hrs. lec., 4 hrs. lab.) Examination of concepts, characters, and storyboard for basic animation production. Emphasizes movement and expression utilizing traditionally or digitally generated image sequences. Prerequisite: None

ARTV 1341 - 3-D ANIMATION I
3 Credits (2 hrs. lec., 4 hrs. lab.) Three-dimensional (3-D) modeling and rendering techniques including lighting, staging, camera, and special effects. Emphasizes 3-D modeling building blocks using primitives to create simple and complex objects. Prerequisite: ARTV 1345 and ARTC 1302

ARTV 1345 - 3-D MODELING AND RENDERING
3 Credits (2 hrs. lec., 4 hrs. lab.) Techniques of three-dimensional (3-D) modeling utilizing appropriate software. Includes the creation and modification of
DESCRIPTION OF COURSES

3-D geometric shapes, use of a variety of rendering techniques, cameral light sources, texture, and surface mapping. Prerequisite: None

ARTV 1351 - DIGITAL VIDEO

3 Credits (2 hrs. lec., 4 hrs. lab.) Producing and editing video and sound for multimedia or web productions. Emphasizes capture, editing, and outputting of video using a desktop digital video workstation. Prerequisite: None

ARTV 2341 - ADVANCED DIGITAL VIDEO

3 Credits (2 hrs. lec., 4 hrs. lab.) Advanced digital video techniques for post-production. Emphasizes generation and integration of special effects, 2-D animation and 3-D animation for film, video, CD-ROM, and the Internet. Exploration of new and emerging compression and video streaming technologies. Prerequisite: ARTV 1351; ENGL 0304 or ENGL 0315 AND ENGL 0306 or 0325, OR higher level course (ENGL 1301), OR placement by testing

AUMT 1407 - AUTOMOTIVE ELECTRICAL SYSTEMS

4 Credits (3 hrs. lec., 4 hrs. lab.) An overview of automotive electrical systems including topics in operational theory, testing, diagnosis, and repair of batteries, charging and starting systems, and electrical accessories. Emphasis on electrical schematic diagrams and service manuals. May be taught manufacturer specific. Prerequisite: None

AUMT 1410 - AUTOMOTIVE BRAKE SYSTEMS

4 Credits (3 hrs. lec., 4 hrs. lab.) Operation and repair of drum/disc type brake systems. Emphasis on safe use of modern equipment. Topics include brake theory, diagnosis, and repair of power, manual, anti-lock brake systems, and parking brakes. May be taught manufacturer specific. Prerequisite: None

AUMT 1416 - SUSPENSION AND STEERING

4 Credits (3 hrs. lec., 4 hrs. lab.) Theory and operation of automotive suspension and steering systems including tire and wheel problem diagnosis, component repair, and alignment procedures. May be taught manufacturer specific. Prerequisite: None

AUMT 1419 - AUTOMOTIVE ENGINE REPAIR

4 Credits (3 hrs. lec., 4 hrs. lab.) Fundamentals of engine operations, diagnosis and repair including lubrication systems and cooling systems. Emphasis on overhaul of selected engines, identification and inspection, measurements, and disassembly, repair, and reassembly of the engine. May be taught manufacturer specific. Prerequisite: None

AUMT 1445 - AUTOMOTIVE HEATING AND AIR CONDITIONING

4 Credits (3 hrs. lec., 4 hrs. lab.) Theory of automotive air conditioning and heating systems. Emphasis on the basic refrigeration cycle and diagnosis and repair of system malfunctions. Covers EPA guidelines for refrigerant handling and new refrigerant replacements. May be taught manufacturer specific. Prerequisite: AUMT 1407

AUMT 2328 - AUTOMOTIVE SERVICE

3 Credits (2 hrs. lec., 4 hrs. lab.) Mastery of automotive vehicle service and component systems repair. Emphasis on mastering current automotive competencies covered in related courses. May be taught manufacturer specific. Prerequisite: Enrollment in automotive technology AAS degree program; completion of 15 hours in automotive courses and departmental approval.

AUMT 2380 - COOPERATIVE EDUCATION: AUTO/AUTOMOTIVE

3 Credits (1 hr. lec., 20 hrs. ext.) Career-related activities encountered in the student’s area of specialization offered through an individualized agreement among the college, employer, and student. Under the supervision of the college and the employer, the student combines classroom learning with work experience. Includes a lecture component. Prerequisite: Enrollment in automotive technology AAS degree program; completion of 15 hours in automotive courses and departmental approval.

AUMT 2381 - COOPERATIVE EDUCATION: AUTO/AUTOMOTIVE

3 Credits (1 hr. lec., 20 hrs. ext.) Career-related activities encountered in the student’s area of specialization offered through an individualized agreement among the college, employer, and student. Under the supervision of the college and the employer, the student combines classroom learning with work experience. Includes a lecture component. Prerequisite: Enrollment in automotive technology AAS degree tech program; completion of 25 hours in automotive courses and departmental approval.
DESCRIPTION OF COURSES

AUMT 2413 - MANUAL DRIVE TRAIN AND AXLES
4 Credits (3 hrs. lec., 4 hrs. lab.) A study of automotive clutches, clutch operations devices, standard transmissions, transaxles, and differentials with emphasis on the diagnosis and repair of transmissions and drive lines. May be taught manufacturer specific. Prerequisite: None

AUMT 2417 - ENGINE PERFORMANCE ANALYSIS I
4 Credits (3 hrs. lec., 4 hrs. lab.) Theory, operation, diagnosis, and repair of basic engine dynamics, ignition systems, and fuel delivery systems. Use of basic engine performance diagnostic equipment. May be taught manufacturer specific. Prerequisite: AUMT 1407

AUMT 2425 - AUTOMATIC TRANSMISSION AND TRANSAXLE
4 Credits (3 hrs. lec., 4 hrs. lab.) A study of the operation, hydraulic principles, and related circuits of modern automatic transmissions and automatic transaxles. Diagnosis, disassembly, and assembly procedures with emphasis on the use of special tools and proper repair techniques. May be taught manufacturer specific. Prerequisite: None

AUMT 2434 - ENGINE PERFORMANCE ANALYSIS II
4 Credits (3 hrs. lec., 4 hrs. lab.) Diagnosis and repair of emission systems, computerized engine performance systems, and advanced ignition and fuel systems; and proper use of advanced engine performance diagnostic equipment. May be taught manufacturer specific. Prerequisite: AUMT 2417

AUMT 2437 - AUTOMOTIVE ELECTRONICS
4 Credits (3 hrs. lec., 4 hrs. lab.) Topics address electrical principles, semiconductor and integrated circuits, digital fundamentals, microcomputer systems, and electrical test equipment as applied to automotive technology. May be taught manufacturer specific. Prerequisite: AUMT 2417

BIOL 1322 - NUTRITION
3 Credits (3 hrs. lec.) Fundamental principles of normal nutrition and the importance of nutrition in promoting growth and health. Emphasis will be given to the basic food constituents and their physiological relationships within the body. Consideration will also be given to family and community needs. This course will not fulfill a laboratory science requirement. (1905025109) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing, MATH 0306

BIOL 1406 - BIOLOGY I
4 Credits (3 hrs. lec., 3 hrs. lab.) A contemporary course including applications of the scientific method, cellular and molecular biology, biochemistry, classical and human genetics, virology and mechanisms of evolution. (2601015103) Prerequisite: College reading level as determined by SAT, ACT, THEA; or successfully passing ENGL 0305 with a “C” or better; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing, MATH 0308

BIOL 1407 - BIOLOGY II
4 Credits (3 hrs. lec., 3 hrs. lab.) This course is a continuation of Biology I. It includes a detailed phylogenetic survey of the major kingdoms. This includes a comparison of the systems of different organisms. Ecological roles and relationships, as well as behavior of organisms, will be integrated throughout. (2601015103) Prerequisite: BIOL 1406, ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing, MATH 0308

BIOL 1408 - INTRODUCTION TO BIOLOGY I FOR NON-MAJORS
4 Credits (3 hrs. lec., 3 hrs. lab.) A conceptual approach for students not majoring in science. An introduction to the nature of science, the characteristics of life, the molecular and cellular basis of life, viruses, energetics, genetics, reproduction and development. An emphasis will be placed on how these topics are related to issues facing modern society. (2601015103) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing, MATH 0306

BIOL 1409 - INTRODUCTION TO BIOLOGY II FOR NON-MAJORS
4 Credits (3 hrs. lec., 3 hrs. lab.) A continuation of Introduction to Biology I designed for non-science majors. This conceptual approach to biology includes the diversity of life: prokaryotes, protists, fungi, plants, and animals. Topics will include structures and their functions, evolution, environmental and human
interactions. (2601015103) Prerequisite: BIOL 1408, ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing, Math 0306

Biol 2389 - Academic Cooperative in the Biological Science/Life Science

3 Credits (1 hr. lec., 6 hrs. lab.) An instructional program designed to integrate on-campus study with practical hands-on work experience in the biological sciences/life sciences. In conjunction with class seminars, the individual student will set specific goals and objectives in the study of living organisms and their systems. Students will work in conjunction with the faculty coordinator and the sponsor in the development of their goals and objectives. The external learning experiences are unpaid and must have faculty approval. (2601015203) Prerequisite: Eight hours in biological sciences (selected from BIOL 1406, 1407, 2401, 2402, 2406, 2416, 2420, and 2421), faculty approval, and a grade point average of at least a “B”; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing, MATH 0306

Biol 2401 - Human Anatomy & Physiology I

4 Credits (3 hrs. lec., 3 hrs. lab.) A study of the structure and function of the human body. Emphasis will be given to the study of cells and tissues and anatomical and physiological interrelationships of the skeletal, muscular, nervous and endocrine systems. Designed primarily for students entering health careers. (2607065103) Prerequisite: BIOL 1406; strongly recommended; Math 0308; College reading level as determined by SAT, ACT, TASP, or successfully passing ENGL 0305 with a “C” or better; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing, MATH 0306

Biol 2402 - Human Anatomy & Physiology II

4 Credits (3 hrs. lec., 3 hrs. lab.) A continuation of BIOL 2401. Emphasis will be given to the study of the anatomical and physiological interrelationships of the circulatory, respiratory, digestive, reproductive and excretory systems. Designed primarily for students entering health careers. (2607065103) Prerequisite: BIOL 2401, Math 0308; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

Biol 2404 - Introduction to Anatomy and Physiology

4 Credits (3 hrs. lec., 3 hrs. lab.) A general survey of the structure and function of human anatomy and physiology, including the neuroendocrine, integumentary, musculoskeletal, digestive, urinary, reproductive, respiratory, lymphatic, and circulatory systems. (2607075103) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326; Math 0306

Biol 2406 - Environmental Biology

4 Credits (3 hrs. lec., 3 hrs. lab.) A one-semester survey of the interrelationships between the biotic and abiotic parts of the environment and how man affects them. Topics include: basic ecological principles; energy; human influences on ecosystems; and pollution and policy making. Laboratory experiences will reinforce these topics. Field trips required. (0301035101) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing, MATH 0306

Biol 2416 - Genetics

4 Credits (3 hrs. lec., 3 hrs. lab.) A study of the principles of genetics with an emphasis on molecular aspects. Course content will also include genetic engineering principles, population genetics, and the function and transmission of hereditary material. (2606135103) Prerequisite: BIOL 1406 AND BIOL 2420 OR BIOL 2421; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing, MATH 0308

Biol 2420 - Medical Microbiology

4 Credits (3 hrs. lec., 3 hrs. lab.) This course is designed for occupational health students and non-science majors. This course is a study of microorganisms including a description of basic cell structure, biochemistry, metabolism, nutrition, reproduction and genetics. Mechanisms of transmission, microbial entry, pathogenesis, prophylaxis, epidemiology and microbial control of selected human pathogens will be explored. Basic body defense mechanisms and immunological responses to pathological conditions will be examined. Laboratory exercises will include aseptic techniques, microscopy, culture techniques, determination of bacterial morphology, staining, and biochemical differentiation. (2605015103) Prerequisite: BIOL 1406 OR BIOL 2401; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing, MATH 0308
DESCRIPTION OF COURSES

BIOL 2421 - GENERAL MICROBIOLOGY
4 Credits (3 hrs. lec., 3 hrs. lab.) This course is designed for science majors. A study of the morphology, biochemistry, physiology, genetic and taxonomy of microorganisms with an emphasis on bacteria. The biological principles and relationships of microorganisms to man in agriculture, sanitation, industry, medicine, and the environment will also be emphasized. Laboratory exercises will include aseptic techniques, microscopy, culture techniques, determination of bacterial morphology, staining, and biochemical differentiation. (2605015103) Prerequisite: BIOL 1406, ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing, MATH 0308

BITC 1211 - INTRODUCTION TO BIOTECHNOLOGY
2 Credits (2 hrs. lec., 1 hr. lab.) An introduction to biotechnology including career exploration, history and applications of DNA/RNA technology, molecular biology, bioethics, and laboratory safety practices. Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing, MATH 0310 or placement by testing

BITC 1402 - BIOTECHNOLOGY LABORATORY METHODS AND TECHNIQUES
4 Credits (3 hrs. lec., 3 hrs. lab.) A study of laboratory operations, management, equipment, instrumentation, quality control techniques, and safety procedures. Laboratory practice in using pH meters, mixing buffers, performing measurements, preparing solutions, and performing separatory techniques. Prerequisite: BITC 1211; CHEM 1405 or 1411; MATH 1314; or instructor’s approval; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

BITC 2411 - BIOTECHNOLOGY LABORATORY INSTRUMENTATION
4 Credits (3 hrs. lec., 3 hrs. lab.) Presentation of theory, applications, and operations of various analytical instruments. Practice of separation and identification techniques including electrophoresis, spectrophotometry, chromatography, and centrifugation. Prerequisite: BITC 1402; BIOL 1406; BIOL 2420 or BIOL 2421; CHEM 1405 or 1411; or instructor’s approval; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

BITC 2431 - CELL CULTURE TECHNIQUES
4 Credits (3 hrs. lec., 3 hrs. lab.) A study of cell culture techniques. Laboratory emphasis on the principles and practices of initiation, cultivation, maintenance and preservation of cell lines with applications. Prerequisite: BITC 2411 or instructor’s approval; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

BITC 2441 - MOLECULAR BIOLOGY TECHNIQUES
4 Credits (3 hrs. lec., 3 hrs. lab.) In depth coverage of the theory and laboratory techniques in molecular biology with an emphasis on gene expression and regulation, recombinant DNA, and nucleic acids. Prerequisite: BITC 2411; BIOL 2416; BIOL 2420 or 2421; or instructor’s approval; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

BITC 2486 - INTERNSHIP - BIOLOGICAL TECHNOLOGY/TECHNICIAN
4 Credits (1 hr. lec., 20 hrs. ext.) A work-based learning experience that enables the student to apply specialized occupational theory, skills and concepts. A learning plan is developed by the college and the employer. Prerequisite: Completion of all BITC courses with a grade of “C” or better; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

BMGT 1301 - SUPERVISION
3 Credits (3 hrs. lec.) A study of the role of the supervisor. Managerial functions as applied to leadership, counseling, motivation, and human skills are examined. Prepares the student with leadership and communications skills needed to motivate. Prerequisite: ENGL 0305 or 0316 or placement by testing; ENGL 0307 or 0326 or placement by testing

BMGT 1303 - PRINCIPLES OF MANAGEMENT
3 Credits (3 hrs. lec.) Concepts, terminology, principles, theory, and issues that are the substance of the practice of management. Prerequisite: None

BMGT 1306 - FACILITIES MANAGEMENT
3 Credits (3 hrs. lec.) General management and supervision of public buildings, business and industrial facilities, and other complexes requiring supervision and control. Includes fire alarm maintenance, plant maintenance, occupational safety, OSHA rules and
DESCRIPTION OF COURSES

BMGT 1309 - INFORMATION AND PROJECT MANAGEMENT
3 Credits (3 hrs. lec.) Critical path methods for planning and controlling projects. Includes time/cost tradeoffs, resource utilization, stochastic considerations, task determination, time management, scheduling management, status reports, budget management, customer service, professional attitude, and project supervision. Prerequisite: None

BMGT 1331 - PRODUCTION & OPERATIONS MANAGEMENT
3 Credits (3 hrs. lec.) Fundamentals of the various techniques used in the practice of production management to include location, design, and resource allocation. Prerequisite: None

BMGT 1341 - BUSINESS ETHICS
3 Credits (3 hrs. lec.) Discussion of the ethical issues, the development of a moral frame of reference and the need for an awareness of social justice in management practices and business activities. Review of ethical responsibilities and relationships between organizational departments, divisions, executive management, and the public. Prerequisite: None

BMGT 2303 - PROBLEM SOLVING AND DECISION MAKING
3 Credits (3 hrs. lec.) Decision-making and problem-solving processes in organizations, utilizing logical and creative problem solving techniques. Application of theory is provided by experiential activities such as small group discussions, case studies, and the use of other managerial decision aids. Prerequisite: None

BMGT 2382 - COOP: BUSINESS ADMINISTRATION AND MANAGEMENT I
3 Credits (1 hr. lec., 20 hrs. ext.) Career-related activities encountered in the student’s area of specialization offered through an individualized agreement among the college, employer, and student. Under the supervision of the college and the employer, the student combines classroom learning with work experience. Includes a lecture component. Prerequisite: Enrollment in management AAS degree program; completion of 15 credits in degree plan; departmental approval

BMGT 2388 - INTERNSHIP - BUSINESS AND MANAGEMENT
3 Credits (9 hrs. ext.) A work-based learning experience that enables the student to apply specialized occupational theory, skills and concepts. A learning plan is developed by the college and the employer. Prerequisite: Departmental approval

BUSG 1341 - SMALL BUSINESS FINANCING
3 Credits (3 hrs. lec.) A study of the financial structure of a small business. Topics address business finance, including where the funds come from and what they are used for; budgeting including planning and preparing, record keeping, taxation, insurance, and banking. Prerequisite: None

BUSG 2309 - SMALL BUSINESS MANAGEMENT
3 Credits (3 hrs. lec.) A course on how to start and operate a small business. Topics include facts about a small business, essential management skills, how to prepare a business plan, financial needs, marketing strategies, and legal issues. Prerequisite: None

BUSI 1301 - BUSINESS PRINCIPLES
3 Credits (3 hrs. lec.) A general survey course in business functions and activities. Includes basic history of business, basic economic systems, types of ownership, management, marketing, finance, manufacturing, law and other topics of business operations. Subject matter includes an analysis of the specialized fields within the business organization, career planning as related to the fields, starting your own business and current trends in profit and nonprofit business activities. (5201015104) Prerequisite: ENGL 0305 or ENGL 0316 or placement by testing; ENGL 0307 or 0326 or placement by testing

BUSI 1307 - PERSONAL FINANCE
3 Credits (3 hrs. lec.) A study of the financial problems which people ordinarily encounter in personal money management. Includes financial planning, budgeting, insurance, buying taxes, use of credit, consumer protection, investing, savings, home ownership, estate planning and basic statistics as applied to consumer problems. (1904015109) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing
DESCRIPTION OF COURSES

BUSI 1311 - SALESMANSHIP
3 Credits (3 hrs. lec.) Principles of personal salesmanship, including methods and tasks applicable to a wide variety of industries and commercial settings (08.0706.51.04) Prerequisite: ENGL 1301

BUSI 2301 - BUSINESS LAW I
3 Credits (3 hrs. lec.) Principles of law which form the legal framework for business activity. Includes applicable statutes, torts, contracts, personal and real property, wills and trusts and consumer law. (2201015124) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

BUSI 2302 - LEGAL ENVIRONMENT IN BUSINESS
3 Credits (3 hrs. lec.) Principles of law which form the legal framework for business activity. Includes contracts, sales and leases, negotiable instruments, creditors’ rights and bankruptcy, and government regulations. (2201015224) Prerequisite: BUSI 2301, ENGL 1301

BUSI 2304 - BUSINESS COMMUNICATIONS
3 Credits (3 hrs. lec.) Principles of effective oral and written business communications. Activities include writing business messages for a variety of business situations, writing both formal and informal business reports and presenting business data orally. (2311015212) Prerequisite: ENGL 1301

BUSI 2372 - BUSINESS ANALYSIS
3 Credits (3 hrs. lec.) This course is designed to introduce students to the use of quantitative business techniques. Topics include organizing and presenting data, descriptive statistics, probability, discrete and continuous distributions, systems of equations, modeling, optimization procedures, and statistical inference. (5203049104) Prerequisite: MATH 1314; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

CDEC 1341 - CDA PREPARATION FOR ASSESSMENT
3 Credits (3 hrs. lec.) This course is designed to assist students in preparation for the CDA credential assessment; write CDA competency statements and complete a CDA professional file. This course is a capstone course. Prerequisite: 120 training hours, required for CDA; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR ENGL 0304 & 0306 OR departmental approval

CDEC 1364 - PRACTICUM - CHILD DEVELOPMENT
3 Credits (1 hr. lec., 20 hrs. ext.) Practical, general workplace training supported by an individualized learning plan developed by the employer, college, and student. Child Development practicum is with children birth to age three. Prerequisite: Departmental approval; ENGL 0304 and 0307, OR higher level course (ENGL 1301), OR placement by testing

CDEC 1366 - PRACTICUM - EARLY CHILDHOOD
3 Credits (1 hr. lec., 20 hrs. ext.) Practical, general workplace training supported by an individualized learning plan developed by the employer, college, and student. Early childhood practicum is with preschool/school age children, 3-8 years old. Prerequisite: Departmental approval; ENGL 0304 and 0307, OR higher level course (ENGL 1301), OR placement by testing

CDEC 1392 - SPECIAL TOPICS IN CHILD DEVELOPMENT: MONTESSORI INFANT AND TODDLER HISTORY AND PHILOSOPHY
3 Credits (2 hrs. lec., 2 hrs. lab.) Topics address recently identified current events, skills, knowledge, and/or attitudes and behaviors pertinent to the technology or occupation, and relevant to the professional development of the student. This course is the in-depth study of the life and work of Maria Montessori and its relationship to child psychology, placing special emphasis on the years in a child’s life from birth to three years of age. Laboratory assignments will be carried out in approved early childhood settings. Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing
CDEC 1413 - CURRICULUM RESOURCES FOR EARLY CHILDHOOD PROGRAMS

4 Credits (3 hrs. lec., 3 hrs. lab.) Fundamentals of curriculum design and implementation in developmentally appropriate programs for young children. Laboratory assignments will be required in approved early childhood settings. Prerequisite: ENGL 0304 or ENGL 0315 AND ENGL 0306 or 0325 OR higher level course (ENGL 1301), OR placement by testing

CDEC 1419 - CHILD GUIDANCE

4 Credits (3 hrs. lec., 3 hrs. lab.) An exploration of common behavior problems of young children in an early childhood setting. Emphasis on positive guidance techniques for effective behavior management. Practical application through direct participation in an early childhood setting. Laboratory assignments will be required in approved early childhood settings. Prerequisite: ENGL 0304 and 0306, OR higher level course (ENGL 1301), OR placement by testing

CDEC 1421 - THE INFANT AND TODDLER

4 Credits (3 hrs. lec., 3 hrs. lab.) A study of appropriate infant and toddler (birth to 3 years) programs, including an overview of development, quality caregiving routines, appropriate environments, materials and activities, and teaching/guidance techniques. Laboratory assignments will be required in approved early childhood settings. Prerequisite: ENGL 0304 or ENGL 0315 AND ENGL 0306 or 0325, OR higher level course (ENGL 1301), OR placement by testing

CDEC 1456 - EMERGENT LITERACY FOR EARLY CHILDHOOD

4 Credits (3 hrs. lec., 3 hrs. lab.) An exploration of principles, methods, and materials for teaching young children language and literacy through a play-based, integrated curriculum. Laboratory assignments will be required in approved early childhood settings. Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

CDEC 1458 - CREATIVE ARTS FOR EARLY CHILDHOOD

4 Credits (3 hrs. lec., 3 hrs. lab.) An exploration of principles, methods, and materials for teaching young children; music, movement, visual arts, and dramatic play through process oriented experiences to support divergent thinking. Laboratory assignments will be required in approved early childhood settings. Prerequisite: ENGL 0304 or ENGL 0315 AND ENGL 0306 or 0325, OR higher level course (ENGL 1301), OR placement by testing

CDEC 1459 - CHILDREN WITH SPECIAL NEEDS

4 Credits (3 hrs. lec., 3 hrs. lab.) A survey of information regarding children with special needs, including possible causes and characteristics of exceptionalities, educational intervention, available resources, referral processes, and the advocacy role and legislative issues. Laboratory assignments will be required in approved early childhood settings. Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

CDEC 1484 - COOPERATIVE EDUCATION - MONTESSORI

4 Credits (1 hr. lec., 30 hrs. ext.) Career-related activities encountered in the student’s area of specialization offered through an individualized agreement among the college, employer, and student. Under the supervision of the college and the employer, the student combines classroom learning with work experience. Includes a lecture component. Prerequisite: CDEC 1364, 1392 and 1492; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

CDEC 1492 - SPECIAL TOPICS IN CHILD DEVELOPMENT: MONTESSORI INFANT AND TODDLER THEORY AND PRACTICE

4 Credits (3 hrs. lec., 3 hrs. lab.) Topics address recently identified current events, skills, knowledge, and/or attitudes and behaviors pertinent to the technology or occupation and relevant to the professional development of the student. This course is the study of contemporary Montessori practices including educational techniques, preparation of appropriate environments, and materials for various developmental stages in the first three years of a child’s life. Required laboratory assignments will be completed in appropriate infant and toddler settings. Prerequisite: CDEC 1392; or departmental approval; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

CDEC 2326 - ADMINISTRATION OF PROGRAMS FOR CHILDREN I

3 Credits (2 hrs.lec., 2 hrs. lab.) Application of management procedures for early child care education programs. Includes planning, operating, supervising, and evaluating programs. Topics cover philosophy,
DESCRIPTION OF COURSES

types of programs, policies, fiscal management, regulations, staffing, evaluation, and communication. Prerequisite: 6 hrs of child development course work or adviser approval; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

CDEC 2328 - ADMINISTRATION OF PROGRAMS FOR CHILDREN II

3 Credits (2 hrs. lec., 2 hrs. lab.) An in-depth study of the skills and techniques in managing early care and education programs, including legal and ethical issues, personnel management, team building, leadership, conflict resolution, stress management, advocacy, professionalism, fiscal analysis and planning, parent education/partnerships, and technical applications in programs. Laboratory assignments will be required in approved early childhood settings. Prerequisite: 6 credit hours of child development course work or departmental approval; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

CDEC 2407 - MATH AND SCIENCE FOR EARLY CHILDHOOD

4 Credits (3 hrs. lec., 3 hrs. lab.) This course provides an exploration of principles, methods, and materials for teaching children math and science concepts through discovery and play. Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

CDEC 2436 - ADMINISTRATION OF PROGRAMS FOR CHILDREN III

4 Credits (3 hrs. lec., 3 hrs. lab.) The course is an advanced study of the skills and techniques in managing early child care education programs. This course is a capstone course. Prerequisite: 6 hrs of child development coursework to include Administration of Programs for Children I and Admin II or departmental approval; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

CETT 1402 - ELECTRICITY PRINCIPLES

4 Credits (3 hrs. lec., 3 hrs. lab.) Principles of electricity including proper use of test equipment, A/C and D/C circuits, and component theory and operation. Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

CETT 1403 - DC CIRCUITS

4 Credits (3 hrs. lec., 3 hrs. lab.) A study of the fundamentals of direct current including Ohm’s law, Kirchoff’s laws and circuit analysis techniques. Emphasis on circuit analysis of resistive networks and DC measurements. Corequisite: MATH 1314

CETT 1405 - AC CIRCUITS

4 Credits (3 hrs. lec., 3 hrs. lab.) A study of the fundamentals of alternating current including series and parallel AC circuits, phasors, capacitive and inductive networks, transformers, and resonance. Prerequisite: CETT 1403, ENGL 0304, 0306, MATH 0306

CETT 1409 - DC–AC CIRCUITS

4 Credits (3 hrs. lec., 3 hrs. lab.) Fundamentals of DC circuits and AC circuits operation including Ohm’s law, Kirchoff’s laws, networks, transformers, resonance, phasors, capacitive and inductive and circuit analysis techniques. Not intended for Engineering Technology A.A.S. majors. Prerequisite: None

CETT 1425 - DIGITAL FUNDAMENTALS

4 Credits (3 hrs. lec., 3 hrs. lab.) An entry level course in digital electronics covering number systems, binary mathematics, digital codes, logic gates, Boolean algebra, Karnaugh maps, and combinational logic. Emphasis on circuit logic analysis and troubleshooting digital circuits. Prerequisite: CETT 1403; ENGL 0304, 0306; MATH 0306; Corequisite: CETT 1405

CETT 1429 - SOLID STATE DEVICES

4 Credits (3 hrs. lec., 3 hrs. lab.) A study of diodes and other semiconductor devices, including analysis of static and dynamic characteristics, biasing techniques, and thermal considerations. Prerequisite: CETT 1405; ENGL 0305, 0307, MATH 0306

CETT 1445 - MICROPROCESSOR

4 Credits (3 hrs. lec., 3 hrs. lab.) An introductory course in microprocessor software and hardware; its architecture, timing sequence, operation, and programming; and discussion of appropriate software diagnostic language and tools. Prerequisite: CETT 1425; ENGL 0304, 0306; MATH 0306

CETT 1457 - LINEAR INTEGRATED CIRCUITS

4 Credits (3 hrs. lec., 3 hrs. lab.) A study of the characteristics, operations, stabilization, testing, and feedback techniques of linear integrated circuits. Application
in computation, measurements, instrumentation, and active filtering. Corequisite: CETT 1429; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing. MATH 0306

CETT 1491 - SPECIAL TOPICS IN COMPUTER ENGINEERING TECHNOLOGY/TECHNICIAN

4 Credits (3 hrs. lec., 2 hrs. lab.) Topics/projects address recently identified current events, skills, knowledge, and/or attitudes and behaviors pertinent to the technology or occupation and relevant to the professional development of the student. Working with the instructor, the advanced network/telecommunications student selects, develops an advanced design project or performs an advanced activity in a specific area of employment in the field of networking or telecommunications. This is a capstone experience. Prerequisite: Departmental approval; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

CETT 2449 - RESEARCH AND PROJECT DESIGN

4 Credits (3 hrs. lec., 3 hrs. lab.) Principles of electrical/electronic design encompassing schematics wiring diagrams, materials lists, operating characteristics, completion schedules, and cost estimates. Working with the instructor, the advanced student selects, develops an advanced design project or performs an advanced activity in a specific area of employment. This is a capstone experience. Prerequisite: Near program completion or departmental approval; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

CHEM 1105 - INTRODUCTION TO CHEMISTRY LAB I

1 Credit (3 hrs. lab.) This course is a preparatory course for students who have never had chemistry and covers the metric system, atoms and elements, bonding, solids, liquids, gases, stoichiometry, solutions, reactivity, and acids and bases. The lab includes experiments in inorganic chemistry. This course is appropriate for some nursing students, as well as students who will pursue higher level chemistry. Lab portion of CHEM 1305 (4005015103) Prerequisite: CHEM 1305 (CHEM 1305 can be a prerequisite OR corequisite to CHEM 1105); MATH 0308 or qualifying score on MATH placement test; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301) OR placement by testing

CHEM 1305 - INTRODUCTION TO CHEMISTRY I

3 Credits (3 hrs. lec.) This course is a preparatory course for students who have never had chemistry and covers the metric system, atoms and elements, bonding, solids, liquids, gases, stoichiometry, solutions, reactivity, and acids and bases. This course is appropriate for some nursing students, as well as students who will pursue higher level chemistry. (4005015103) Prerequisite: MATH 0308 or qualifying score on MATH placement test; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301) OR placement by testing

CHEM 1405 - INTRODUCTORY CHEMISTRY

4 Credits (3 hrs. lec., 3 hrs. lab.) This course is a preparatory course for students who have never had chemistry and covers the metric system, atoms and elements, bonding, solids, liquids, gases, stoichiometry, solutions, reactivity, and acids and bases. The lab includes experiments in inorganic chemistry. This course is appropriate for some nursing students, as well as students who will pursue higher level chemistry. (4005015103) Prerequisite: MATH 0308 or qualifying score on MATH placement test; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

CHEM 1411 - GENERAL CHEMISTRY I

4 Credits (3 hrs. lec., 3 hrs. lab.) Topics include a mathematical introduction (metric system, significant figures and scientific notation), discussion of atoms, molecules and ions, stoichiometry, electronic structure, periodic relationships, bonding, molecular geometries and properties of gases, liquids, solids and solutions. Appropriate lab experiments are included. (4005015203) Prerequisite: CHEM 1405 or 1 year of high school chemistry taken within the last 3 years and Math 0310 or qualifying score on MATH placement test; Corequisite: MATH 1314; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

CHEM 1412 - GENERAL CHEMISTRY II

4 Credits (3 hrs. lec., 3 hrs. lab.) A continuation of CHEM 1411, reviewing solutions and including studies in kinetics, equilibrium, acids and bases, thermodynamics, electrochemistry and an introduction to various other areas of chemistry. Appropriate laboratory experiments are included. (4005015203) Prerequisite: CHEM 1411 and MATH 1314 or qualifying score on
DESCRIPTION OF COURSES

MATH placement test, ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

CHEM 1419 - INTRODUCTORY ORGANIC AND BIOCHEMISTRY

4 Credits (3 hrs. lec., 3 hrs. lab.) This course covers a survey of atomic and molecular structure, organic nomenclature and functional group reactions, carbohydrates, lipids, proteins, nucleic acids, metabolism, and enzymes. The laboratory exercises include experiments in organic and biochemical analysis. This course is appropriate for some nursing students. (4005045103) Prerequisite: CHEM 1405 or 1411 or equivalent; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

CHEM 2423 - ORGANIC CHEMISTRY I

4 Credits (3 hrs. lec., 4 hrs. lab.) This science major's course covers the topics of alkanes, alkenes, alkynes, stereochemistry, alkyl halides, nucleophilic substitution, elimination, spectroscopy, conjugation, aromaticity, aromatic substitution and organic synthesis. The laboratory program includes appropriate experiments with product purification and methods of analysis including chromatography and infrared spectroscopy. (4005045203) Prerequisite: CHEM 1412 or equivalent; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

CHEM 2425 - ORGANIC CHEMISTRY II

4 Credits (3 hrs. lec., 4 hrs. lab.) This continuation of CHEM 2423 includes topics on alcohols, aldehydes, ketones, carboxylic acids and derivatives, condensation reactions, amines, biochemistry and polymer chemistry. The laboratory program continues investigations into synthetic techniques with product purification and analysis including chromatography and infrared spectroscopy. (4005045203) Prerequisite: CHEM 2423 or equivalent; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

CMSW 1301 - INTRODUCTION TO SOCIAL SERVICES

3 Credits (3 hrs. lec.) Introduction to concepts of social welfare and social policy. Topics include emphasis on the relationship between social policy and the delivery of social services. Descriptions of present day social welfare programs in terms of the philosophy, legal base, program policy and impact on both the target service group and the larger community of present day social welfare programs. Prerequisite: ENGL 0304, ENGL 0306

CMSW 1309 - PROBLEMS OF CHILDREN AND ADOLESCENTS

3 Credits (3 hrs. lec.) Examination of the particular problems of youth and their implications for the delivery of social services. Emphasis on social service institutions of a preventative and rehabilitative nature. Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

CMSW 1323 - THE EXCEPTIONAL PERSON

3 Credits (3 hrs. lec.) Study of physical, intellectual, and learning disabilities, sensory deficits, as well as the exceptionally gifted individual. Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

CMSW 1341 - BEHAVIOR MODIFICATION AND COGNITIVE DISORDER

3 Credits (3 hrs. lec.) In-depth study of the theories and principles of behavioral science and skill development in the methods of modifying and controlling behavior. Clinical and personal settings. Emphasis on techniques as managing self-behavior. Topics include stimulus controls, shaping, relaxation training, reinforcement scheduling and token economies. Prerequisite: ENGL 0304, ENGL 0306

CMSW 1345 - ABNORMAL BEHAVIOR

3 Credits (3 hrs. lec.) A study of the process used to formulate diagnoses of mental disorders. Prerequisite: ENGL 0304, ENGL 0306

CMSW 1353 - FAMILY INTERVENTION STRATEGIES

3 Credits (3 hrs. lec.) Overview of professionally recognized family intervention systems. Topics include theorists in the field and personal awareness. Prerequisite: ENGL 0304, ENGL 0306

CMSW 1391 - SPECIAL TOPICS IN CLINICAL AND MEDICAL SOCIAL WORK

3 Credits (3 hrs. lec.) Topics address recently identified current events, skills, knowledges, and/or attitudes and
behaviors pertinent to the technology or occupation and relevant to the professional development of the student. Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

**CNBT 1311 - CONSTRUCTION MATERIALS AND METHODS I**

3 Credits (2 hrs. lec., 4 hrs. lab.) An introduction to construction materials and methods and their applications. Prerequisite: None

**CNBT 1342 - BUILDING CODES AND INSPECTIONS**

3 Credits (3 hrs. lec.) An examination of the building codes and standards applicable to building construction and inspection processes. Prerequisite: CNBT 1311, DPTG 1305, and ENGL 1301

**COMM 1129 - PUBLICATIONS PRODUCTION**

1 Credit (4 hrs. lab.) Special course in content, layout and design. Work on campus publication using a Macintosh computer for writing, editing and mechanical production, at prescribed periods under supervision. May be repeated for a maximum of four credit hours. (0904015406) Corequisite: COMM 1307, ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

**COMM 1307 - INTRODUCTION TO MASS COMMUNICATIONS**

3 Credits (3 hrs. lec.) A survey of the various media employed in communicating to the masses; examination of the practices, possibilities and limitations of each. A study of the relationship between media communications and social actions or attitudes. (0904035106) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

**COMM 1316 - PHOTO JOURNALISM**

3 Credits (2 hrs. lec., 3 hrs. lab.) A course which deals primarily with the principles and methods of producing news, feature and public relations photographs for newspapers and magazines. (0904015506) Prerequisite: COMM 1318 or departmental approval; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

**COMM 1318 - PHOTOGRAPHY I**

3 Credits (1 hr. lec., 5 hrs. lab.) A beginning course which introduces the student to theoretical and applied aspects of photography, including cameras, lenses, photographic materials and techniques, black-and-white darkroom procedures and photographic composition. This is the same course as ARTS 2356. (5006055126) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

**COMM 2305 - MODERN EDITING**

3 Credits (3 hrs. lec.) Methods of planning and editing modern magazines and newspapers. Emphasis on modular layout, including headlines and pictures. Course requires participation in producing school magazine and newspaper. Some Macintosh computer instruction offered. (0904015106) Prerequisite: Six hours journalism, or 2nd-year standing and departmental approval; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

**COMM 2311 - REPORTING I**

3 Credits (3 hrs. lec., 3 hrs. lab.) Basic news-reporting techniques with emphasis on news gathering and writing in a newsroom laboratory setting (school newspaper). Writing on a Macintosh computer for the school newspaper required. (0904015706) Prerequisite: ENGL 1301; Corequisite: COMM 1129

**COMM 2315 - REPORTING II**

3 Credits (3 hrs. lec., 3 hrs. lab.) A continuation of COMM 2311 with added emphasis on the practical applications of news writing, gathering and interviewing techniques. Students should be prepared to produce computer copy for off-campus publications as well as for the campus newspaper. (0904015806) Prerequisite: COMM 2311; Corequisite: COMM 1129, ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

**COMM 2327 - PRINCIPLES OF ADVERTISING**

3 Credits (3 hrs. lec.) History of advertising and its effect on mass media. Review of current advertising and its impact on business and industry throughout the ages. (0902015106) Prerequisite: ENGL 1301 or departmental approval
DESCRIPTION OF COURSES

COMM 2389 - ACADEMIC COOPERATIVE IN COMMUNICATIONS
3 Credits (1 hr. lec., 6 hrs. lab.) An instructional program designed to integrate on-campus study with practical hands-on work experience. In conjunction with class seminars, the individual student will set specific goals and objectives in the study of communication. The external learning experiences are unpaid and must have faculty approval. (2401035212)

Prerequisite: Instructor Approval, ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

COSC 1309 - LOGIC DESIGN
3 Credits (3 hrs. lec., 2 hrs. lab.) A discipline approach to problem solving with structured techniques and representation of algorithms using pseudocodes and graphical tools. Discussion of methods for testing, evaluation, and documentation. COSC 1401 is recommended prior to enrolling. (1102015107) [This course is recommended for four-year transfer students.] Prerequisite: ITSC 1401/COSC 1401, Engl 0305, Math 0308

COSC 1401 - MICROCOMPUTER APPLICATIONS
4 Credits (3 hrs. lec., 2 hrs. lab.) Overview of computer information systems. Introduces computer hardware, software, procedures, and human resources. Explores integration and application in business and other segments in society. Fundamentals of computer problem-solving and programming may be discussed and applied. Examines applications and software relating to a specific curricular area. (1101015207) [This course is recommended for computer science transfer students.] Prerequisite: Course may be taken as a corequisite with ENGL 0305 or 0316 and ENGL 0307 or 0326

COSC 1420 - "C" LANGUAGE
4 Credits (3 hrs. lec., 2 hrs. lab.) Introduction to computer programming. Emphasis on the fundamentals of structured design, development, testing, implementation, and documentation. Includes coverage of language syntax, data and file structures, input/output devices, disks/files. (1102015307) [This course is recommended for four-year transfer students.] Prerequisite: COSC 1420, ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

COSC 1430 - JAVA LANGUAGE
4 Credits (3 hrs. lec., 2 hrs. lab.) Introduction to JAVA programming. Emphasis on the fundamentals of structured design, development, testing, implementation, and documentation. Includes coverage of language syntax, data and file structures, input/output devices, disks/files. (1102015207) [This course is recommended for four-year transfer students.] Prerequisite: COSC 1309, ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

COSC 1436 - PROGRAMMING FUNDAMENTALS I
4 Credits (3 hrs. lec., 2 hrs. lab.) Introduces the fundamental concepts of structured programming. Topics include software development methodology, data types, control structures, functions, arrays, and the mechanics of running, testing, and debugging. Prerequisite: MATH 0310; Corequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326

COSC 1437 - PROGRAMMING FUNDAMENTALS II
4 Credits (3 hrs. lec., 2 hrs. lab.) Review of control structures and data types with emphasis on structured data types. Applies the object-oriented programming paradigm, focusing on the definition and use of classes along with the fundamentals of object-oriented design. Includes basic analysis of algorithms, searching and sorting techniques, and an introduction to software engineering. Prerequisite: COSC 1436; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

COSC 2420 - ADVANCED "C" LANGUAGE
4 Credits (3 hrs. lec., 2 hrs. lab.) Further applications of C++ programming techniques. Topics include file access methods, data structures, modular programming, program testing, class inheritance, documentation, and other advanced techniques. (1102015307) [This course is recommended for four-year transfer students.] Prerequisite: COSC 1420, ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

COSC 2425 - COMPUTER ORGANIZATION AND MACHINE LANGUAGE
4 Credits (3 hrs. lec., 2 hrs. lab.) Basic computer organization; machine cycle, digital representation of data and instructions; assembly language programming, assembler, loader, macros, subroutines, and program linkages. Prerequisite: COSC 1436; ENGL 0305 or
ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

**COSC 2436 - PROGRAMMING FUNDAMENTALS III**

4 Credits (3 hrs. lec., 2 hrs. lab.) Further applications of programming techniques, introducing the fundamental concepts of data structures and algorithms. Topics include recursion, fundamental data structures (including stacks, queues, linked lists, hash tables, trees, and graphs), and algorithmic analysis. Prerequisite: COSC 1437; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

**CPMT 1403 - INTRODUCTION TO COMPUTER TECHNOLOGY**

4 Credits (3 hrs. lec., 2 hrs. lab.) A fundamental computer course that provides in-depth explanation of the procedures to utilize hardware and software. Emphasis on terminology, acronyms, and hands-on activities. Specific, hands-on training using word processing, spreadsheets, database, Internet, and personal computer operating system commands (DOS & Windows) are provided. Prerequisite: ASSET reading score of 39, CELT score of 60; ENGL 0304, 0306; MATH 0306

**CPMT 1445 - COMPUTER SYSTEMS MAINTENANCE**

4 Credits (3 hrs. lec., 2 hrs. lab.) Examination of the functions of the components within a computer system. Development of skills in the use of test equipment and maintenance aids. Prerequisite: CPMT 1403 or ITSC 1401; ENGL 0304, 0306; MATH 0306

**CPMT 1449 - COMPUTER NETWORKING TECHNOLOGY**

4 Credits (3 hrs. lec., 3 hrs. lab.) A beginning course in computer networks with focus on networking fundamentals, terminology, hardware, software, and network architecture. A study of local/wide area networking concepts and networking installations and operations. Prerequisite or corequisite: CPMT 1445; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

**CPMT 2302 - HOME TECHNOLOGY INTEGRATION**

3 Credits (1 hr. lec., 4 hrs. lab.) Integration and maintenance of various home technology subsystems. Includes home automation, security and surveillance, home networks, video and audio networks, and structured wiring. Prerequisite: ITSC 1401

**CPMT 2433 - COMPUTER SYSTEMS INTEGRATION**

4 Credits (3 hrs. lec., 2 hrs. lab.) An advanced course in integration of hardware, software, and applications. Customization of computer systems for specific applications in engineering, multimedia, or data acquisition. Prerequisite: CPMT 1449; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing; Corequisite: MATH 1314

**CPMT 2445 - COMPUTER SYSTEMS TROUBLESHOOTING**

4 Credits (3 hrs. lec., 2 hrs. lab.) Principles and practices involved in computer system troubleshooting techniques and repair procedures including advanced diagnostic test programs and the use of specialized test equipment. Prerequisite: CPMT 1445; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

**CPMT 2449 - ADVANCED COMPUTER NETWORKING TECHNOLOGY**

4 Credits (3 hrs. lec., 2 hrs. lab.) An in-depth study of network technology with emphasis on network operating systems, network connectivity, hardware, and software. Mastery of implementation, troubleshooting, and maintenance of LAN and/or WAN network environments. Prerequisite: CPMT 1449; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

**CRIJ 1301 - INTRODUCTION TO CRIMINAL JUSTICE**

3 Credits (3 hrs. lec.) An overview of the criminal justice system. Topics include the history and philosophy of criminal justice, the definition of crime, and its nature and impact. (4301045124) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

**CRIJ 1306 - COURT SYSTEMS AND PRACTICES**

3 Credits (3 hrs. lec.) Examination of the role of the judiciary in the criminal justice system. Topics include the structure of the American court system, prosecution, right to counsel, pretrial release, grand jury process, adjudication process, types and rules of evidence, and sentencing concepts. (2201015424) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing
DESCRIPTION OF COURSES

CRIJ 1307 - CRIME IN AMERICA
3 Credits (3 hrs. lec.) The study of crime problems in historical perspective, social and public policy factors affecting crime, impact and crime trends, social characteristics of specific crimes, and crime prevention. (4504015225) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

CRIJ 1310 - FUNDAMENTALS OF CRIMINAL LAW
3 Credits (3 hrs. lec.) Study of the nature of criminal law. Topics include philosophical and historical development, major definitions and concepts, classification of crime, elements of crimes and penalties, and individual criminal responsibilities. (2201015324) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

CRIJ 1313 - JUVENILE JUSTICE SYSTEM
3 Credits (3 hrs. lec.) A study of the juvenile justice process. Topics include specialized juvenile law, role of the juvenile courts, role of police agencies, role of correctional agencies, and theories concerning delinquency. (4301045224) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

CRIJ 2301 - COMMUNITY RESOURCES
3 Credits (3 hrs. lec.) An overview of diversionary practices and treatment programs available to offenders in a local context. Topics include selected recognized models and future trends in community treatment. (4301045324) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

CRIJ 2313 - CORRECTIONAL SYSTEMS
3 Credits (3 hrs. lec.) A study of the role of corrections in the criminal justice system. Topics include organization and theory of correctional systems, institutional operations, management, alternatives to institutionalization, treatments and rehabilitation, and current and future issues. (4301045424) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

CRTG 1401 - CARTOGRAPHY AND GEOGRAPHY IN
4 Credits (3 hrs. lec., 3 hrs. lab.) Introduction to the principles of cartography and geography. Emphasis on global reference systems, and the use of satellites for navigation and measurements. Students learn basic concepts of GIS including mapping the earth in spatial terms, and populating the GIS to access data. Exercises include: create and access data in the GIS using Arc View, a standard PC platform software package; capture positional and attribute information with correct and accurate geographic referencing including GPS systems; and develop and print maps and reports. Emphasis on geographic coordinate systems, acquiring GIS information from databases, existing maps, GPS and the Internet. All aspects of the course will be integrated into individual final projects. Prerequisite: CRTG 1411 or departmental approval; ENGL 0305 or 0316 AND ENGL 0307 or 0326

CRTG 1411 - INTRODUCTION TO GEOGRAPHIC
4 Credits (3 hrs. lec., 3 hrs. lab.) Introduction to basic concepts of vector GIS using several industry specific
software programs including nomenclature of cartography and geography. Emphasis on the principles of cartography, standard global reference systems and the new technologies, using satellites for measurements and navigation, and map construction. Exercises include basic concepts of acquisition, accuracy, precision, and scale in GIS - global positioning systems, and the operating environment for GIS/GPS; creation of spatial data with real time GPS fieldwork; importing of GPS data into GIS; and evaluation of data for scale and accuracy. Students will measure and relate “real world” distance and area on maps. Final projects will include applications of these topics. This is the initial course for the GIS certificate and degree programs. Prerequisite: None

**CRTG 1421 - INTRODUCTION TO RASTER-BASED GEOGRAPHIC INFORMATION SYSTEMS (GIS)**

4 Credits (3 hrs. lec., 3 hrs. lab.) Instruction in GIS data sets including raster-based information such as images or photographs, acquisition of such data, and processing and merging with vector data. Introduction to grid or continuous GIS data sets including DEMs, TINs, aerial and satellite imagery, and others; as well as processing and merging with vector data. Students collect, process, and summarize images to produce a thematic map; explain geo-referencing of photos or images to maps; effectively operate image processing software including Spatial Analyst and ENVI Image Processing/Analysis package; interpret photos and images to produce map data; analyze geographic information and merge with photographic information in raster formats. Prerequisite: CRTG 1411; ENGL 0305 or 0316 AND ENGL 0307 or 0326

**CRTG 1491 - SPECIAL TOPICS IN CARTOGRAPHY**

4 Credits (3 hrs. lec., 3 hrs. lab.) Topics address recently identified current events, skills, knowledge, and/or attitudes and behaviors pertinent to the technology or occupation and relevant to the professional development of the student. Learning outcomes/objectives are determined by local occupational need and business and industry trends. Students will complete a project based on a defined problem, independent research and integration of existing databases, analysis and a final report defining the conclusions derived from the project. Prerequisite: CRTG 1411 and departmental approval; ENGL 0305 or 0316 AND 0307 or 0326

**CRTG 2380 - COOPERATIVE EDUCATION - CARTOGRAPHY**

3 Credits (1 hr. lec., 20 hrs. ext.) Career-related activities encountered in the student’s area of specialization offered through an individualized agreement among the college, employer, and student. Under the supervision of the college and the employer, the student combines classroom learning with work experience. Includes a lecture component. Students will demonstrate their understanding of theory and concepts, utilizing facilities and procedures effectively, to complete individual and team projects with appropriate written and verbal communication reflecting competency with in their business/industry. Prerequisite: CRTG 1411 and departmental approval; ENGL 0305 or 0316 and ENGL 0307 or 0326

**CRTG 2401 - DATA ACQUISITION AND ANALYSIS IN GIS**

4 Credits (3 hrs. lec., 3 hrs. lab.) Study of the management of geographic information, system life cycles, and costs and benefits. Topics include demographic management and institutional issues such as data providers, data management, combination of attribute and graphical data, information storage and access, Texas and national standards for spatial data; and applications of GIS for demographic modeling and analysis. Emphasis is placed on the purpose and analysis of metadata sets for a project; outline of national and international census data infrastructure; selection and evaluation of data for source, quality, and collection. Student will formulate geographic-based databases queries; establish an audit trail; use geographic information in decision-making; design a data acquisition project and utilize datum, coordinate systems and mapping projections. Prerequisite: CRTG 1401, ENGL 0305 or 0316 AND ENGL 0307 or 0326; Corequisite: MATH 1314; Recommended ENGL 2311

**CRTG 2411 - GEOGRAPHIC INFORMATION SYSTEMS (GIS) APPLICATIONS**

4 Credits (3 hrs. lec., 3 hrs. lab.) Application of GIS technology to real workplace applications from public and private sectors. Completion of global positioning systems (GPS) fieldwork required for lab exercises. Students will relate the use of GIS for infrastructure management; recognizing accuracy and precision in different workplace applications. The student will create real world projects of geographic information; reduce digital field data to produce final plans and technical reports which will accompany the presentation on both hard copy and PowerPoint. Prerequisite: CRTG 1401; ENGL 0305 or 0316 and ENGL 0307 or 0326. Recommended: ENGL 2311.
DESCRIPTION OF COURSES

CRTG 2464 - PRACTICUM OR FIELD EXPERIENCE - CARTOGRAPHY
4 Credits (3 hrs. lec., 3 hrs. lab.) Practical, general workplace training supported by an individualized learning plan developed by the employer, college, and student. As outlined in the learning plan, the student will apply the theory, concepts, and skills involving specialized materials, equipment, procedures, regulations, and interactions within and among environmental, social, and governmental occupations and will demonstrate responsible behavior, safety practices, interpersonal and teamwork skills, and effective communication skills to create success. Prerequisite: None; Corequisite: CRTG 2411; ENGL 2311

CSME 1248 - PRINCIPLES OF SKIN CARE
2 Credits (6 hrs. lab.) An introduction to the theory and practice of skin care. Prerequisite: CSME 1420 and 1421

CSME 1254 - ARTISTRY OF HAIR DESIGN I
2 Credits (1 hr. lec., 4 hrs. lab.) Introduction to hair design. Topics include the theory and applications of wet styling, thermal hair styling, and finishing techniques. Prerequisite: ENGL 0305 or 0316, ENGL 0306 or 0325; Corequisite: CSME 1310 and 1501; or departmental approval

CSME 1310 - INTRODUCTION TO HAIRCUTTING AND RELATED THEORY
3 Credits (1 hr. lec., 8 hrs. lab.) Introduction to the theory and practice of hair cutting. Topics include terminology, implements, section haircutting and finishing techniques. Prerequisite: ENGL 0305 or 0316, ENGL 0306 or 0325; Corequisite: CSME 1254, 1501, and 1505; or departmental approval

CSME 1420 - ORIENTATION TO FACIAL SPECIALIST
4 Credits (2 hrs. lec., 7 hrs. lab.) An overview of the skills and knowledge necessary for the field of facials and skin care. Prerequisite: Departmental approval upon assessment testing; ENGL 0305 or 0316 and ENGL 0306 or 0325; Corequisite: CSME 1421

CSME 1421 - PRINCIPLES OF FACIAL/ESTHETIC TECHNOLOGY I
4 Credits (2 hrs. lec., 6 hrs. lab.) An introduction to the principles of facial and esthetic technology. Topics include anatomy, physiology, theory, and related skills of facial and esthetic technology. Corequisite: CSME 1420; ENGL 0305 or 0316 and ENGL 0306 or 0325

CSME 1430 - ORIENTATION TO NAIL TECHNOLOGY
4 Credits (2 hrs. lec., 6 hrs. lab.) An overview of the fundamental skills and knowledge necessary for the field of nail technology. Prerequisite: Departmental approval upon assessment testing; ENGL 0305 or 0316 and ENGL 0306 or 0325; Corequisite: CSME 1531

CSME 1434 - COSMETOLOGY INSTRUCTOR
4 Credits (2 hrs. lec., 6 hrs. lab.) The fundamentals of instruction of cosmetology students. Corequisite: CSME 1435

CSME 1435 - ORIENTATION TO THE INSTRUCTION OF COSMETOLOGY
4 Credits (2 hrs. lec., 6 hrs. ext.) An overview of the skills and knowledge necessary for the instruction of cosmetology students. Prerequisite: 3 years of field experience, Texas operator’s license and 12 credit hours of academic work including ENGL 1301; ENGL 0305 or 0316 and ENGL 0306 or 0325

CSME 1441 - PRINCIPLES OF NAIL TECHNOLOGY II
4 Credits (2 hrs. lec., 6 hrs. lab.) Advanced concepts and principles of nail technology. Topics include advanced instruction in anatomy, physiology, theory, and related skills of nail technology. Prerequisite: CSME 1430 and 1531 with a “C” or better or departmental approval; ENGL 0305 or 0316 and ENGL 0306 or 0325

CSME 1445 - PRINCIPLES OF FACIALS/ESTHETIC TECHNOLOGY II
4 Credits (2 hrs. lec., 7 hrs. lab.) Advanced concepts and principles of skin care and other related technologies. Topics include advanced instruction in anatomy, physiology, theory, and related skills of facial and esthetic technology. Prerequisite: CSME 1421 and 1520 with a “C” or better or departmental approval; ENGL 0305 or 0316 and ENGL 0306 or 0325; Corequisite: CSME 2431

CSME 1447 - PRINCIPLES OF SKIN CARE/FACIAL AND RELATED THEORY
4 Credits (2 hrs. lec., 6 hrs. lab.) In-depth coverage of the theory and practice of skin care, facials, and cosmetics. Prerequisite: CSME 1421
CSME 1501 - ORIENTATION TO COSMETOLOGY
5 Credits (3 hrs. lec., 8 hrs. lab.) An overview of the skills and knowledge necessary for the field of cosmetology. Prerequisite: Departmental approval upon assessment; ENGL 0305 or 0316 and ENGL 0306 or 0325; Corequisite: CSME 1254, 1310, and 1505; or departmental approval

CSME 1505 - FUNDAMENTALS OF COSMETOLOGY
5 Credits (3 hrs. lec., 8 hrs. lab.) A course in the basic fundamentals of cosmetology. Topics include service preparation, manicure, facial, chemical services, shampoo, haircut, wet styling, comb out, and salon management. Corequisite: CSME 1254, 1310, and 1501; ENGL 0305 or 0316 and ENGL 0306 or 0325; or departmental approval

CSME 1531 - PRINCIPLES OF NAIL TECHNOLOGY I
5 Credits (3 hrs. lec., 8 hrs. lab.) A course in the principles of nail technology. Topics include anatomy, physiology, theory, and related skills of nail technology. Corequisite: CSME 1430 or departmental approval; ENGL 0305 or 0316 and ENGL 0306 or 0325

CSME 1553 - CHEMICAL REFORMATION & RELATED THEORY
5 Credits (3 hrs. lec., 8 hrs. lab.) Presentation of the theory and practice of chemical reformation. Topics include terminology, application, and workplace competencies related to chemical reformation. Prerequisite: CSME 1254, 1310, 1501, and 1505 with a “C” or better or departmental approval; ENGL 0305 or 0316 and ENGL 0306 or 0325; Corequisite: CSME 2501

CSME 2310 - INTERMEDIATE HAIRCUTTING & RELATED THEORY
3 Credits (1 hr. lec., 4 hrs. lab.) Advanced concepts and practice of haircutting. Topics include haircuts utilizing scissors, razors, and/or clippers. Prerequisite: CSME 1553 and 2501 with a “C” or better or departmental approval; ENGL 0305 or 0316 and ENGL 0306 or 0325; Corequisite: CSME 2337

CSME 2337 - ADVANCED COSMETOLOGY TECHNIQUES
3 Credits (1 hr. lec., 8 hrs. lab.) Mastery of advanced cosmetology techniques including hair designs, professional cosmetology services, and workplace competencies. Corequisite: CSME 2310; ENGL 0305 or 0316 and ENGL 0306 or 0325

CSME 2414 - COSMETOLOGY INSTRUCTOR II
4 Credits (2 hrs. lec., 6 hrs. lab.) A continuation of the fundamentals of instruction of cosmetology students. Prerequisite: CSME 1434 and 1435 with a “C” or better or departmental approval; ENGL 0305 or 0316 and ENGL 0306 or 0325

CSME 2415 - COSMETOLOGY INSTRUCTOR III
4 Credits (2 hrs. lec., 6 hrs. lab.) Presentation of assignments and evaluation techniques for a cosmetology program. Corequisite: CSME 2444; ENGL 0305 or 0316 and ENGL 0306 or 0325

CSME 2431 - PRINCIPLES OF FACIAL/ESTHETIC TECHNOLOGY III
4 Credits (2 hrs. lec., 6 hrs. lab.) Demonstrate concepts and principles of skin care and other related technologies. Corequisite: CSME 1445; ENGL 0305 or 0316 and ENGL 0306 or 0325

CSME 2444 - COSMETOLOGY INSTRUCTOR IV
4 Credits (2 hrs. lec., 6 hrs. lab.) Advanced concepts of instruction in a cosmetology program. Topics include demonstration and implementation of advanced evaluation and assessment techniques. Corequisite: CSME 2415; ENGL 0305 or 0316 and ENGL 0306 or 0325

CSME 2445 - INSTRUCTIONAL THEORY & CLINICAL OPERATION
4 Credits (2 hrs. lec., 6 hrs. lab) An overview of the objectives required by the Texas Department of Licensing and Regulation, Instructor Examination. Prerequisite: Department approval; Corequisite: CSME 2415, 2444

CSME 2501 - PRINCIPLES OF HAIR COLORING AND RELATED THEORY
5 Credits (3 hrs. lec., 8 hrs. lab.) Presentation of the theory and practice of hair coloring and chemistry. Topics include terminology, application, and workplace competencies related to hair coloring and chemistry. Corequisite: CSME 1553; ENGL 0305 or 0316 and ENGL 0306 or 0325

CSME 2530 - NAIL ENHANCEMENT
5 Credits (3 hrs. lec., 8 hrs. lab.) A course in the general principles of the theory and application of artificial nails and related technology. Prerequisite: ENGL 0305 or 0316 and ENGL 0306 or 0325; Corequisite: CSME 1441 or departmental approval
DESCRIPTION OF COURSES

CSME 2539 - ADVANCED HAIR DESIGN
5 Credits (3 hrs. lec., 8 hrs. lab.) Advanced concepts in the theory and practice of hair design. Corequisite: CSME 2541; ENGL 0305 or 0316 and ENGL 0306 or 0325

CSME 2541 - PREPARATION FOR TC EXAMINATION
5 Credits (3 hrs. lec., 8 hrs. lab.) Preparation for the Texas Department of Licensing and Regulation Examination. Prerequisite: CMSE 2310 and 2337 with a "C" or better or departmental approval; ENGL 0305 or 0316 and ENGL 0306 or 0325; Corequisite: CSME 2539

CTMT 1191 - SPECIAL TOPICS IN COMPUTED TOMOGRAPHY TECHNOLOGY/TECHNICIAN
1 Credit (1 hr. lec.) Topics address recently identified current events, skills, knowledge and/or attitudes and behaviors pertinent to the technology or occupation and relevant to the professional development of the student. Prerequisite: ENGL 0305, ENGL 0307, MATH 0310 ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

CTMT 2332 - PRINCIPLES OF COMPUTED TOMOGRAPHY
3 Credits (3 hrs. lec.) In-depth coverage of computed tomography imaging techniques. Image quality assurance and radiation protection are emphasized. Prerequisite: Admission to the program; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

CTMT 2336 - COMPUTED TOMOGRAPHY EQUIPMENT & METHODOLOGY
3 Credits (3 hrs. lec.) Skill development in the operation of computed tomographic equipment, focusing on routine protocols, image quality, quality assurance and radiation protection. Prerequisite: Admission to the program; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

CTMT 2360 - CLINICAL
3 Credits (9 hrs. ext.) A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional. Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

CTMT 2361 - CLINICAL
3 Credits (9 hrs. ext.) A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional. Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

DAAC 1304 - PHARMACOLOGY OF ADDICTION
3 Credits (3 hrs. lec.) Psychological, physiological, and sociological effects of mood altering substances and behaviors and their implications for the addiction process are discussed. Emphasis is placed on pharmacological effects of tolerance, dependency/withdrawal, cross addiction, and drug interaction. Prerequisite: ENGL 0304, ENGL 0306

DAAC 1309 - ASSESSMENT SKILL OF ALCOHOL AND OTHER DRUG ADDICTIONS
3 Credits (3 hrs. lec.) Examines procedures by which a counselor/program identifies and evaluates an individual's strengths, weaknesses, problems, and needs which will be used in the development of a treatment plan. Prepares the student to appropriately explain assessment results and individual rights to clients. Prerequisite: ENGL 0304, ENGL 0306

DAAC 1311 - COUNSELING THEORIES
3 Credits (3 hrs. lec.) An introduction to major theories of various treatment modalities including reality therapy, psycho-dynamic, grief therapy, client-centered therapy, rational-emotive therapy, cognitive-behavioral approached such as life skills training, behavioral modification, and the introduction to experiential therapies as they relate to detoxification, residential, out-patient, and extended treatment. Prerequisite: ENGL 0304, ENGL 0306

DAAC 1314 - DYNAMICS OF GROUP COUNSELING
3 Credits (3 hrs. lec.) An introduction to the patterns and dynamics of group interactions across the life span. Focus includes group therapy, structure, types, stages, development, leadership, therapeutic factors, the impact of groups on the individual, group growth, and behavior. Effective group facilitation skills and
techniques used to address special population issues and needs are covered. Effective case management and record keeping are addressed. Prerequisite: ENGL 0304, ENGL 0306

**DAAC 1317 - BASIC COUNSELING SKILLS**

3 Credits (3 hrs. lec.) This course is designed to facilitate development of the basic communication skills necessary to develop an effective helping relationship with clients. Includes the utilization of special skills to assist individuals, families, or groups in achieving objectives through exploration of a problem and its ramifications; examination of attitudes and feelings; consideration of alternative solutions; and decision-making. Prerequisite: ENGL 0304, ENGL 0306

**DAAC 1319 - INTRODUCTION TO ALCOHOL AND OTHER DRUG ADDICTIONS**

3 Credits (3 hrs. lec.) Causes and consequences of addiction as they relate to the individual, family, community, and society are discussed. Response alternative regarding intervention, treatment, education, and prevention are reviewed. Competencies and requirements for licensure in Texas are explained. Addiction issues related to diverse populations are presented. Prerequisite: ENGL 0304, ENGL 0306

**DAAC 1341 - COUNSELING ALCOHOL AND OTHER DRUG ADDICTIONS**

3 Credits (3 hrs. lec.) This course will focus on special skills and techniques in the application of counseling skills for the Alcohol and Other Drug (AOD) client. Design and utilization of treatment planning using a treatment team approach will be introduced. Confidentiality and ethical issues will be reviewed and practiced. Prerequisite: ENGL 0304, ENGL 0306

**DAAC 1343 - CURRENT ISSUES**

3 Credits (3 hrs. lec.) A study of issues that impact addiction counseling. Special populations, dual diagnosis, ethics, gambling, and infectious diseases associated with addiction counseling will be investigated. Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

**DAAC 2160 - CLINICAL**

1 Credit (6 hrs. ext.) A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional. Prerequisite: DAAC 1317; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

**DAAC 2260 - CLINICAL**

2 Credit (1 hr. lec., 11 hrs. ext.) A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional. Prerequisite: DAAC 1317; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

**DAAC 2360 - CLINICAL**

3 Credit (1 hr. lec., 17 hrs. ext.) A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional. Prerequisite: DAAC 1317; ENGL 0304, ENGL 0306

**DANC 1151 - DANCE PERFORMANCE I**

1 Credit (3 hrs. lab.) This course provides the students with the opportunity to participate in the rehearsal and performance of dance works. (5003015226) Corequisite: Enrollment in a dance technique course; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

**DANC 1152 - DANCE PERFORMANCE II**

1 Credit (3 hrs. lab.) This course is a continuation of DANC 1151. Opportunities are provided to participate in the rehearsal and performance of dance works. (5003015226) Prerequisite: DANC 1151; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing; Corequisite: Enrollment in a dance technique course

**DANC 1241 - BALLET I**

2 Credits (1 hr. lec., 2 hrs. lab.) This introductory course provides instruction and practice in beginning ballet technique. Emphasis is upon placement, alignment, technique and terminology. Classical ballet barre, center work and floor combinations are utilized. (5003015226) Prerequisite: Course may be taken as a corequisite with ENGL 0305 or 0316 and ENGL 0307 or 0326
DESCRIPTION OF COURSES

**DANC 1242 - BALLET II**
2 Credits (1 hr. lec., 2 hrs. lab.) This course is a continuation of DANC 1241 and provides additional instruction and practice in beginning ballet technique. Emphasis is upon placement, alignment, technique and terminology. Classical ballet barre, center work and floor combinations are utilized. (5003015226) Prerequisite: DANC 1241; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing.

**DANC 1245 - MODERN DANCE I**
2 Credits (1 hr. lec., 2 hrs. lab.) This introductory course provides instruction and practice in beginning modern dance technique. Emphasis is upon placement, alignment, technique and terminology. Basic floor, center and locomotor techniques are utilized. (5003015226) Prerequisite: Course may be taken as a corequisite with ENGL 0305 or 0316 and ENGL 0307 or 0326.

**DANC 1246 - MODERN DANCE II**
2 Credits (1 hr. lec., 2 hrs. lab.) This course is a continuation of DANC 1245. It provides intermediate instruction and practice in modern dance technique. Emphasis continues to be upon placement, alignment, technique and terminology. Intermediate patterns of floor, center and locomotor technique are used. (5003015226) Prerequisite: DANC 1245; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing.

**DANC 1247 - JAZZ I**
2 Credits (1 hr. lec., 2 hrs. lab.) This introductory course provides instruction and practice in beginning jazz dance. Emphasis is upon placement, alignment, technique and terminology. Body awareness and development, rhythm awareness, jazz styles and rhythmic combinations of movement are studied. (5003015226) Prerequisite: Course may be taken as a corequisite with ENGL 0305 or 0316 and ENGL 0307 or 0326.

**DANC 1248 - JAZZ II**
2 Credits (1 hr. lec., 2 hrs. lab.) This course is a continuation of DANC 1247. It provides intermediate instruction and practice in jazz dance technique. Emphasis continues to be upon placement, alignment, technique and terminology. Intermediate patterns involving body awareness and development, rhythm awareness, jazz styles and rhythmic combinations of movement are studied. (5003015226) Prerequisite: DANC 1247; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing.

**DANC 1301 - DANCE COMPOSITION**
3 Credits (3 hrs. lec.) This course provides instruction and practice in the analysis of the basic elements of dance. Emphasis is upon the use of space, rhythm, time and energy. Opportunities to analyze, explore, and study elements of movement design are provided. (5003015226) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing.

**DANC 2151 - DANCE PERFORMANCE III**
1 Credit (3 hrs. lab.) This course is a continuation of DANC 2152. This course provides students with the opportunity to participate in the rehearsal and performance of intermediate and advanced performance technique. (5003015226) Prerequisite: DANC 2151; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing; Corequisite: Enrollment in a dance technique course.

**DANC 2152 - DANCE PERFORMANCE IV**
1 Credit (3 hrs. lab.) This course is a continuation of DANC 2151. This course provides students with the opportunity to participate in the rehearsal and performance of intermediate and advanced performance technique. (5003015226) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing; Corequisite: Enrollment in a dance technique course.

**DANC 2241 - BALLET III**
2 Credits (1 hr. lec., 2 hrs. lab.) This course is a continuation of DANC 1242. The development of ballet technique is continued. More complex exercises at the barre and center are included. Emphasis is on longer series of movement, adagio, and allegro with precision of movement. (5003015226) Prerequisite: DANC 1242; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing.

**DANC 2242 - BALLET IV**
2 Credits (1 hr. lec., 2 hrs. lab.) This course is a continuation of DANC 2241. It is designed for the advanced level student. Skills include advanced barre
and center work, refining basic movement technique and extensive work on dance routines. Pointe work may be introduced. (5003015226) Prerequisite: DANC 2241; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

**DANC 2245 - MODERN DANCE III**

2 Credits (1 hr. lec., 2 hrs. lab.) This course is a continuation of DANC 1246. The development of modern dance technique is continued. More complex floor, center and locomotor exercises are included. Emphasis is on elements of modern dance movement including time, force and space. Longer and more complex series of movements are utilized. (5003015226) Prerequisite: DANC 1246; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

**DANC 2246 - MODERN DANCE IV**

2 Credits (1 hr. lec., 2 hrs. lab.) This course is a continuation of DANC 2245. The development of modern dance technique is continued. More complex floor, center and locomotor exercises are included. Emphasis is on elements of modern dance movement including time, force and space. Longer and more complex series of movements are utilized. (5003015226) Prerequisite: DANC 2245; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

**DANC 2247 - JAZZ III**

2 Credits (1 hr. lec., 2 hrs. lab.) This course is a continuation of DANC 1247. It is designed for the advanced level student. Skills include the performance and development of complex jazz rhythms, turns and jumps. (5003015226) Prerequisite: DANC 1247; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

**DANC 2248 - JAZZ IV**

2 Credits (1 hr. lec., 2 hrs. lab.) This course is a continuation of DANC 2247. It is designed for the advanced level student. Skills include the performance and development of complex jazz rhythms, turns and jumps. (5003015226) Prerequisite: DANC 2247; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

**DANC 2303 - DANCE APPRECIATION**

3 Credits (3 hrs. lec.) The cultural, historical and aesthetic qualities of dance are presented through lectures, films, videos, and dance productions. Primitive, classical and contemporary dance forms are included. (5003015426) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

**DANC 2389 - ACADEMIC CO-OP IN DANCE**

3 Credits (1 hr. lec., 16 hrs. ext.) An instructional program designed to integrate on campus study with practical hands on work experience in dance. In conjunction with class seminars, the individual student will set specific goals and objectives in dance. (2401035212) Prerequisite: Departmental Approval; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

**DFTG 1305 - TECHNICAL DRAFTING**

3 Credits (2 hrs. lec., 4 hrs. lab.) Introduction to the principles of drafting to include terminology and fundamentals, including size and shape descriptions, projection methods, geometric construction, sections, auxiliary views, and reproduction processes. Corequisite: None

**DFTG 1309 - BASIC COMPUTER-AIDED DRAFTING**

3 Credits (2 hrs. lec., 4 hrs. lab.) An introduction to computer-aided drafting. Emphasis is placed on setup; creating and modifying geometry; storing and retrieving predefined shapes; placing, rotating, and scaling objects, adding text and dimensions, using layers, coordinate systems; and plot/print to scale. Prerequisite: None

**DFTG 1317 - ARCHITECTURAL DRAFTING RESIDENTIAL**

3 Credits (2 hrs. lec., 4 hrs. lab.) Architectural drafting procedures, practices, and symbols, including preparation of detailed working drawings for residential structure with emphasis on light frame construction methods. Prerequisite: DFTG 1305, 1309, 2331 and CNBT 1311

**DFTG 1325 - TECHNICAL READING AND SKETCHING**

3 Credits (2 hrs. lec., 2 hrs. lab.) An introduction to reading and interpreting working drawings for manufactured products and associated tooling; use
DESCRIPTION OF COURSES

sketching techniques to create pictorial and multiple-view drawings. The student will solve related math equations, geometric dimensioning and tolerancing; and interpreted shop operations. Prerequisite: Placement into MATH 1314 or credit for MATH 0310 with a grade of “C” or better; placement into ENGL 0305 or ENGL 0313; or instructor approval.

DFTG 1371 - METAL BUILDING SYSTEMS I

3 Credits (3 hrs. lec.) Course introduces the student to pre-engineered metal building framing, component and design systems. Prerequisite: CNBT 1311

DFTG 1372 - STRUCTURAL STEEL DETAILING

3 Credits (2 hrs. lec., 4 hrs. lab.) This course covers the preparation of structural steel drawings and bills of material for the purpose of fabrication and erection. Emphasis will be placed upon using structural design framing plans to develop detailed steel members, connections, and assemblies. Prerequisite: DFTG 2310 and MATH 1316; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing.

DFTG 2302 - MACHINE DRAFTING

3 Credits (2 hrs. lec., 4 hrs. lab.) Production of detail and assembly drawings of machines, threads, gears, cams, tolerances and limit dimensioning, surface finishes, and precision drawings. Prerequisite: DFTG 1305 and 1309 or 2319

DFTG 2310 - STRUCTURAL DRAFTING

3 Credits (2 hrs. lec., 4 hrs. lab.) Discussion of detail drawings of structural shapes for fabrication with emphasis on framed and seated connectors and beam and column detailing. Designed to meet the standards of American Institute of Steel Construction, including units on concrete detailing conforming to American Concrete Institute standards. Prerequisite: DFTG 1305, 1309; CNBT 1311; Corequisite: DFTG 2319

DFTG 2312 - TECHNICAL ILLUSTRATION

3 Credits (2 hrs. lec., 4 hrs. lab.) Topics include pictorial drawing including isometrics, obliques, perspectives, charts, and graphs; shading and transfer lettering; and use of different media. Prerequisite: DFTG 1305, 1309, or 2319

DFTG 2319 - INTERMEDIATE COMPUTER-AIDED DRAFTING

3 Credits (2 hrs. lec., 4 hrs. lab.) A continuation of practices and techniques used in basic computer-aided drafting emphasizing advanced dimensioning techniques, the development and use of prototype drawings, construction of pictorial drawings, construction of 3 dimensional drawings, interfacing 2-D and 3-D environments and extracting data. Creation of batched files, scripted files, customized program menus, and extended attributes. Prerequisite: Departmental approval

DFTG 2323 - PIPE DRAFTING

3 Credits (2 hrs. lec., 4 hrs. lab.) A study of pipe fittings, symbols, specifications and their applications to a piping process system. Creation of symbols and their usage in flow diagrams, plans, elevations, and isometrics. Prerequisite: DFTG 1305 and 1309 or 2319

DFTG 2328 - ARCHITECTURAL DRAFTING COMMERCIAL

3 Credits (2 hrs. lec., 4 hrs. lab.) Architectural drafting procedures, practices, and symbols including the preparation of detailed working drawings for a commercial building, with emphasis on commercial construction methods. Prerequisite: DFTG 1305, 1309, or 2319; DFTG 2331; CNBT 1311

DFTG 2331 - ADVANCED TECHNOLOGIES IN ARCHITECTURAL DESIGN AND DRAFTING

3 Credits (2 hrs. lec., 4 hrs. lab.) Use of architectural specific software to execute the elements required in designing standard architectural exhibits utilizing custom features to create walls, windows and specific design requirements for construction in residential/commercial and industrial architecture. Prerequisite: DFTG 1305, AND DFTG 1309 or 2319

DFTG 2335 - ADVANCED TECHNOLOGIES IN MECHANICAL DESIGN AND DRAFTING

3 Credits (2 hrs. lec., 4 hrs. lab.) Use parametric based mechanical design software for mechanical assembly design and drafting. Prerequisite: MCHN 1319; Corequisite: DFTG 2340
DFTG 2336 - COMPUTER AIDED DRAFTING/PROGRAMMING

3 Credits (2 hrs. lec., 4 hrs. lab.) Use of programming language to enhance CAD Software. Prerequisite: DFTG 1305 and 1309 or 2319; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing.

DFTG 2338 - FINAL PROJECT: ADVANCED DRAFTING

3 Credits (2 hrs. lec., 4 hrs. lab.) A drafting course in which students participate in a comprehensive project from conception to conclusion. Prerequisite: Departmental approval.

DFTG 2340 - SOLID MODELING/DESIGN

3 Credits (2 hrs. lec., 4 hrs. lab.) A computer-aided modeling course. Development of three-dimensional drawings and models from engineering sketches and orthographic drawings and utilization of three-dimensional models in design work. Prerequisite: DFTG 1305 and 1309 or 2319.

DFTG 2371 - METAL BUILDING SYSTEMS II

3 Credits (2 hrs. lec., 4 hrs. lab.) Course introduces student to detailing, fabrication, and field erection of pre-engineered metal building framing and component systems. Prerequisite: DFTG 1371; MATH 1316.

DHYG 1123 - DENTAL HYGIENE PRACTICE

1 Credit (1 hr. lec.) Examination of the dental hygienists role in practice settings, including dental office management, employment considerations, resume preparation, and job interviewing. Emphasis on the laws governing the practice of dentistry and dental hygiene and the ethical standards established by the dental hygiene profession. Prerequisites: DHYG 1207, 1235, 1339, 2231 and 2362; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing; Corequisites: DHYG 1215 and 2363.

DHYG 1160 - CLINICAL DENTAL HYGIENE/HYGgienist II

1 Credit (6 hrs. ext.) A method of instruction providing detailed education, training and work-based experience and direct patient/client care in the dental hygiene clinic on the Kingwood College campus. Specific detailed learning objectives are developed for each course by the faculty. On-site clinical instruction, supervision, evaluation and placement are the responsibility of the college faculty. Clinical experiences are unpaid learning experiences. Prerequisites: DHYG 1211, 1260, and 2201; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing; Corequisites: DHYG 1319.

DHYG 1203 - PREVENTIVE DENTAL HYGIENE I

2 Credits (2 hrs. lec., 1 hr. lab.) Techniques for teaching patients with mild periodontal disease proper home care. Includes basic concepts of disease prevention, health promotion, communication, and behavior. Prerequisite: Acceptance into the Dental Hygiene Program; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing; Corequisite: DHYG 1304, 1431 and 1301.

DHYG 1207 - GENERAL AND DENTAL NUTRITION

2 Credits (2 hrs. lec.) A study of general nutrition and nutritional biochemistry with emphasis on the effects of nutrition and dental health. Analysis of diet and application of counseling strategies to assist the patient in attaining and maintaining optimum oral health are stressed. Prerequisites: DHYG 1319 and 1160; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing; Corequisites: DHYG 1235, 1339, 2231 and 2362.

DHYG 1211 - PERIODONTOLOGY

2 Credits (2 hrs. lec.) A study of normal and diseased periodontium to include the structural, functional and environmental factors. Emphasis on etiology, pathology, treatment modalities and therapeutic and preventive periodontics in a contemporary private practice setting. Prerequisites: DHYG 1301, 1339, 1203 and 1304; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing; Corequisites: DHYG 1260 and 2201.

DHYG 1215 - COMMUNITY DENTISTRY

2 Credits (1 hr. lec., 3 hrs. lab.) A study of community dentistry concepts, methods, materials and technology used to promote dental health and prevent dental disease through organized, community-based programs. Students will be introduced to their role as community health promoters in resolving critical issues in the current delivery system. Biostatistics, epidemiology and the critical analysis of scientific...
DESCRIPTION OF COURSES

literature will be discussed. Emphasis will be on taking these concepts into the community to promote not only oral health but also overall health. Prerequisites: DHYG 1235, 1207, 1339, 2231 and 2362; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing; Corequisites: DHYG 1123 and 2363

DHYG 1235 - PHARMACOLOGY FOR THE DENTAL HYGIENIST

2 Credits (2 hrs. lec.) A study of classes of drugs and their uses, actions, interactions, side effects and contraindications of drugs commonly taken by patients and recognize oral manifestations associated with drug use. Prerequisites: DHYG 1319 and 1161; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing; Corequisites: DHYG 1207, 1339, 2231 and 2362

DHYG 1260 - CLINICAL DENTAL HYGIENE/HYGIENIST I

2 Credits (12 hrs. ext.) A method of instruction providing detailed education, training and work-based experience and direct patient/client care in the dental hygiene clinic on the Kingwood College campus. Specific detailed learning objectives are developed for each course by the faculty. On-site clinical instruction, supervision, evaluation and placement are the responsibility of the college faculty. Clinical experiences are unpaid learning experiences. Prerequisites: DHYG 1301, 1431, 1203 and 1304; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing; Corequisites: DHYG 1207, 1339, 2231 and 2362

DHYG 1301 - OROFACIAL ANATOMY, HISTOLOGY & EMBRYOLOGY

3 Credits (2 hrs. lec, 3 hrs. lab.) The study of histology and embryology of oral tissues, gross anatomy of the head and neck, tooth morphology and individual tooth identification. Prerequisites: Acceptance into the Dental Hygiene Program; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing; Corequisites: DHYG 1211 and 2201

DHYG 1304 - DENTAL RADIOLOGY

3 Credits (2 hrs. lec, 4 hrs. lab.) The study of radiation physics, hygiene and safety theories. Emphasis is on the fundamentals of oral radiographic techniques including digital radiography and interpretation of radiographs. Included is the exposure of intraoral radiographs, quality assurance, radiographic interpretation, patient selection criteria and other radiographic techniques. Prerequisites: Acceptance into the Dental Hygiene Program; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing; Corequisites: BIOL 2402; DHYG 1431, 1203 and 1301

DHYG 1399 - GENERAL AND ORAL PATHOLOGY

3 Credits (3 hrs. lec.) A general study of disturbances in human body development, diseases of the body and disease prevention measures. Emphasis is on the oral cavity and associated structures. Prerequisites: DHYG 1319 and 1161; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing; Corequisites: DHYG 1207, 1339, 2231 and 2362

DHYG 1431 - PRECLINICAL DENTAL HYGIENE

4 Credits (2 hrs. lec, 6 hrs. lab.) A study of foundational knowledge for performing clinical skills on patients. Emphasis on principles, procedures, and professionalism for performing a comprehensive oral exam and prophylaxis. Prerequisite: Acceptance into the Dental Hygiene Program; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing; Corequisites: DHYG 1301, 1304 and 1203

DHYG 2133 - PREVENTIVE DENTAL HYGIENE II

1 Credit (1 hr. lec.) Continuation of Preventive Dental Hygiene I. Techniques for teaching patients with moderate to severe periodontal disease proper home care. Includes basic concepts of disease prevention and health promotion. Prerequisites: DHYG 1203, 1301, 1431 and 1304; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing; Corequisites: DHYG 1207, 1203 and 2201
DHYG 2201 - CONTEMPORARY DENTAL HYGIENE CARE I
2 Credits (2 hrs. lec, 1 hr. lab.) Introduction to dental hygiene care for the medically or dentally compromised patient. Emphasizes supplemental instrumentation techniques. Prerequisites: DHYG 1301, 1431, 1203 and 1304; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing; Corequisites: DHYG 1260 and 1211

DHYG 2231 - CONTEMPORARY DENTAL HYGIENE CARE II
2 Credits (2 hrs. lec.) A continuation of dental hygiene care for the medically or dentally compromised patient. Emphasizes individual medical conditions and resulting affects on the dentition. Prerequisites: DHYG 1319 and 1161; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing; Corequisites: DHYG 1235, 1207, 1339 and 2362

DHYG 2362 - CLINICAL DENTAL HYGIENE/ HYGIENIST III
3 Credits (16 hrs. ext.) A method of instruction providing detailed education, training and work-based experience and direct patient/client care in the dental hygiene clinic on the Kingwood College campus as well as external clinical sites. Specific detailed learning objectives are developed for each course by the faculty. On-site clinical instruction, supervision, evaluation and placement are the responsibility of the college faculty. Clinical experiences are unpaid learning experiences. Prerequisites: DHYG 1319 and 1161; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing; Corequisites: DHYG 1235, 1207, 1339, and 2231

DHYG 2363 - CLINICAL DENTAL HYGIENE/ HYGIENIST IV
3 Credits (16 ext. hrs.) A method of instruction providing detailed education, training and work-based experience and direct patient/client care in the dental hygiene clinic on the Kingwood College campus as well as external clinical sites. Specific detailed learning objectives are developed for each course by the faculty. On-site clinical instruction, supervision, evaluation and placement are the responsibility of the college faculty. Clinical experiences are unpaid learning experiences. Prerequisites: DHYG 1235, 1207, 1339, 2231 and 2362; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing; Corequisites: DHYG 1215 and 1123

DMSO 1210 - INTRODUCTION TO SONOGRAPHY
2 Credits (1 hr. lec., 2 hrs. lab.) An introduction to the profession of sonography and the role of the sonographer. Emphasis on medical terminology, ethical/legal aspects, written and verbal communication, and professional issues relating to registry, accreditation, professional organizations and history of the profession. Prerequisites: Admission to program; ENGL 0305 or 0316 or placement by testing; ENGL 0307 or 0326 or placement by testing; Corequisites: DMSO 1360, 1351, 1302, and 1405

DMSO 1302 - BASIC ULTRASOUND PHYSICS
3 Credits (2 hrs. lec., 2 hrs. lab.) Basic acoustical physics and acoustical waves in human tissue. Emphasis on ultrasound transmission in soft tissues, attenuation of sound energy, parameters affecting sound transmission, and resolution of sound beams. Prerequisite: Admission to the program; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing; Corequisites: DMSO 1210, 1351, 1405 and 1360

DMSO 1342 - INTERMEDIATE ULTRASOUND PHYSICS
3 Credits (2 hrs. lec., 4 hrs. lab.) Continuation of Basic Ultrasound Physics. Includes interaction of ultrasound with tissues, mechanics of ultrasound production and display, various transducer designs and construction, quality assurance, bioeffects, and image artifacts. May introduce methods of Doppler flow analysis. Prerequisites: DMSO 1210, 1351, 1405, 1302 and 1360; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing; Corequisites: DMSO 2405, 1366 and 2253

DMSO 1351 - SONOGRAPHIC SECTIONAL ANATOMY
3 Credits (2 hrs. lec., 3 hrs. lab.) Sectional anatomy of the male and female body. Includes anatomical relationships of organs, vascular structures, and body planes and quadrants. Prerequisites: Admission to the program; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing; Corequisites: DMSO 1210, 1302, 1405, and 1360
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DMSO 1360 - CLINICAL - DIAGNOSTIC MEDICAL SONOGRAPHY TECHNICIAN
3 Credits (16 hrs. ext.) A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional. Prerequisites: Admission to the program; ENGL 0305 or 0316 or placement by testing; ENGL 0307 or 0326 or placement by testing; Corequisites: DMSO 1210, 1351, 1405 and 1302

DMSO 1366 - PRACTICUM I
3 Credits (24 hrs. ext.) Practical, general workplace training supported by an individualized learning plan developed by the employer, college, and student. Prerequisites: DMSO 1210, 1351, 1405, 1302 and 1360; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing; Corequisites: DMSO 1342, 2405 and 2253

DMSO 1367 - PRACTICUM II
3 Credits (28 hrs. ext.) Practical, general workplace training supported by an individualized learning plan developed by the employer, college, and student. Prerequisites: DMSO 1342, 2405, 1366 and 2253; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing; Corequisites: DMSO 1342 and 2351

DMSO 1405 - SONOGRAPHY OF ABDOMINOPELVIC CAVITY
4 Credits (3 hrs. lec., 2 hrs. lab.) Normal and pathological abdominal and pelvic structures as related to scanning techniques, patient history and laboratory data, transducer selection, and scanning protocols. Prerequisites: Admission to program; Corequisites: DMSO 1210, 1360, 1351 and 1405

DMSO 2130 - ADVANCED ULTRASOUND REVIEW
1 Credit (3 hrs. lab.) Knowledge, skills, and professional values within a legal and ethical framework addressing emerging technologies and professional development. Prerequisites: DMSO 2342 and 1367; Corequisites: DMSO 2366 and 2245, and DSVT 2200

DMSO 2245 - ADVANCED SONOGRAPHY PRACTICES
2 Credits (2 hrs. lec.) Exploration of advanced sonographic procedures and emerging ultrasound applications. Prerequisites: DMSO 2351, 2342 and 1367; Corequisites: DMSO 2366, 2130 and DSVT 2200

DMSO 2253 - SONOGRAPHY OF SUPERFICIAL STRUCTURES
2 Credits (2 hrs. lec., 1 hr. lab.) Detailed study of normal and pathological superficial structures as related to scanning techniques, patient history and laboratory data, transducer selection, and scanning protocols. Prerequisites: DMSO 1210, 1360 and 1351, 1405 and 1302; Corequisites: DMSO 1342, 1366 and 2405

DMSO 2342 - SONOGRAPHY OF HIGH RISK OBSTETRICS
3 Credits (3 hrs. lec.) Maternal disease and fetal abnormalities. Includes scanning techniques, patient history and laboratory data, transducer selection, and scanning protocols. Prerequisites: DMSO 2253, 2405, 1342, and 1366; Corequisites: DMSO 1367 and 2351

DMSO 2351 - DOPPLER PHYSICS
3 Credits (2 hrs. lec., 3 hrs. lab.) Doppler and hemodynamic principles relating to arterial and venous imaging and testing. Prerequisites: DMSO 2253, 2405, 1342, 1366; Corequisites: DMSO 1367 and 2342

DMSO 2366 - PRACTICUM III
3 Credits (24 hrs. ext.) Practical, general workplace training supported by an individualized learning plan developed by the employer, college, and student. Prerequisites: DMSO 2351, 2342 and 1367; Corequisites: DMSO 2245, 2130 and DSVT 2200

DMSO 2405 - SONOGRAPHY OF OBSTETRICS/GYNECOLOGY
4 Credits (3 hrs. lec., 2 hrs. lab.) Detailed study of the pelvis and obstetrics/gynecology as related to scanning techniques, patient history and laboratory data, transducer selection, and scanning protocols. Prerequisites: DMSO 1210, 1302, 1360, 1351 and 1405; Corequisites: DMSO 1342, 1366, 2253 and 2405

DRAM 1120, 1121, 2120, 2121 - THEATRE PRACTICUM
1 Credit (3 hrs. lab.) This course is open to all students interested in theatrical production and is recommended for all students participating in productions. Credit is earned for technical work (costuming, lighting, set construction, publicity and make-up), performance work, or other participation as designated by departmental faculty. It may be taken for four credit hours maximum. (5005015226) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing
**DRAM 1161, 1162 - MUSICAL THEATRE I & II**

1 Credit (5 hrs. lab.) This course provides practical experience in auditioning, rehearsing, and performing in a major musical. (5009036126) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

**DRAM 1220 - THEATRE PRACTICUM: LIGHTING AND SOUND**

2 Credits (1 hr. lec., 2 hrs. lab.) This course provides students a foundation in lighting and sound for the theatre. Classroom instruction supports the hands-on experience in designing and providing technical support for theatre productions and events. (5005015226) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

**DRAM 1310 - INTRODUCTION TO THEATRE**

3 Credits (3 hrs. lec.) This course surveys dramatic ARTS including plays, basic theories, history, stages, make-up, costuming, acting and directing. It provides an introduction to the theatre plant and theatre activities augmented by textbook study of stage terminology and an introduction to the organization of production procedure. (5005015126) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

**DRAM 1322 - STAGE MOVEMENT**

3 Credits (3 hrs. lec.) Basic postural alignment and movement, emphasis on body awareness and rhythm. (5005065426) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

**DRAM 1330 - STAGECRAFT I**

3 Credits (2 hrs. lec., 4 hrs. lab.) This lecture-laboratory course introduces students to the aesthetics and practice of stagecraft design and provides the student with a basic understanding of the design requirements for the technical aspects of a play. This course will include hands-on design experience. (5005025126) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

**DRAM 1341 - INTRODUCTION TO MAKE-UP**

3 Credits (1 hr. lec., 4 hrs. lab.) The design and execution of make-up for the purpose of developing believable characters. A discussion of basic makeup principles and practical experience of makeup application. (5005025226) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

**DRAM 1342 - INTRODUCTION TO COSTUME**

3 Credits (2 hrs. lec., 2 hrs. lab.) This course introduces students to the principles and techniques of costume design and construction for theatrical productions. Students interested in concentrating on costume design should also enroll in DRAM 2331 Stagecraft for a more extensive laboratory experience. (5005025326) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

**DRAM 1351 - ACTING I**

3 Credits (3 hrs. lec.) This course provides an introduction to the art of acting, emphasizing the techniques of speech and movement on the stage, pantomime, character analysis, through participation in lab scenes, improvisations and departmental productions. (5005035126) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

**DRAM 1352 - ACTING II**

3 Credits (3 hrs. lec.) An introduction to the art of acting, with an emphasis on developing vocal and physical skills through work on monologues and scenes as exhibited in various historical periods. (5005035126) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

**DRAM 2331 - STAGECRAFT II**

3 Credits (2 hrs. lec., 4 hrs. lab.) This lecture-laboratory course gives the student a knowledge of the technical phases of mounting a production on stage. The elements of study emphasize basic construction, painting and lighting of the stage setting. (5005025126) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing
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DRAM 2336 - VOICE FOR THE THEATER
3 Credits (3 hrs. lec.) This course covers the basic principles of voice production and development, including diction as it applies to the interpretation of selected literature. Intensive practical application through classroom exercises and special projects is required. (5005035226) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

DRAM 2361 - HISTORY OF THEATRE I
3 Credits (3 hrs. lec.) A study of the history of theatre to 1700. Includes a study of the physical theatre, acting styles, costumes and sets, representative plays, and theories of drama. (5005055126) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

DRAM 2362 - HISTORY OF THEATRE II
3 Credits (3 hrs. lec.) A study of the history of theatre from 1700 to the present. Includes a study of the physical theatre, acting styles, costumes and sets, representative plays, and theories of drama. (5005055126) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

DRAM 2363 - HISTORY OF MUSICAL THEATRE
3 Credits (3 hrs. lec.) The history and development of music theatre excluding opera. (5005055126) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

DRAM 2366 - DEVELOPMENT OF THE MOTION PICTURE
3 Credits (3 hrs. lec.) Explores the history and development of film with emphasis on the analysis of the visual and aural dramatic aspects of narrative films. The historical growth and sociological effect of film as an art. (5005055126) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

DRAM 2389 - ACADEMIC CO-OP IN DRAMA
3 Credits (1 hr. lec., 6 hrs. lab.) This course provides an instructional program designed to integrate on-campus study with practical hands-on work experience in drama. In conjunction with class seminars, the individual student will set specific goals and objectives in drama. (2401035212) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

DSVT 2200 - VASCULAR TECHNOLOGY APPLICATIONS
2 Credits (1 hr. lec., 4 hrs. lab.) Non-invasive vascular technology. Includes 2-D imaging, Doppler, plethysmography, and segmental pressures. Emphasizes protocols for performing basic venous and arterial imaging and non-imaging exams. Prerequisites: DMSO 1367, 2342 and 2351; Corequisites: DMSO 2366, 2245, 2130

ECON 2301 - MACROECONOMICS
3 Credits (3 hrs. lec.) A study of macroeconomic principles. Analysis of the market economy; national income accounting; income determination; stabilization policies: monetary and fiscal policy; money and banking; demand and supply-side economics; monetarist vs. Keynesian view; inflation theories such as distinction between demand-pull and cost-push theories, Phillips curve analysis; labor market and determination of unemployment rate. (4506015125) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing, Math 0306

ECON 2302 - MICROECONOMICS
3 Credits (3 hrs. lec.) A study of micro-economic principles. Analysis of theories of consumer behavior, production, cost; equilibrium analysis in product markets under different market structures, such as perfect competition, monopoly, monopolistic competition, oligopoly; cartels and conglomerate mergers; antitrust policy, economics of regulation; analysis of different types of factor markets and factor price determination. (4506015125) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing, Math 0306

ECON 2371 - SURVEY OF ECONOMIC PRINCIPLES
3 Credits (3 hrs. lec.) This course is a collective assessment of microeconomic and macroeconomic fundamentals directed towards non-business majors with significant emphasis given to the problems of modern-day society. Topics include the free market system and capitalism, scarcity, opportunity cost, specialization, marginal analysis, self-interest, supply
and demand, the business cycle with respect to inflation and recession, monetary and fiscal policy, the Federal Tax System, leading economic indicators, and the four market models. Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

**EDUC 1300 - LEARNING FRAMEWORK**

3 Credits (3 hrs. lec.) A study of the 1) research and theory in the psychology of learning, cognition, and motivation, 2) factors that influence learning, and 3) application of learning strategies. Theoretical models of strategic learning, cognition, and motivation serve as the conceptual basis for teaching and learning strategies used in the classroom. Students are ultimately expected to integrate and apply these theories and learning skills discussed. (4203015125) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing, Math 0310

**EDUC 1301 - INTRODUCTION TO THE TEACHING PROFESSION**

3 Credits (2 hrs. lec., 2 hrs. lab.) An enriched integrated pre-service course and content experience that is designed for undergraduates interested in a teaching career, especially in high need fields such as secondary math and science education, bilingual education, and special education. The course will include opportunities to participate in early field experiences. Students will study the culture of schooling and classrooms from the perspectives of language, gender, socioeconomic, ethnic, and disability-based academic diversity and equity. (1301015109) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing, Math 0310

**EDUC 1325 - PRINCIPLES AND PRACTICES OF MULTICULTURAL EDUCATION**

3 Credits (3 hrs. lec.) An examination of cultural diversity found in society and reflected in the classroom. Topics include the study of major cultures and their influence on lifestyle, behavior, learning, intercultural communication and teaching, as well as psychological stressors encountered by diverse cultural groups. (1301015109) Prerequisite: EDUC 1301; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing, Math 0310

**EDUC 2301 - INTRODUCTION TO SPECIAL POPULATIONS**

3 Credits (3 hrs. lec.) Introduction to special education including characteristics, problems, and needs of the exceptional learner. Public and private services available to the handicapped citizen. Field trips may be required. (1310015109) Prerequisite: EDUC 1301; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing, Math 0310

**ECT 1307 - CONVERGENT TECHNOLOGY**

3 Credits (1 hr. lec., 4 hrs. lab.) A study of telecommunications convergent technologies including telephone, LAN, WAN, wireless, voice, video, and internet protocol. Prerequisite: ITSC 1401; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

**ECT 1371 - VOICE OVER INTERNET PROTOCOL**

3 Credits (2 hrs. lec., 3 hrs. lab.) This course addresses the knowledge and skills necessary to install, maintain and repair Voice over Internet protocol communications. Prerequisite: ITSC 1401 and 1425; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

**ECT 1391 - SPECIAL TOPICS**

3 Credits (3 hrs. lec.) Topics address recently identified current events, skills, knowledge, and/or attitudes and behaviors pertinent to the technology or occupation and relevant to the professional development of the student. Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

**ECT 1403 - INTRODUCTION TO TELECOMMUNICATIONS**

4 Credits (3 hrs. lec., 2 hrs. lab.) An overview of the telecommunications industry. Topics include the history of the telecommunications industry, terminology, rules and regulations, and industry standards and protocols. Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

**ECT 1440 - TELECOMMUNICATIONS TRANSMISSION MEDIA**

4 Credits (3 hrs. lec., 2 hrs. lab.) Fundamentals of telecommunications media, including installation,
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maintenance, and troubleshooting. Topics address media characteristics and connectorization. Prerequisite: Departmental approval; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

EECT 2380 - COOPERATIVE EDUCATION - ELECTRONIC AND COMMUNICATIONS ENGINEERING TECHNOLOGY/TECHNICIAN

3 Credits (1 hr. lec., 20 hrs. ext.) Career-related activities encountered in the student's area of specialization offered through an individualized agreement among the college, employer, and student. Under the supervision of the college and the employer, the student combines classroom learning with work experience. Includes a lecture component. Prerequisite: Near program completion or departmental approval; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

EECT 2430 - TELECOMMUNICATIONS SWITCHING

4 Credits (3 hrs. lec., 2 hrs. lab.) The operation of telecommunications switching equipment and related software. Topics include installation, testing, maintenance, and troubleshooting. Prerequisites: ITCC 1402; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

EECT 2432 - TELECOMMUNICATIONS SIGNALING

4 Credits (3 hrs. lec., 2 hrs. lab.) The study of signaling schemes in telecommunications, Topics include circuits and systems necessary to implement signaling protocols, conversions, and format. Prerequisite: CPMT 1403; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

EECT 2439 - COMMUNICATIONS CIRCUITS

4 Credits (3 hrs. lec., 3 hrs. lab.) A study of communications systems with emphasis on amplitude modulation, frequency modulation, phase modulation, and digital pulse modulation. Discussion of several types of modulators, demodulators, receivers, transmitters, and transceivers. Prerequisite: CETT 1457; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

EECT 2440 - TELECOMMUNICATIONS CENTRAL OFFICE EQUIPMENT

4 Credits (3 hrs. lec., 2 hrs. lab.) An examination of the theory, operation and maintenance of central office telecommunications equipment. Prerequisite: CPMT 1445 or ITSC 1425; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

EECT 2442 - TELECOMMUNICATIONS PRIVATE BRANCH EXCHANGE (PBX)

4 Credits (3 hrs. lec., 3 hrs. lab.) An examination of the theory, operation and maintenance of PBX telecommunications equipment. Prerequisite: Departmental approval; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

ELMT 2433 - INDUSTRIAL ELECTRONICS

4 Credits (3 hrs. lec., 2 hrs. lab.) A study of devices, circuits, and systems primarily used in automated manufacturing and/or process control including computer controls and interfacing between mechanical, electrical, electronic, and computer equipment. Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

ELMT 2437 - ELECTRONIC TROUBLESHOOTING, SERVICE, AND REPAIR

4 Credits (3 hrs. lec., 3 hrs. lab.) In-depth coverage of electronic systems, maintenance, troubleshooting, and repair. Topics include symptom identification, proper repair procedures, repair checkout, and preventative maintenance. Emphasis on safety and proper use of test equipment. This is a capstone course. Prerequisite: CETT 1403 and 1405

ELPT 1311 - BASIC ELECTRICAL THEORY

3 Credits (3 hrs. lec.) An overview of the theory and practice of electrical circuits including calculations as applied to alternating and direct current. Prerequisite: None

ELPT 1315 - ELECTRICAL CALCULATIONS I

3 Credits (3 hrs. lec.) Introduction to mathematical applications utilized to solve problems in the electrical field. Topics include fractions, decimals, percentages,
simple equations, ratio and proportion, unit conversions, and applied geometry. Prerequisite: None

**ELPT 1321 - INTRODUCTION TO ELECTRICAL SAFETY AND TOOLS**

3 Credits (3 hrs. lec.) A comprehensive overview of safety rules and regulations and the selection, inspection, use and maintenance of common tools for electricians. Prerequisite: None

**ELPT 1325 - NATIONAL ELECTRICAL CODE I**

3 Credits (3 hrs. lec.) An introductory study of the National Electric Code (NEC) for those employed in fields requiring knowledge of the Code. Emphasis on wiring design, protection, methods, and materials; equipment for general use; and basic calculations. Prerequisite: None

**ELPT 1341 - MOTOR CONTROL**

3 Credits (2 hrs. lec., 4 hrs. lab.) A study of the principles of operation of single- and three-phase motors and transformers. Topics include transformer banking, power factor correction, and protective devices. Prerequisite: None

**ELPT 1364 - FIELD EXPERIENCE - ELECTRICAL AND POWER TRANSMISSION INSTALLATION/INSTALLER, GENERAL**

3 Credits (21 hrs. ext.) Practical, general workplace training supported by an individualized learning plan developed by the employer, college, and student. Prerequisite: Departmental approval

**ELPT 1419 - FUNDAMENTALS OF ELECTRICITY I**

4 Credits (3 hrs. lec., 2 hrs. lab.) An introduction to basic direct current (DC) theory including electron theory and direct current applications. Prerequisite: None

**ELPT 1429 - RESIDENTIAL WIRING**

4 Credits (3 hrs. lec., 2 hrs. lab.) Wiring methods for single family and multi-family dwellings. Includes load calculation, service entrance sizing, proper grounding techniques, and associated safety procedures. Prerequisite: ELPT 1325

**ELPT 1445 - COMMERCIAL WIRING**

4 Credits (3 hrs. lec., 2 hrs. lab.) Instruction in commercial wiring methods. Prerequisite: None

**ELPT 2315 - ELECTRICAL CALCULATIONS II**

3 Credits (3 hrs. lec.) Further study of mathematical applications utilized to solve problems in the electrical field. Topics include fractions, decimals, ratio and proportion, applied geometry, and utilization of right triangles to calculate electrical values. Prerequisite: None

**ELPT 2325 - NATIONAL ELECTRICAL CODE II**

3 Credits (3 hrs. lec.) In-depth coverage of the National Electrical Code (NEC) for those employed in fields requiring knowledge of the Code. Emphasis on wiring protection and methods, special conditions, and advanced calculations. Prerequisite: ELPT 1325

**ELPT 2364 - FIELD EXPERIENCE - ELECTRICAL AND POWER TRANSMISSION INSTALLATION/INSTALLER, GENERAL**

3 Credits (1 hr. lec., 20 hrs. lab.) Practical, general workplace training supported by an individualized learning plan developed by the employer, college, and student. Prerequisite: ELPT 1364

**ELTN 1380 - COOPERATIVE EDUCATION - ELECTRICIAN**

3 Credits (1 hr. lec., 20 hrs. ext.) Career-related activities encountered in the student's area of specialization offered through an individualized agreement among the college, employer, and student. Under the supervision of the college and the employer, the student combines classroom learning with work experience. Includes a lecture component. Prerequisite: None

**EMSP 1160 - CLINICAL - BASIC EMT**

1 Credit (5 hrs. ext.) A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional. Prerequisite: ENGL 0304 and 0306, OR higher level course (ENGL 1301), OR placement by testing; Math 0306; Corequisite: EMSP 1501

**EMSP 1161 - CLINICAL - EMERGENCY MEDICAL SERVICES PARAMEDIC I**

1 Credit (5 hrs. ext.) A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional. Prerequisite: EMSP 1160 and 1501; ENGL 0304 and 0306, OR higher level course (ENGL 1301),
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OR placement by testing, MATH 0306; Corequisite: EMSP 1338, 1356, and 2348

EMSP 1162 - CLINICAL - EMERGENCY MEDICAL SERVICES - PARAMEDIC II

1 Credit (6 hrs. ext.) A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional. Prerequisite: EMSP 1161; ENGL 0304 and 0306, OR higher level course (ENGL 1301), OR placement by testing, MATH 0306; Corequisite: EMSP 1355 and 2338

EMSP 1338 - INTRODUCTION TO ADVANCED PRACTICE

3 Credits (3 hrs. lec., 1 hr. lab.) An exploration of the foundations necessary for mastery of the advanced topics of clinical practice out of the hospital. Prerequisite: EMSP 1160, 1501, or current EMT-B certification; ENGL 0304 and 0306, OR higher level course (ENGL 1301), OR placement by testing, MATH 0306; Corequisite: EMSP 1161, 1356, and 2348

EMSP 1355 - TRAUMA MANAGEMENT

3 Credits (2 hrs. lec., 2 hrs. lab.) A detailed study of the knowledge and skills in the assessment and management of patients with traumatic injuries. Prerequisite: EMSP 1161; ENGL 0304 and 0306, OR higher level course (ENGL 1301), OR placement by testing, MATH 0306; Corequisite: EMSP 1162 and 2338

EMSP 1356 - PATIENT ASSESSMENT AND AIRWAY MANAGEMENT

3 Credits (2 hrs. lec., 3 hrs. lab.) A detailed study of the knowledge and skills required to perform patient assessment and airway management. Prerequisite: EMSP 1160, 1501, or current EMT-B certification; ENGL 0304, 0306, MATH 0306; Corequisite: EMSP 1161, 1338, and 2348

EMSP 1358 - STREET SENSE

3 Credits (3 hrs. lec.) Instruction and scenario application of non-medical issues preparing a pre-hospital provider to safely and effectively interact with a culturally diverse population. Prerequisite: EMSP 1160 and 1501; ENGL 0304 and 0306, OR higher level course (ENGL 1301), OR placement by testing; Math 0306; Corequisite: None

EMSP 1501 - EMERGENCY MEDICAL TECHNICIAN - BASIC

5 Credits (3 hrs. lec., 6 hrs. lab.) Introduction to the level of Emergency Medical Technician (EMT) - Basic. Includes all the skills necessary to provide emergency medical care at a basic life support level with an ambulance service or other specialized services. Prerequisite: ENGL 0304 and 0306, OR higher level course (ENGL 1301), OR placement by testing, MATH 0306; Corequisite: EMSP 1160

EMSP 2143 - ASSESSMENT BASED MANAGEMENT

1 Credit (3 hrs. lab.) The capstone course of the EMSP program. Designed to provide for teaching and evaluating comprehensive, assessment-based patient care management. Prerequisite: EMSP 2160, 2330, and 2434; ENGL 0304 and 0306, OR higher level course (ENGL 1301), OR placement by testing; MATH 0306; Corequisite: EMSP 2361

EMSP 2160 - CLINICAL - PARAMEDIC III

1 Credit (6 hrs. ext.) A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional. Prerequisite: EMSP 2444; ENGL 0304 and 0306, OR higher level course (ENGL 1301), OR placement by testing; MATH 0306; Corequisite: EMSP 2330 and 2434

EMSP 2300 - METHODS OF TEACHING - EMERGENCY MEDICAL SERVICE

3 Credits (3 hrs. lec.) Instruction in teaching methodology for instructors of emergency medical services. Prerequisite: EMSP 1160 and 1501; ENGL 0304 and 0306, OR higher level course (ENGL 1301), OR placement by testing; Math 0306; Corequisite: None

EMSP 2330 - SPECIAL POPULATIONS

3 Credits (2 hrs. lec., 2 hrs. lab.) A detailed study of the knowledge and skills necessary to reach competence in the assessment and management of ill or injured patients in nontraditional populations. Prerequisite: EMSP 2444;ENGL 0304 and 0306, OR higher level course (ENGL 1301), OR placement by testing; MATH 0306; Corequisite: EMSP 2160 and 2434

EMSP 2338 - EMS OPERATIONS

3 Credits (2 hrs. lec., 2 hrs. lab.) A detailed study of the knowledge and skills necessary to safely manage ENGL
0304 and 0306, OR higher level course (ENGL 1301), OR placement by testing; MATH 0306; Corequisite: EMSP 1162 and 1355

EMSP 2345 - EMS SUPERVISION MANAGEMENT
3 Credits (3 hrs. lec.) Instruction, literary review, group discussion, and case study on topics pertinent to the emergency medical service (EMS) field supervisor or manager. Prerequisite: EMSP 1160 and 1501; ENGL 0304 and 0306, OR higher level course (ENGL 1301), OR placement by testing; Math 0306; Corequisite: None

EMSP 2348 - EMERGENCY PHARMACOLOGY
3 Credits (2 hrs. lec., 3 hrs. lab.) A comprehensive course covering all aspects of the utilization of medications in treating emergency situations. Course is designed to compliment cardiology, special populations, and medical emergency courses. Prerequisite: EMSP 1160, 1501, or current EMT-B certification; ENGL 0304 and 0306, OR higher level course (ENGL 1301), OR placement by testing; Corequisite: EMSP 1161, 1338, and 1356

EMSP 2352 - EMS RESEARCH
3 Credits (3 hrs. lec.) Primary and/or secondary research in current and emerging issues in EMS. Basic research principles, scientific inquiry, and interpretation of professional literature are emphasized. Prerequisite: EMSP 1160 and 1501; ENGL 0304 and 0306, OR higher level course (ENGL 1301), OR placement by testing; Math 0306; Corequisite: None

EMSP 2358 - CRITICAL CARE PARAMEDIC
3 Credits (3 hrs. lec., 1 hr. lab.) Prepares healthcare personnel to function as members of a critical care transport team. Prerequisite: EMSP 2143 and 2361; ENGL 0304 and 0306, OR higher level course (ENGL 1301), OR placement by testing; Math 0306; Corequisite: None

EMSP 2361 - CLINICAL - EMS
3 Credits (15 hrs. ext.) A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional. Prerequisite: EMSP 2160; ENGL 0304, 0306, MATH 0306; Corequisite: EMSP 2143

EMSP 2434 - MEDICAL EMERGENCIES
4 Credits (3 hrs. lec., 3 hrs. lab.) A detailed study of the knowledge and skills necessary to reach competence in the assessment and management of patients with medical emergencies. Prerequisite: EMSP 2444; ENGL 0304 and 0306, OR higher level course (ENGL 1301), OR placement by testing; Math 0306; Corequisite: EMSP 2160 and 2330

EMSP 2444 - CARDIOLOGY
4 Credits (3 hrs. lec., 3 hrs. lab.) A detailed study of the knowledge and skills in the assessment and management of patients with cardiac emergencies. Prerequisite: EMSP 1162; ENGL 0304 and 0306, OR higher level course (ENGL 1301), OR placement by testing; Math 0306; Corequisite: None

ENGL 0110 - READING LAB
1 Credit (2 hrs. lab.) This is an individualized, lab-based course. The course is designed to review the six reading skills covered by the THEA Certification Form. The topics include basic reading and critical reading skills. This course carries institutional credit but will not transfer and will not be used to meet degree requirements. (3201085212) Prerequisite: Placement by testing

ENGL 0113 - WRITING LAB
1 Credit (2 hrs. lab.) This is an individualized, lab-based course. This course is designed to review the THEA writing skills including five editing skills and the process for writing an impromptu essay. This course carries institutional credit but will not transfer and will not be used to meet degree requirements. (3201085312) Prerequisite: Placement by testing

ENGL 0304 - DEVELOPMENTAL READING I
3 Credits (3 hrs. lec., 1 hrs. lab.) A basic reading course designed to improve reading efficiency through word analysis skills, vocabulary, comprehension and rate. Sentence/paragraph writing is required to complement extensive and varied reading activities. This course carries institutional credit but will not transfer and will not be used to meet degree requirements. (3201085212) Prerequisite: Placement by testing

ENGL 0305 - DEVELOPMENTAL READING II
3 Credits (3 hrs. lec., 1 hr. lab.) A developmental reading course continuing the instruction and reinforcement of those skills taught in ENGL 0304. Emphasis is on
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learning higher level reading skills required for college reading assignments. Short paragraph writing is required to complement some reading activities. This course carries institutional credit but will not transfer and will not be used to meet degree requirements. (3201085412) Prerequisite: Placement by exam or instructor recommendation

ENGL 0306 - DEVELOPMENTAL WRITING I

3 Credits (3 hrs. lec., 1 hr. lab.) The first of two developmental writing courses designed to improve the student's basic writing skills. Class activities and lab assignments will be used to produce clarity and precision in sentence and paragraph structure. Specific course topics include an introduction to the writing process and a review of grammar, usage and mechanics. This course carries institutional credit but will not transfer and will not be used to meet degree requirements. (3201085312) Prerequisite: Placement by testing

ENGL 0307 - DEVELOPMENTAL WRITING II

3 Credits (3 hrs. lec., 1 hr. lab.) The second course in the developmental writing course sequence designed for those students with a stronger background in grammar skills who need further help developing paragraphs and short themes. Lab work will be assigned to reinforce class activities. This course carries institutional credit but will not transfer and will not be used to meet degree requirements. (3201085312) Prerequisite: ENGL 0306 or placement by testing

ENGL 0308 - LANGUAGE SKILLS WORKSHOP

3 Credits (3 hrs. lec.) This course refines the use of communication skills necessary for personal, academic, and business communication. It incorporates negotiated student/instructor-generated content and accommodates individual goals in a workshop format. Open lab available. This course carries institutional credit but will not transfer and may not be used to meet degree requirements. Prerequisite: Placement by exam

ENGL 0310 - PRE-COMPOSITION AND RHETORIC

3 Credits (3 hrs. lec.) This is an individualized lecture/lab based course designed to prepare students for Composition and Rhetoric I. Topics include basic reading and critical writing skills. Students will be expected to write compositions similar to those assigned in Composition and Rhetoric I. This course carries institutional credit but will not transfer and may not be used to meet degree requirements. (3201085412) Prerequisite: ENGL 0310 or placement by testing

ENGL 0311 - ESL READING AND VOCABULARY I

3 Credits (3 hrs. lec., 1 hr. lab.) This course develops nonnative English students' reading and vocabulary skills for personal and vocational communication by using vocabulary-controlled materials on a variety of topics. Focus is on reading comprehension, finding the main idea, and using the context to understand vocabulary items. Writing is required to complement some reading activities. Extensive practice in reading and comprehending simple short stories, articles, and dialogs and writing related sentences. Emphasis on high-frequency vocabulary (basic sight words) and phonics. Computer exercises are available to enhance development of reading and vocabulary skills. This course carries institutional credit but will not transfer and may not be used to meet degree requirements. (3201085212) Prerequisite: Placement by exam

ENGL 0312 - ESL READING AND VOCABULARY II

3 Credits (3 hrs. lec., 1 hr. lab.) This course develops nonnative English students' reading and vocabulary skills for personal, academic, and vocational communication by using materials based on diverse themes. Continued practice in reading and comprehending simple short stories, articles, and dialogs and writing related sentences. Focus is on literal comprehension, identifying the main idea in texts of gradually increasing length, and developing a useful and personally relevant vocabulary base. Writing is required to complement some reading activities. Computer exercises are available to enhance development of reading and vocabulary skills. This course carries institutional credit but will not transfer and may not be used to meet degree requirements. (3201085212) Prerequisite: ENGL 0311 or placement by exam

ENGL 0313 - ESL READING AND VOCABULARY III

3 Credits (3 hrs. lec., 1 hr. lab.) This course provides dynamic communicative practice for students whose primary language is other than English, exposing them to the uses of language in a variety of relevant contexts. Emphasis is on vocabulary expansion, and comprehension of short paragraphs, the relationship of meaning to grammatical form, and dictionary skills. Writing is required to complement extensive and varied reading activities. Open lab available. This course carries institutional credit but will not transfer and may not be used to meet degree requirements. (3201085212) Prerequisite: ENGL 0312 or placement by exam
ENGL 0314 - ESL READING AND VOCABULARY IV

3 Credits (3 hrs. lec., 1 hr. lab.) This course continues to provide dynamic communicative practice, exposing students to the uses of language in a variety of relevant contexts. Focus is on word analysis, vocabulary, literal comprehension, speed, and context clues; interpretation of factual material and inferences; identification of paraphrases of sentences; and development of practical library skills. Writing is required to complement extensive and varied reading activities. Open lab available. This course carries institutional credit but will not transfer and may not be used to meet degree requirements. (3201085712) Prerequisite: ENGL 0313 or placement by exam

ENGL 0315 - ESL READING AND VOCABULARY V

3 Credits (3 hrs. lec., 1 hr. lab.) Focus on improving comprehension skills and reading speed. Introduction to summarizing main ideas, identifying word forms, using a dictionary to choose correct meaning, and inferring ideas in a passage. Writing is required to complement extensive and varied reading activities. Open lab available. This course carries institutional credit but will not transfer and may not be used to meet degree requirements. (3201085712) Prerequisite: ENGL 0314 or placement by exam

ENGL 0316 - ESL READING AND VOCABULARY VI

3 Credits (3 hrs. lec., 1 hr. lab.) This course refines students' academic reading and vocabulary skills and provides instruction in order to fulfill the THEA requirement for reading. It includes work on reading speed development, pre-reading techniques, fact finding, word form, vocabulary in context, and extracting literal and inferential information from text as well as from charts, graphs, illustrations, and photographs. Writing is required to complement some reading activities. Open lab available. This course carries institutional credit but will not transfer and may not be used to meet degree requirements. (3201085712) Prerequisite: ENGL 0315 or placement by exam

ENGL 0321 - ESL GRAMMAR AND WRITING I

3 Credits (2 hrs. lec., 3 hrs. lab.) This course provides learners with coping skills and cultural information necessary for written and oral communication. It offers learners the opportunity to develop, practice, and apply the basic structures of English and to perform simple speaking and writing tasks. Students who enroll in this course should have basic literacy skills in their native language and be familiar with Roman script. Open lab available. This course carries institutional credit but will not transfer and may not be used to meet degree requirements. (3201085712) Prerequisite: ENGL 0320 or placement by exam

ENGL 0322 - ESL GRAMMAR AND WRITING II

3 Credits (2 hrs. lec., 3 hrs. lab.) This course helps increase proficiency in speaking and writing skills necessary for basic personal, academic, and business communication. Students gain mastery in the use of the basic structures of the language and can perform practical oral and written tasks. Open lab available. This course carries institutional credit but will not transfer and may not be used to meet degree requirements. (3201085712) Prerequisite: ENGL 0321 or placement by exam

ENGL 0323 - ESL GRAMMAR AND WRITING III

3 Credits (2 hrs. lec., 3 hrs. lab.) In this course students gain mastery in the use of the major structures of the language as well as the basic mechanics of writing necessary for personal, academic, and business communication. Continued emphasis on vocabulary expansion, the relationship of meaning to grammatical form, and dictionary skills. This course carries institutional credit but will not transfer and may not be used to meet degree requirements. Open lab available. (3201085712) Prerequisite: ENGL 0322 or placement by exam

ENGL 0324 - ESL GRAMMAR AND WRITING IV

3 Credits (2 hrs. lec., 3 hrs. lab.) In this course students begin using sophisticated grammar structures and express themselves with increasing accuracy and effectiveness in different forms of writing such as summaries, narratives, and descriptions. Class activities and assignments are used to produce clarity and precision in sentence and paragraph structure. Focus on identification of paraphrases of sentences and development of practical library skills as well as recognition of idioms, analogies, antonyms and synonyms, and context clues. This course carries institutional credit but will not transfer and may not be used to meet degree requirements. Open lab available. (3201085712) Prerequisite: ENGL 0323 or placement by exam

ENGL 0325 - ESL GRAMMAR AND WRITING V

3 Credits (2 hrs. lec., 3 hrs. lab.) This course advances the use of more sophisticated grammar and writing skills for personal, academic, and business communication with a focus on increased clarity
and accuracy. It uses a process-writing format that includes prewriting, drafting, revising, and proofreading. Open lab available. This course carries institutional credit but will not transfer and may not be used to meet degree requirements. (3201085412) Prerequisite: ENGL 0324 or placement by exam

**ENGL 0326 - ESL PRE-COMPOSITION AND RHETORIC**

3 Credits (2 hrs. lec., 3 hrs. lab.) This course helps students use drafting and process writing techniques to develop an approach to writing academic, industrial and business-related essays. Grammar workshops will address specific student needs. Open lab available. This course carries institutional credit but will not transfer and may not be used to meet degree requirements. Students who pass the exit exam may enroll in Freshman English. (3201085412) Prerequisite: ENGL 0325 or placement by exam

**ENGL 0331 - ESL LISTENING AND SPEAKING I**

3 Credits (2 hrs. lec., 3 hrs. lab.) This course introduces the key vocabulary and structures necessary for adequate basic proficiency and exposes students to American customs and values. Students refine oral production and listening skills and increase control of the English sound system to minimize miscommunication or misperception due to foreign accent. Students who enroll in this course should have basic literacy skills in their native language and be familiar with Roman script. Open lab available. This course carries institutional credit but will not transfer and may not be used to meet degree requirements. (3201085512) Prerequisite: Placement by exam

**ENGL 0332 - ESL LISTENING AND SPEAKING II**

3 Credits (2 hrs. lec., 3 hrs. lab.) This course offers learners the opportunity to develop, practice, and apply basic English language skills. Students communicate with a growing degree of fluency, using newly acquired vocabulary with some degree of accuracy, and master basic language functions. Open lab available. This course carries institutional credit but will not transfer and may not be used to meet degree requirements. (3201085512) Prerequisite: ENGL 0331 or placement by exam

**ENGL 0333 - ESL LISTENING AND SPEAKING III**

3 Credits (2 hrs. lec., 3 hrs. lab.) This course provides dynamic communicative practice for students whose primary language is other than English, exposing them to the uses of language in a variety of relevant contexts. Students increase their degree of fluency, accuracy, and comprehension in listening and speaking skills necessary for personal, academic, and business communication. Open lab available. This course carries institutional credit but will not transfer and may not be used to meet degree requirements. (3201085512) Prerequisite: ENGL 0332 or placement by exam

**ENGL 0334 - ESL LISTENING AND SPEAKING IV**

3 Credits (2 hrs. lec., 3 hrs. lab.) This course sharpens students listening and speaking skills by using authentic materials based on a number of different, universal topics. In addition, students will practice oral and written summaries, discussion strategies, and note taking. Daily activities include listening to lectures and guest speakers, discussing short readings, giving oral presentations. Open lab available. This course carries institutional credit but will not transfer and may not be used to meet degree requirements. (3201085512) Prerequisite: ENGL 0333 or placement by exam

**ENGL 0335 - ESL LISTENING AND SPEAKING V**

3 Credits (2 hrs. lec., 3 hrs. lab.) This course advances the use of more sophisticated listening and speaking skills for personal, academic, and business communication with a focus on clarity and accuracy. Emphasis on recognition and comprehension of idioms, analogies, antonyms and synonyms, and context clues. Activities include oral presentations, giving and receiving feedback, note taking, and problem solving. Also, practice in identification of sentence paraphrasing and development of practical library skills. Open lab available. This course carries institutional credit but will not transfer and may not be used to meet degree requirements. (3201085512) Prerequisite: ENGL 0334 or placement by exam

**ENGL 1111 - CREATIVE WRITING WORKSHOP**

1 Credit (1 hr. lec.) This course offers practical experience working as staff on a literary publication practicing techniques such as creating, selecting, and/or formatting imaginative writings and illustrations for publication. (2305015112) Prerequisite: None

**ENGL 1301 - COMPOSITION AND RHETORIC I**

3 Credits (3 hrs. lec.) A multi-paragraph composition course, including language study and the mechanics of writing, with examples from selected readings.
Students may be required to achieve a departmentally approved score on a proficiency test before credit for the course may be awarded. (2304015112) Prerequisite: Placement by testing or completion of ENGL 0307 or 0326 and ENGL 0305 or 0316

ENGL 1302 - COMPOSITION AND RHETORIC II
3 Credits (3 hrs. lec.) A continuation of ENGL 1301 with an emphasis on critical papers, culminating in a term paper or papers. Readings in prose, poetry, and drama. (2304015112) Prerequisite: ENGL 1301

ENGL 2307 - CREATIVE WRITING I
3 Credits (3 hrs. lec.) A brief study of creative genres such as poetry, essay, and short fiction. Practice in original composition. Designed as a humanities elective course for students interested in imaginative writing. Both ENGL 2307 and ENGL 2308 may apply toward graduation. (2305015112) Prerequisite: Six hours of English or departmental approval

ENGL 2308 - CREATIVE WRITING II
3 Credits (3 hrs. lec.) Practical experience in the techniques of imaginative writing and its publication. May include fiction, creative non-fiction, poetry, drama, and/or essay. Both ENGL 2307 and ENGL 2308 may apply toward graduation. (2305015112) Prerequisite: 6 hrs. of ENGL credit

ENGL 2311 - TECHNICAL COMMUNICATIONS
3 Credits (3 hrs. lec.) The writing of technical papers, reports, proposals, progress reports and descriptions. The course also briefly covers oral reporting. (2311015112) Prerequisite: ENGL 1301 and 2nd year standing, or departmental approval

ENGL 2322 - SURVEY OF BRITISH LITERATURE I
3 Credits (3 hrs. lec.) A survey of the literature of Great Britain from Anglo-Saxon times to mid-eighteenth century. (2308015112) Prerequisite: ENGL 1301 and 1302

ENGL 2323 - SURVEY OF BRITISH LITERATURE II
3 Credits (3 hrs. lec.) A survey of literature of Great Britain from mid-eighteenth century to the present. (2308015112) Prerequisite: ENGL 1301 and 1302

ENGL 2327 - SURVEY OF AMERICAN LITERATURE
3 Credits (3 hrs. lec.) A survey of major American authors from the colonial period to the Civil War. Figures covered include Edwards, Franklin, Irving, Cooper, Poe, Hawthorne, Melville, Emerson, Thoreau and Whitman. (2307015112) Prerequisite: ENGL 1301 and 1302

ENGL 2328 - SURVEY OF AMERICAN LITERATURE II
3 Credits (3 hrs. lec.) A survey of major American authors from the Civil War to the present. Movements covered include realism, the jazz age, and the moderns. Representative figures are Twain, Howells, James, Hemingway, Fitzgerald, Faulkner and Eliot. (2307015112) Prerequisite: ENGL 1301 and 1302

ENGL 2332 - SURVEY OF WORLD LITERATURE I
3 Credits (3 hrs. lec.) A survey of world literature from ancient times to the mid-seventeenth century. (2303015212) Prerequisite: ENGL 1301 and 1302

ENGL 2333 - SURVEY OF WORLD LITERATURE II
3 Credits (3 hrs. lec.) A survey of world literature from the mid-seventeenth century to the present. (2303015212) Prerequisite: ENGL 1301 and 1302

ENGL 2341 - FORMS OF LITERATURE
3 Credits (3 hrs. lec.) The study of one or more literary genres including, but not limited to, poetry, fiction, drama, and film. Other forms might include mythic and religious writing, autobiographies and memoirs, polemics. Readings vary. Instructors are free to choose their own emphasis. Only 6 credit hours can be taken from ENGL 2341, 2342, and 2343. (2303015112) Prerequisite: ENGL 1301 and 1302

ENGL 2342 - FORMS OF LITERATURE I
3 Credits (3 hrs. lec.) One semester of a two-semester course on literary forms. This course examines a genre, or a combination of genres, in greater depth than does the one semester course, ENGL 2341. Instructors are free to choose their own emphasis. The literary genre or genres taught in this course emphasize the multicultural competencies. (2303015112) Prerequisite: ENGL 1301 and 1302

ENGL 2343 - FORMS OF LITERATURE II
3 Credits (3 hrs. lec.) One semester of a two-semester course on literary forms. This course may expand treatment of a genre or genres studied in ENGL 2342
DESCRIPTION OF COURSES

and/or may include a genre or genres not studied in ENGL 2342. Instructors are free to choose their own emphasis. The literary genre or genres taught in this course emphasize the multicultural competencies. (2303015112) Prerequisite: ENGL 1301 and 1302

ENGL 2351 - MEXICAN-AMERICAN LITERATURE
3 Credits (3 hrs. lec.) A survey of Mexican American literature from its origins to the present covering the major literary genres - the essay, epic poetry, lyric poetry, the short story, novel, drama, and folk literature. (0502035525) Prerequisite: ENGL 1301 and 1302

ENGL 2389 - ACADEMIC COOPERATIVE IN COMPOSITION
3 Credits (1 hr. lec., 4 hrs. ext.) Training program and internship for peer writing tutors who work with student writers in the writing center in the college learning center. (2401035212) Prerequisite: ENGL 1301

ENGR 1304 - FOUNDATIONS OF ENGINEERING I
3 Credits (2 hrs. lec., 4 hrs. lab.) Introduction to the engineering profession, ethics and disciplines; development of skills in teamwork; problem solving, logic processing, design and drawing; emphasis on computer applications and CAD tools. (1513015102) Prerequisite: MATH 2412; Corequisite: ENGL 1301

ENGR 1305 - FOUNDATIONS OF ENGINEERING II
3 Credits (2 hrs. lec., 4 hrs. lab.) Development of skills in problem solving, design, analysis, estimation, and teamwork; utilization of computer tools for documentation and presentation; introduction to logic processing and computer programming; introduction to accounting and conservation principles in engineering sciences. (1513015102) Prerequisite: ENGR 1304 and MATH 2413

ENGR 2301 - ENGINEERING MECHANICS I
3 Credits (3 hrs. lec.) Statics of particles and rigid bodies, free body diagrams, centroids, center of gravity and distributed loads, structural analysis of trusses and frames, internal forces and moments in beams and cables, friction, moments of inertia. (1411015210) Prerequisite: PHYS 2425 and MATH 2414

ENGR 2302 - ENGINEERING MECHANICS II
3 Credits (3 hrs. lec.) Kinematics and dynamics of particles, Newton’s Second Law, energy and momentum methods, kinematics and dynamics of rigid bodies, energy methods, vibrations. (1411015310) Prerequisite: ENGR 2301 and MATH 2415; Corequisite: (for U of H transfer students) MATH 2320

ENGR 2304 - NUMERICAL METHODS AND PROGRAMMING
3 Credits (3 hrs. lec., 2 hrs. lab.) Applications in numerical calculus and linear algebra using C/C++ programming language. Algorithms, efficiency and style are emphasized. This course is designed for students in engineering, math, computer science and the natural sciences. (1102015207) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing Corequisite: MATH 2413

ENTC 1343 - STATICS
3 Credits (2 hrs. lec., 4 hrs. lab.) A study of the composition and resolution of forces and the equilibrium of forces acting on structures. Includes the concepts of friction, moments, couples, centroids, and moment of inertia. Prerequisite: MATH 1316

ENTC 1423 - STRENGTH OF MATERIALS
4 Credits (3 hrs. lec., 3 hrs. lab.) Study of the relationship between externally applied forces and internally induced stresses and the resulting deformations in structural members. Prerequisite: ENTC 1343

ENTC 2380 - COOPERATIVE EDUCATION - ENGINEERING TECHNOLOGY/TECHNICIAN, GEN.
3 Credits (1 hr. lec., 20 ext. hrs.) Career-related activities encountered in the student’s area of specialization offered through an individualized agreement among the college, employer, and student. Under the supervision of the college and the employer, the student combines classroom learning with work experience. Includes a lecture component. Prerequisite: Completion of all Engineering design graphics technology associate degree technical course requirements and department approval; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

ENVR 1401 - ENVIRONMENTAL SCIENCE I
4 Credits (3 hrs. lec., 3 hrs. lab.) Interdisciplinary study of both natural (biology, chemistry, geology) and social (economics, politics, ethics) sciences as they apply to the environment. Focus is on the role of science in addressing global environmental con-
cerns. Concepts include ethics, policy, matter, energy, species biodiversity, ecology, human populations, food and agriculture. Practical laboratory experience emphasizes the application of fundamental principles of biology and chemistry as well as critical thinking and analysis. Lab required. (0301035201)Prerequisite: College reading level as determined by SAT, ACT, TASP, or successfully passing ENGL 0305 with a “C” or better. ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing, MATH 0308

ENVR 1402 - ENVIRONMENTAL SCIENCE II

4 Credits (3 hrs. lec., 3 hrs. lab.) Continued interdisciplinary study of both natural (biology, chemistry, geology) and social (economics, politics, ethics) sciences as they apply to the environment. Focus on energy issues, global warming, ozone loss, land use, conservation and management of resources, deforestation, biodiversity, waste, and sustainable practices. Lab required. (0301035201)Prerequisite: College reading level as determined by SAT, ACT, TASP, or successfully passing ENGL 0305 with a “C” or better. ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing, MATH 0308

FIRS 1301 - FIREFIGHTER CERTIFICATION I

3 Credits (2 hrs. lec., 3 hrs. lab.) An introduction to firefighter safety and development. Topics include Texas Commission on Fire Protection Rules and Regulations, firefighter safety, fire science, personal protective equipment, self contained breathing apparatus, and fire reports and records. Prerequisite: ENGL 0305, 0313 or ENGL 0316; ENGL 0307 or ENGL 0326; OR higher level course (ENGL 1301), or placement by testing; admission to the program

FIRS 1313 - FIREFIGHTER CERTIFICATION III

3 Credits (2 hrs. lec., 3 hrs. lab.) Fire streams, pump operations, and public relations as they relate to fundamental development of basic firefighter skills. Prerequisite: ENGL 0305, 0313 or ENGL 0316; ENGL 0307 or ENGL 0326; OR higher level course (ENGL 1301), or placement by testing

FIRS 1319 - FIREFIGHTER CERTIFICATION IV

3 Credits (2 hrs. lec., 3 hrs. lab.) A study of equipment, tactics, and procedures used in forcible entry, ventilation, salvage, and overhaul. Preparation for certification as a basic firefighter. Prerequisite: ENGL 0305, 0313 or ENGL 0316; ENGL 0307 or ENGL 0326; OR higher level course (ENGL 1301), or placement by testing

FIRS 1329 - FIREFIGHTER CERTIFICATION VI

3 Credits (2 hrs. lec., 3 hrs. lab.) The study of fire inspection techniques and practices, public transportation, fire cause determination. Topics include fire protection systems, wildland fire, and pre-incident planning. Preparation for certification as a basic firefighter. Prerequisite: ENGL 0305, 0313 or ENGL 0316; ENGL 0307 or ENGL 0326; OR higher level course (ENGL 1301), or placement by testing

FIRS 1407 - FIREFIGHTER CERTIFICATION II

4 Credits (3 hrs. lec., 3 hrs. lab.) The study of basic principles and skill development in handling fire service hose and ladders. Topics include the distribution system of water supply, basic building construction, and emergency service communication, procedures, and equipment. Prerequisite: ENGL 0305, 0313 or ENGL 0316; ENGL 0307 or ENGL 0326; OR higher level course (ENGL 1301), or placement by testing

FIRS 1423 - FIREFIGHTER CERTIFICATION V

3 Credits (3 hrs. lec., 3 hrs. lab.) The study of ropes and knots, rescue procedures and techniques, and hazardous materials. Preparation for certification as a basic firefighter. Prerequisite: ENGL 0305, 0313 or ENGL 0316; ENGL 0307 or ENGL 0326; OR higher level course (ENGL 1301), or placement by testing

FIRS 1433 - FIREFIGHTER CERTIFICATION VII

4 Credits (3 hrs. lec., 3 hrs. lab.) Simulated emergency operations and hands-on live fire training exercises, incident management procedures, and combined operations using proper extinguishing methods. Emphasis on safety. Prerequisite: ENGL 0305, 0313 or ENGL 0316; ENGL 0307 or ENGL 0326; OR higher level course (ENGL 1301), or placement by testing

FIRT 1171 - FIREFIGHTER AGILITY AND FITNESS PREPARATION

1 Credit (1 hr. lec.) This course includes the study of physical agility testing methods and rigorously trains individuals in skills and techniques needed in typical entry level testing. Prerequisite: ENGL 0305, 0313 or ENGL 0316; ENGL 0307 or ENGL 0326; OR higher level course (ENGL 1301), or placement by testing; Corequisite: FIRS 1301, FIRS 1407, FIRS 1313 and FIRS 1319
DESCRIPTION OF COURSES

FIRT 1303 - FIRE ARSON INVESTIGATION I
3 Credits (3 hrs. lec.) In-depth study of basic fire and arson investigation practices. Emphasis on fire behavior principles related to fire cause and origin determination. Prerequisite: ENGL 0305, 0313 or ENGL 0316; ENGL 0307 or ENGL 0326; OR higher level course (ENGL 1301), or placement by testing.

FIRT 1305 - PUBLIC EDUCATION PROGRAMS
3 Credits (3 hrs. lec.) Preparation of firefighters and fire officers to develop public fire safety awareness. Emphasis on implementation of fire and public safety programs in an effort to reduce the loss of life. Prerequisite: ENGL 0305, 0313 or ENGL 0316; ENGL 0307 or ENGL 0326; OR higher level course (ENGL 1301), or placement by testing.

FIRT 1307 - FIRE PREVENTION CODES
3 Credits (3 hrs. lec.) Study of local building and fire prevention codes. Emphasis on fire prevention inspections, practices, and procedures. Prerequisite: ENGL 0305, 0313 or ENGL 0316; ENGL 0307 or ENGL 0326; OR higher level course (ENGL 1301), or placement by testing.

FIRT 1315 - HAZARDOUS MATERIALS I
3 Credits (2 hrs. lec., 3 hrs. lab.) Study of the chemical characteristics and behavior of various materials. Topics include storage, transportation, handling hazardous emergency situations, and the most effective methods of hazard mitigation. Prerequisite: ENGL 0305, 0313 or ENGL 0316; ENGL 0307 or ENGL 0326; OR higher level course (ENGL 1301), or placement by testing.

FIRT 1319 - FIRE FIGHTER HEALTH & SAFETY
3 Credits (2 hrs. lec., 3 hrs. lab.) Study of firefighter occupational safety and health in emergency and non-emergency situations. Prerequisite: ENGL 0305, 0313 or ENGL 0316; ENGL 0307 or ENGL 0326; or placement by testing.

FIRT 1327 - BUILDING CONSTRUCTION IN THE FIRE SERVICE
3 Credits (3 hrs. lec.) Components of building construction that relate to fire and life safety. Focuses on firefighter safety. Includes relationship of elements of construction and design of structures to inspecting buildings, preplanning fire operations, and operating at emergencies. Prerequisite: ENGL 0305, 0313 or ENGL 0316; ENGL 0307 or ENGL 0326; OR higher level course (ENGL 1301), or placement by testing.

FIRT 1331 - FIREFIGHTING STRATEGIES AND TACTICS I
3 Credits (3 hrs. lec.) Analysis of the nature of fire problems and selection of initial strategies and tactics including an in-depth study of efficient and effective use of manpower and equipment to mitigate the emergency. Prerequisite: ENGL 0305, 0313 or ENGL 0316; ENGL 0307 or ENGL 0326; OR higher level course (ENGL 1301), or placement by testing.

FIRT 1338 - FIRE PROTECTION SYSTEMS
3 Credits (3 hrs. lec.) Design and operation of fire detection and alarm systems, heat and smoke control systems, special protection and sprinkler systems, water supply for fire protection, and portable fire extinguishers. Prerequisite: ENGL 0305, 0313 or ENGL 0316; ENGL 0307 or ENGL 0326; OR higher level course (ENGL 1301), or placement by testing.

FIRT 1345 - HAZARDOUS MATERIALS II
3 Credits (3 hrs. lec.) In-depth study of mitigation practices and techniques to effectively control hazardous material spills and leaks. Prerequisite: FIRT 1315.

FIRT 1355 - METHODS OF TEACHING
3 Credits (3 hrs. lec.) Preparation of public safety personnel to effectively teach technical skills, techniques, and information. Prerequisite: ENGL 0305, 0313 or ENGL 0316; ENGL 0307 or ENGL 0326; OR higher level course (ENGL 1301), or placement by testing.

FIRT 2171 - FIREFIGHTER AGILITY AND FITNESS PREPARATION II
1 Credit (3 hrs. lab.) Firefighter Agility and Fitness Preparation II is a continuation of Firefighter Agility and Fitness Preparation I and includes circuit training, sports conditioning, body toning, interval training, and the study of physical agility testing methods. It rigorously trains individuals in skills and techniques needed in typical entry level testing. Prerequisite: FIRT 1171; ENGL 0305, 0313 or ENGL 0316; ENGL 0307 or ENGL 0326; OR higher level course (ENGL 1301), or placement by testing.

FIRT 2333 - FIRE ARSON INVESTIGATION II
3 Credits (3 hrs. lec.) Continuation of Fire and Arson Investigation I. Topics include reports, court room
demeanor, and expert witnesses. Prerequisite: ENGL 0305, 0313 or ENGL 0316; ENGL 0307 or ENGL 0326; OR higher level course (ENGL 1301), or placement by testing

**FIRT 2380 - COOPERATIVE EDUCATION**

3 Credits (1 hr. lec., 20 hrs. ext.) Career-related activities encountered in the student’s area of specialization offered through an individualized agreement among the college, employer, and student. Under the supervision of the college and the employer, the student combines classroom learning with work experience. Includes a lecture component. Prerequisite: ENGL 0305, 0313 or ENGL 0316; ENGL 0307 or ENGL 0326; OR higher level course (ENGL 1301), or placement by testing

**FLMC 1304 - LIGHTING FOR FILM OR VIDEO**

3 Credits (2 hrs. lec., 4 hrs. lab.) Lighting techniques for 16mm film and video productions. Prerequisites: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

**FLMC 1331 - COMPUTERS IN VIDEO PRODUCTION I**

3 Credits (2 hrs. lec., 4 hrs. lab.) Applications of computers in digital film production. Design of computer graphic workstations and development of a rationale for selecting software, hardware, and peripherals. Prerequisite: ARTC 1302 or departmental approval; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

**FLMC 2331 - COMPUTERS IN VIDEO PRODUCTION II**

3 Credits (2 hrs. lec., 4 hrs. lab.) Applications of computers to production. Vector and raster graphics; rendering techniques; the design and production of three-dimensional materials; and the selection of hardware, software, and peripherals for the configuration of a studio. Prerequisite: FLMC 1331; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

**FREN 1310 - FRENCH CONVERSATION II**

3 Credits (3 hrs. lec.) This is a continuation of Conversational French I. It includes extensive comprehension, oral practice, use of multimedia materials. It is intended to develop communications skills for the student to apply these skills to everyday life and work situations. It is an alternate track for the student who needs immediate communicative experience in French. (1609015413) Prerequisite: FREN 1300; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

**FREN 1411 - BEGINNING FRENCH I**

4 Credits (3 hrs. lec., 2 hrs. lab.) Beginner’s pronunciation, oral practice and dictation, conversation, use of recordings for ear training, basic principles of grammar, simple exercises in composition, easy reading which includes cultural material. (1609015113) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

**FREN 1412 - BEGINNING FRENCH II**

4 Credits (3 hrs. lec., 2 hrs. lab.) A continuation of FREN 1411 with increased emphasis on comprehension, speaking, reading and writing. Intensive drills to increase vocabulary and knowledge of structure. (1609015113) Prerequisite: FREN 1411 or 2 years of high school language in the preceding two years; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

**FREN 2311 - INTERMEDIATE FRENCH I**

3 Credits (3 hrs. lec.) French readings, grammar, and composition based partly on the formal text and partly on selected readings. Stress will be placed on oral work. (1609015213) Prerequisite: FREN 1412; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing
DESCRIPTION OF COURSES

FREN 2312 - INTERMEDIATE FRENCH II
3 Credits (3 hrs. lec.) Continuation of FREN 2311. (1609015213) Prerequisite: FREN 2311; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

GAME 1303 - INTRO TO GAME DESIGN AND DEVELOPMENT
3 Credits (2 hrs. lec., 3 hrs. lab) Introduction to electronic game development and game development careers. Includes examination of history and philosophy of games, the game production process, employee factors for success in the field, and current issues and practices in the game development industry.

GAME 1304 - LEVEL DESIGN
3 Credits (2 hrs. lec., 4 hrs. lab) Introduction to the tools and concepts used to create levels for games and simulations. Incorporates level design, architecture theory, concepts of critical path and flow, balancing, play testing, and storytelling. Includes utilization of toolsets from industry titles. Prerequisite: Department approval

GAME 2332 - PROJECT DEVELOPMENT I
3 Credits (2 hrs. lec., 4 hrs. lab) Skill development in an original modification based on a current game engine. Includes management of version control; development of project timeliness; integration of sound, models, and animation; production of demos; and creation of original levels, characters, and content for a real-time multiplayer game. Applies skills learned in previous classes in a simulated real-world design team experience. Prerequisite: Department approval

GAME 2334 - PROJECT DEVELOPMENT II
3 Credits (2 hrs. lec., 4 hrs. lab) Continuation of an original modification based on a current game engine with an emphasis on new content and radical changes in game play over the base game experience. Includes creation of original levels, characters, and content for a real-time multiplayer game applying skills learned in previous classes. Prerequisite: Department approval

GAME 2336 - LIGHTING, SHADING AND TEXTURE
3 Credits (2 hrs. lec., 4 hrs. lab) Lighting, shading, and texture painting for 3D models using digital painting techniques. Emphasizes lighting, shading, and texture creation of limited resolution to increase system performance for digital games and simulation training models. Prerequisite: Department approval

GAME 2386 - INTERNSHIP
3 Credits (15 hrs. ext.) A work-based learning experience that enables the student to apply specialized occupational theory, skills and concepts. A learning plan is developed by the college and the employer. Prerequisite: Department approval

GEOG 1300 - PRINCIPLES OF GEOGRAPHY
3 Credits (3 hrs. lec.) A survey of the processes of both physical and human geography. This course discusses what geography is, what geographers do, how geography facilitates thinking about, and observing the Earth and the Human Landscape in spatial terms. The course introduces: cartographic interpretation; identification of landforms; climatic types; the interaction of humans with the physical world; the spatial distribution of cultural activity. (4507015125) Prerequisite: College level reading; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

GEOG 1301 - PHYSICAL GEOGRAPHY
3 Credits (3 hrs. lec.) A survey of the primary elements and the processes at work in the physical environment — weather, climate, landforms and ecosystems and their interrelationships as they influence human activities on the Earth’s Surface. (4507015125) Prerequisite: None

GEOG 1303 - WORLD GEOGRAPHY
3 Credits (3 hrs. lec.) A survey of human activity within the context of its regional settings. The course considers ideas such as economic development and the cultural, physical, and political dynamics at work within each region. The course guides the student into thinking about human phenomenon from a spatial perspective. It emphasizes the understanding of place, region, and spatial connection. For students interested in world affairs, culture, international relations, and understanding the characteristics of places around the world. (4507015325) Prerequisite: College level reading; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

GEOG 2312 - ECONOMIC GEOGRAPHY
3 Credits (3 hrs. lec.) A survey of patterns of economic development, including the distribution of population and resources, and the influence these factors have on agriculture, manufacturing and service industries. Emphasis is placed on spatial variations in types of
economic organization and patterns of land use and resource utilization. (4507015225) Prerequisite: None

**GEOL 1403 - PHYSICAL GEOLOGY**

4 Credits (3 hrs. lec., 3 hrs. lab.) This course explores the theory of geologic processes including a study of physical forces that shape the earth and all its landforms. Special emphasis is given to the origins of minerals and rocks, volcanoes, earthquakes, structures, plate tectonics and other geologic processes. Lab exercises include mineral identification and differentiation of the major rock types, use of topographic maps and aerial photographs and interpretation of geologic data. Optional field trips help students explore and discover links between classroom discussions and life experiences. Participation in field trips is highly recommended. (4006015103) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing; Corequisite: Math 0306

**GEOL 1404 - HISTORICAL GEOLOGY**

4 Credits (3 hrs. lec., 3 hrs. lab.) A geological history of the Earth stressing fossils, stratigraphy and plate tectonics. Emphasis is placed on environments and the succession of geologic events since the origin of the Earth. Labs review rocks and maps, with exercises in fossil identification, stratigraphic correlation and cross cutting relationships. Participation in field trips is highly recommended. (4006015103) Prerequisite: GEOL 1403 OR GEOL 1405 OR department approval; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing; Corequisite: Math 0306

**GEOL 1405 - ENVIRONMENTAL GEOLOGY**

4 Credits (3 hrs. lec., 3 hrs. lab.) An analysis survey of geologic processes, their influence on people and the influence of human activities on the environment. Topics include natural resources, geologic hazards, waste disposal, surface and groundwater pollution, air pollution, land-use planning, environmental law, and the determination of risk assessments based on remote sensing techniques, field observations and their economic impact. Lab exercises include groundwater flow, environmental pollution, geologic hazards, geologic resources and land use planning. Participation in field trips is highly recommended. (0301025301) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing; Corequisite: Math 0306

**GEOL 1442 - CARTOGRAPHY AND GIS**

4 Credits (3 hrs. lec., 3 hrs. lab.) Introduction to the principles of cartography, geography and the use of maps in geologic applications. Emphasis is placed on the identification and comparison of the different map projections, their uses, and limitations. GIS (Geographical Information Systems) will focus on the development and use of GPS (global positioning systems), geologic data collection, analysis and display of information from digital data. Lab work will develop skills in the use and interpretation of maps and PC based computer GIS systems to collect and project data sets in a variety of applications. Students will complete projects specifically in geological and petroleum exploration. This course is similar to CRTG 1411(4006019131) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing; Corequisite: Math 0306

**GEOL 2307 - GEOLOGY OF TEXAS**

3 Credits (3 hrs. lec.) The topography, physiography, structure, geologic history and mineral deposits of Texas. Plate Tectonics regional correlations and local phenomena are emphasized. Participation in field trips is highly recommended. (4006015503) Prerequisite: GEOL 1403 AND 1404 OR department approval; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing; Corequisite: MATH 0306

**GERM 1411 - BEGINNING GERMAN I**

4 Credits (3 hrs. lec., 2 hrs. lab.) Beginner’s pronunciation, oral practice and dictation. Conversation, use of recordings for ear training, basic principles of grammar, simple exercises in composition, easy reading which includes cultural material. (1605015113) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

**GERM 1412 - BEGINNING GERMAN II**

4 Credits (3 hrs. lec., 2 hrs. lab.) A continuation of GERM 1411 with increased emphasis on comprehension, speaking, reading, and writing. Intensive drills to increase vocabulary and knowledge of structure. (1605015113) Prerequisite: GERM 1411 or 2 years of high school language in the preceding two years; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing
DESCRIPTION OF COURSES

GERM 2311 - INTERMEDIATE GERMAN I
3 Credits (3 hrs. lec.) Introduction to German readings of average difficulty, principally through short stories and selections from longer works. Review of grammar composition, practice in conversation. Some scientific selections included in class readings, collateral readings and reports. (1605015213) Prerequisite: GERM 1412; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

GERM 2312 - INTERMEDIATE GERMAN II
3 Credits (3 hrs. lec.) Continuation of GERM 2311. (1605015213) Prerequisite: GERM 2311; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

GERS 1301 - GERONTOLOGY
3 Credits (3 hrs. lec.) Overview of the social, psychological, and biological changes that accompany aging and an overview of the implications of these changes for the individual, as well as for the larger society. Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

GOVT 2301 - AMERICAN GOVERNMENT: NATIONAL, STATE AND LOCAL I
3 Credits (3 hrs. lec.) A survey of national, state, and local government, including such topics as the U.S. and Texas Constitutions; democratic theory; federalism; political culture, political socialization, and public opinion; political participation and electoral behavior; political parties and interest groups; press; and local government. These phenomena are examined at the national, state, and local levels with an emphasis placed on linkages with the formulation of public policy. THIS COURSE SATISFIES STATE REQUIREMENTS FOR TEACHER CERTIFICATION IN TEXAS. (4510015225) Prerequisite: GOVT 2301 or 2302. (4510015225) Prerequisite: GOVT 2301 or 2302 or departmental approval; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

GOVT 2304 - INTRODUCTION TO POLITICAL SCIENCE
3 Credits (3 hrs. lec.) An introductory survey of the field of political science. Emphasis will be placed on the scope of the discipline; methods of inquiry and analysis appropriate for the study of political behavior; and recurring themes and problems in the study of political theory. This course may not be substituted for GOVT 2301 or 2302. (4510015225) Prerequisite: GOVT 2301 or 2302 or departmental approval; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

GOVT 2302 - AMERICAN GOVERNMENT: NATIONAL, STATE AND LOCAL II
3 Credits (3 hrs. lec.) An examination of the institutional elements of the American political system: legislature, executive, judiciary, and bureaucracy. These elements are examined at the national, state, and local levels with a special emphasis on their roles in the development of public policy. (4510025125) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

GRPH 1305 - INTRODUCTION TO GRAPHIC ARTS AND PRINTING
3 Credits (3 hrs. lec.) Graphic ARTS industry, including the history of printing, techniques involved in the production and distribution of printed materials, the kinds of printing industries and printing terminology and identify career opportunities in graphics and printing fields. Prerequisite: ARTC 2348

GRPH 1395 - SPECIAL TOPICS - COMPUTER TYPGRAPHER & COMPOSITION PUBLISHING EQUIPMENT OPERATOR
3 Credits (2 hrs. lec., 3 hrs. lab.) Topics address recently
identified current events, skills, knowledge, and/or attitudes and behaviors pertinent to the technology or occupation and relevant to the professional development of the student. Students will contract with the instructor to increase specific skills in an orderly and defined manner. Independent learning skills and development of lifelong learning skills are emphasized. Prerequisite: ARTC 2348

GRPH 2380 - COOPERATIVE EDUCATION

3 Credits (1 hr. lec., 20 hrs. ext.) Career-related activities encountered in the student’s area of specialization offered through an individualized agreement among the college, employer, and student. Under the supervision of the college and the employer, the student combines classroom learning with work experience. Includes a lecture component. Prerequisite: Departmental approval; meets requirements for final semester.

HAMG 1308 - INTRODUCTION TO THE HOSPITALITY INDUSTRY

3 Credits (3 hrs. lec.) An introduction to lodging and food service operations. Topics include growth, development, and organization of the lodging industry; growth, development, organization, structure, and management of food service operations; human resources, marketing, security, engineering, and maintenance of hospitality operations; and opportunities within the restaurant, hotel, travel and tourism industry. Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

HAMG 1340 - HOSPITALITY LEGAL ISSUES

3 Credits (3 hrs. lec.) A course in legal and regulatory requirements that impact the hospitality industry. Topics include Occupational Safety and Health Administration (OSHA), labor regulations, tax laws, tip reporting, franchise regulations, and product liability laws. Prerequisite: HAMG 1308; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

HAMG 2305 - HOSPITALITY MANAGEMENT AND LEADERSHIP

3 Credits (3 hrs. lec.) An overview of management and leadership in the hospitality industry with an emphasis on management philosophy, policy formulation, communications, motivation and team building. Prerequisite: HAMG 1308; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

HAMG 2337 - HOSPITALITY FACILITIES MANAGEMENT

3 Credits (3 hrs. lec.) Identification of building systems, facilities management, security and safety procedures. Prerequisite: HAMG 1308; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

HART 1291 - SPECIAL TOPICS IN HEATING, AIR CONDITIONING, AND REFRIGERATION TECHNOLOGIES/TECHNICIAN

2 Credits (1 hr. lec., 4 hrs. lab.) Topics address recently identified current events, skills, knowledge, and/or attitudes and behaviors pertinent to the technology or occupation and relevant to the professional development of the student. Prerequisite: 30 hours of training in HVAC&R technology program & departmental approval; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

HART 1401 - BASIC ELECTRICITY FOR HVAC

4 Credits (3 hrs. lec., 3 hrs. lab.) Principles of electricity as required by HVAC, including proper use of test equipment, electrical circuits, and component theory and operation. Prerequisite: None

HART 1403 - AIR CONDITIONING CONTROL PRINCIPLES

4 Credits (3 hrs. lec., 3 hrs. lab.) A basic study of HVAC and refrigeration controls; troubleshooting of control components; emphasis on use of writing diagrams to analyze high and low voltage circuits; a review of Ohm’s law as applied to air conditioning controls and circuits. Prerequisite: Departmental approval
DESCRIPTION OF COURSES

HART 1407 - REFRIGERATION PRINCIPLES
4 Credits (3 hrs. lec., 3 hrs. lab.) An introduction to the refrigeration cycle, heat transfer theory, temperature/pressure relationship, refrigerator handling, and refrigeration components and safety. Prerequisite: None

HART 1441 - RESIDENTIAL AIR CONDITIONING
4 Credits (3 hrs. lec., 3 hrs. lab.) A study of components, applications, and installation of mechanical air conditioning systems including operating conditions, troubleshooting, repair, and charging of air conditioning systems with gas and electric heat systems of split and package units. Corequisites: HART 1401 and HART 1407

HART 1445 - GAS AND ELECTRIC HEATING
4 Credits (3 hrs. lec., 3 hrs. lab.) Study of the procedures and principles used in servicing heating systems including gas fired furnaces and electric heating systems. Prerequisite: Departmental approval

HART 2380 - COOPERATIVE EDUCATION - HEATING, AIR CONDITIONING & REFRIGERATION
3 Credits (1 hr. lab., 20 hrs. ext.) Career-related activities encountered in the student’s area of specialization offered through an individualized agreement among the college, employer, and student. Under the supervision of the college and the employer, the student combines classroom learning with work experience. Includes lecture component. Prerequisite: Enrollment in HVAC&R AAS certificate or degree program/completion of 20 hrs. in certificate or degree plan; ENGL 0304 and 0306, OR higher level course (ENGL 1301), OR placement by testing, MATH 0306

HART 2431- ADVANCED ELECTRICITY
4 Credits (3 hrs. lec., 3 hrs. lab.) Advanced electrical instruction and skill building in installation and servicing of air conditioning and refrigeration equipment including detailed instruction in motors and power distribution, motors, motor controls, and application of solid state devices. Prerequisite: HART 1401 and 1407

HART 2434 - ADVANCED A/C CONTROLS
4 Credits (3 hrs. lec., 3 hrs. lab.) Theory and application of electrical control devices, electromechanical controls, and/or pneumatic controls. Prerequisite: HART 2436

HART 2436 - AIR CONDITIONING TROUBLESHOOTING
4 Credits (3 hrs. lec., 3 hrs. lab.) An advanced course in application of troubleshooting principles and use of test instruments to diagnose air conditioning and refrigeration components and system problems including conducting performance tests. Prerequisite: Instructor approval

HART 2441 - COMMERCIAL AIR CONDITIONING
4 Credits (3 hrs. lec., 3 hrs. lab.) A study of components, applications, and installation of air conditioning systems with capacities of 25 tons or less. Prerequisite: HART 1401 and 1407

HART 2442 - COMMERCIAL REFRIGERATION
4 Credits (3 hrs. lec., 3 hrs. lab.) Theory and practical application in the maintenance of commercial refrigeration; medium and low temperature applications and ice machines. Prerequisite: HART 1401 and HART 1407

HART 2443 - INDUSTRIAL AIR CONDITIONING
4 Credits (3 hrs. lec., 3 hrs. lab.) A study of components, accessories, applications, and installation of air conditioning systems above 25 tons capacity. Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing; Corequisite: HART 2434

HART 2445 - RESIDENTIAL AIR CONDITIONING SYSTEMS DESIGN
4 Credits (3 hrs. lec., 3 hrs. lab.) Study of the properties of air and results of cooling, heating, humidifying or dehumidifying; heat gain and heat loss calculations including equipment selection and balancing the air system. Prerequisite: HART 1401 and 1407

HART 2449 - HEAT PUMPS
4 Credits (3 hrs. lec., 3 hrs. lab.) A study of heat pumps, heat pump control circuits, defrost controls, auxiliary heat, air flow, and other topics related to heat pump systems. Prerequisite: HART 1401 and 1407

HART 2457 - SPECIALIZED COMMERCIAL REFRIGERATION
4 Credits (3 hrs. lec., 3 hrs. lab.) An advanced course covering the components, accessories, and service of specialized refrigeration units, such as ice machines, soft serve machines, cryogenics, and cascade systems. Prerequisite: HART 1401 and 1407
HIST 1301 - UNITED STATES HISTORY TO 1877
3 Credits (3 hrs. lec.) A survey of U.S. history from the Age of Discovery through the Civil War and Reconstruction. Special emphasis is placed on the emergence of the United States as a nation. Other topics will include westward expansion, slavery, the Civil War, and Reconstruction. Its purpose is to provide students with an interpretive analysis of the social, economic, political, and intellectual dynamics that have shaped United States history before 1877. (5401025125) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing.

HIST 1302 - UNITED STATES HISTORY SINCE 1877
3 Credits (3 hrs. lec.) A survey of U.S. history from the end of Reconstruction to the present. Special emphasis is placed on the emergence of the United States as a world power and our subsequent assumption of international responsibilities. Other topics will include westward expansion, industrialization, immigration, World War I, World War II, the subsequent Cold War, Vietnam, and the collapse of the Soviet Empire. (5401025125) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing.

HIST 2301 - TEXAS HISTORY
3 Credits (3 hrs. lec.) Survey of Texas from the Spanish exploration to the present. (4508025225) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing.

HIST 2311 - HISTORY OF WESTERN CIVILIZATION I
3 Credits (3 hrs. lec.) A history of Western civilization from the beginning of recorded history through the Renaissance and Reformation. Its purpose is to provide students with an interpretive analysis of the social, economic, political and intellectual dynamics that have shaped Western history since antiquity. (4508015425) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing.

HIST 2312 - HISTORY OF WESTERN CIVILIZATION II
3 Credits (3 hrs. lec.) A history of Western civilization from the age of exploration and the creation of the European nation-states through the Cold War of the twentieth century. Its purpose is to provide students with an interpretive analysis of the social, economic, political and intellectual dynamics that have shaped Western and world history since the religious wars of the Protestant Reformation. (4508015425) Prerequisite: ENGL 0305 or ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing.

HIST 2321 - WORLD HISTORY I
3 Credits (3 hrs. lec.) The history of human societies from the earliest evidences of ancient peoples until the voyages of Columbus from Europe to America. Consideration is given to all major cultural regions (Western Europe, Eastern Europe, the Middle East, South Asia/India, East Asia, Africa and Latin America). Emphasis is placed upon comparative aspects of history, and upon interactions among the major cultural regions. (4508015325) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing.

HIST 2322 - WORLD HISTORY II
3 Credits (3 hrs. lec.) The history of human societies since the voyages of Columbus from Europe to America. Consideration is given to all major cultural regions (Western Europe, Eastern Europe, the Middle East, South Asia/India, East Asia, Africa and Latin America). Emphasis is placed upon comparative aspects of history, and upon interactions among the major cultural regions. (4508015325) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing.

HIST 2351 - ADVANCED HISTORICAL ANALYSIS
3 Credits (3 hrs. lec.) A treatment of specialized historical topics, such as the American Civil War, the Vietnam War, World War II, Women, Afro-Americans, etc. Selected topics will vary from semester to semester as various instructors have an opportunity to bring their diverse specialties to the course. It may be repeated for credit as topics vary. This is an elective course and will not satisfy degree requirements in History. (5401015625) Prerequisite: 6 hrs. HIST or instructor approval; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing.
DESCRIPTION OF COURSES

**HITT 1166 - PRACTICUM - HEALTH INFORMATION TECHNOLOGY/TECHNICIAN**

1 Credit (7 hrs. ext.) Practical, general workplace training supported by an individualized learning plan developed by the employer, college, and student. Prerequisite: HITT 1401 and 1345; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing; MATH 0306

**HITT 1211 - COMPUTERS IN HEALTH CARE**

2 Credits (1 hr. lec., 2 hrs. lab.) Introduction to the concepts of computer technology related to health care and the tools and techniques for collecting, storing, and retrieving health care data. Prerequisite: ITSC 1401; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing; MATH 0306

**HITT 1213 - INSURANCE CODING**

2 Credits (1 hr. lec., 2 hrs. lab.) Provides skills and knowledge in the health information field for ICD-9 and CPT coding of insurance forms for reimbursement of medical services. Prerequisite: ITSC 1401; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing; MATH 0306

**HITT 1266 - PRACTICUM - HEALTH INFORMATION TECHNOLOGY/TECHNICIAN**

2 Credits (20 hrs. ext.) Practical, general workplace training supported by an individualized learning plan developed by the employer, college, and student. An intermediate or advanced type of health professions work-based instruction that helps students gain practical experience in the discipline, enhance skills, and integrate knowledge. The emphasis is on practical work experience for which the student has already acquired the necessary theoretical knowledge and basic skills. Direct supervision is provided by the clinical professional, generally a clinical preceptor. A health practicum may be a paid or unpaid learning experience. Prerequisite: Completion of all courses in the certificate

**HITT 1280 - COOPERATIVE EDUCATION**

2 Credits (1 hr. lec., 10 hrs. ext.) Career-related activities encountered in the student’s area of specialization offered through an individualized agreement among the college, employer, and student. Under the supervision of the college and the employer, the student combines classroom learning with work experience. Includes a lecture component. Prerequisite: HITT 2340

**HITT 1305 - MEDICAL TERMINOLOGY**

3 Credits (4 hrs. lec.) Medical terminology is the study of word origin and structure through the introduction of prefixes, suffixes, root words, plurals, abbreviations and symbols, surgical procedures, medical specialties, and diagnostics procedures. Prerequisites: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing; MATH 0306

**HITT 1342 - AMBULATORY CODING**

3 Credits (2 hrs. lec., 2 hrs. lab.) Application of basic coding rules, principles, guidelines, and conventions with emphasis on ambulatory coding. Prerequisite: BIOL 2401; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing; MATH 0306

**HITT 1345 - HEALTH CARE DELIVERY SYSTEMS**

3 Credits (3 hrs. lec.) Introduction to organization, financing, and delivery of health care services, accreditation, licensure and regulatory agencies. Prerequisite: HITT 1401; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing; MATH 0306

**HITT 1353 - LEGAL AND ETHICAL ASPECTS OF HEALTH INFORMATION**

3 Credits (3 hrs. lec.) Concepts of confidentiality, ethics, health care legislation, and regulations relating to the maintenance and use of health information. Prerequisite: HITT 1401; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing; MATH 0306

**HITT 1355 - HEALTH CARE STATISTICS**

3 Credits (3 hrs. lec.) General principles of health care statistics with emphasis in hospital statistics. Skill development in computation and calculation of health data. Prerequisite: HITT 1401; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing; MATH 0306
HITT 1401 - HEALTH DATA CONTENT AND STRUCTURE

4 Credits (3 hrs. lec., 3 hrs. lab.) Health Data Content and Structure is an introduction to systems and processes for collecting, maintaining, and disseminating primary and secondary health related information. The course includes instruction in delivery and organizational structure to include content of health records, documentation requirements, registries, indices, licensing, regulatory agencies, forms and screens. Prerequisite: Admission to the program; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing; MATH 0306

HITT 1441 - CODING AND CLASSIFICATION SYSTEMS

4 Credits (3 hrs. lec., 3 hrs. lab.) Coding and Classification Systems involves the application of basic coding rules, principles, guidelines, and conventions. Prerequisite: BIOL 2401, HITT 1401; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing; MATH 0306

HITT 2249 - RHIT COMPETENCY REVIEW

2 Credits (2 hrs. lec.) Review of HIT competencies, skills and knowledge base pertinent to the technology and relevant to the professional development of the student. Prerequisite: Completion of all major courses; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing; MATH 0306

HITT 2339 - HEALTH INFORMATION ORGANIZATION AND SUPERVISION

3 Credits (3 hrs. lec.) Health Information Organization and Supervision is an advanced course in the principles of organization and supervision of human, fiscal, and capital resources. Prerequisite: HITT 1401; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing; MATH 0306

HITT 2340 - ADVANCED MEDICAL BILLING & REIMBURSEMENT

3 Credits (2 hrs. lec., 2 hrs. lab.) Health insurance and reimbursement in various health care settings. Includes application of coding skills to prepare insurance forms for submission to third party payers. Prerequisite: ITSC 1401; HITT 1213 OR POFM 1300; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing; MATH 0306; Corequisite: can be taken concurrently with POFM 2310

HITT 2343 - QUALITY ASSESSMENT AND PERFORMANCE IMPROVEMENT

3 Credits (2 hrs. lec., 2 hrs. lab.) Quality Assessment and Performance Improvement is the study of the many facets of quality standards and methodologies in the health information management environment. Topics include licensing, accreditation, compilation and presentation of data in statistical formats, quality improvement functions, quality tools, utilization management, risk management, and medical staff data quality issues. Prerequisite: HITT 1401 and 1345; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing; MATH 0306

HITT 2435 - CODING AND REIMBURSEMENT TECHNOLOGIES

4 Credits (3 hrs. lec., 3 hrs. lab.) Development of advanced coding techniques with emphasis on case studies, health records, and federal regulations regarding prospective payment systems and methods of reimbursement. Prerequisite: HITT 1342 and 1441; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing; MATH 0306

HITT 2460 - CLINICAL - MEDICAL RECORDS TECHNOLOGY/TECHNICIAN

4 Credits (12 hrs. ext.) A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional. Prerequisite: Completion of all major program courses; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing; MATH 0306

HPRS 1202 - WELLNESS AND HEALTH PROMOTION

2 Credits (2 hrs. lec.) An overview of wellness theory and its application throughout the life span. Focus is on attitude development, impact of cultural beliefs, and communication of wellness. Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing; MATH 0306
DESCRIPTION OF COURSES

**HPRS 2300 - PHARMACOLOGY FOR HEALTH PROFESSIONS**

3 Credits (3 hrs. lec.) A study of drug classifications, actions, therapeutic uses, adverse effects, routes of administration, and calculation of dosages. Prerequisite: ENGL 0305, ENGL 0313 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing; MATH 0306

**HPRS 2301 - PATHOPHYSIOLOGY**

3 Credits (3hrs. lec.) Study of the pathology and general health management of diseases and injuries across the life span. Topics include etiology, symptoms, and the physical and psychological reactions to diseases and injuries. Prerequisite: BIOL 2401 or BIOL 2404; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing; MATH 0306

**HPRS 2321 - MEDICAL LAW AND ETHICS FOR HEALTH PROFESSIONALS**

3 Credits (3 hrs. lec.) Principles, procedures, and regulations governing the legal and ethical relationships among physicians, patients, and health care professionals. Includes current ethical issues related to the various healthcare professions and patient confidentiality. Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing; MATH 0306

**HPRS 2331 - GENERAL HEALTH PROFESSIONS MANAGEMENT**

3 Credits (3 hrs. lec.) Exploration and application of management concepts necessary for effective health profession operations. Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

**HPRS 2332 - HEALTH CARE COMMUNICATIONS**

3 Credits (3 hrs. lec.) Application of oral, written, and technological methods of communication with clients, client support groups, health care professionals, and external agencies. Prerequisite: ITSC 1401 or COSC 1401; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

**HRMO 1301 - HOSPITALITY ADVERTISING**

3 Credits (3 hrs. lec.) An overview of effective advertising and promotion techniques for hospitality managers. Prerequisite: HAMG 1308; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

**HRMO 1303 - HOSPITALITY INDUSTRY SALES**

3 Credits (3 hrs. lec.) A study of the relationship of production and consumption in the hospitality industry with emphasis on the role of sales promotion. Prerequisite: HAMG 1308; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

**HRPO 1311 - HUMAN RELATIONS**

3 Credits (3 hrs. lec.) Practical application of the principles and concepts of the behavioral sciences to interpersonal relationships in the business and industrial environment. Prerequisite: None

**HRPO 2301 - HUMAN RESOURCE MANAGEMENT**

3 Credits (3 hrs. lec.) Behavioral and legal approaches to the management of human resources organizations. Prerequisite: None

**HRPO 2307 - ORGANIZATIONAL BEHAVIOR**

3 Credits (3 hrs. lec.) The analysis and application of organizational theory, group dynamics, motivation theory, leadership concepts, and the integration of interdisciplinary concepts from the behavioral sciences. Prerequisite: None

**HUMA 1301 - INTRODUCTION TO THE HUMANITIES I: PREHISTORY TO GOTHIC**

3 Credits (3 hrs. lec.) A study of the interpretation of human experience through an introduction to music, literature, the visual arts, history and philosophy. Focus is on gaining practical experience in inquiry, recognition and assessment. (2401035112) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

**HUMA 1302 - INTRODUCTION TO THE HUMANITIES II: EARLY RENAISSANCE TO THE PRESENT**

3 Credits (3 hrs. lec.) An interdisciplinary, multi-perspective assessment of cultural, political, philosophical, and aesthetic factors critical to the formulation of
values and the historical development of the individual and society. HUMA 1302 will focus on the time period Early Renaissance to the Present.

HUMD 0100 - THEA SUCCESS STRATEGIES

1 Credit (3 hrs. lab.) HUMD 0100 is established to accommodate students desiring short-term or long-term remediation. This structure will best serve students who are able to thrive in a self-directed study environment. This course carries institutional credit but will not transfer nor be used to meet degree requirements. (3201015212) Prerequisite: None

HUMD 0101 - COLLEGE 101: FIRST YEAR INTRODUCTION (FYI)

1 Credit (1 hr. lec.) In this course, students will learn how to adjust to college. Course content will evolve from student interests and needs. Some probable areas of study include: becoming familiar with campus resources, learning student success skills, and utilizing campus email and web services. Upon successful course completion, students will have developed an individualized education plan. This course carries institutional credit but will not transfer nor be used to meet degree requirements. It cannot be used as a substitute for enrollment in developmental education courses. (3201015212) Prerequisite: None

HUMD 0111 - STUDENT SUCCESS STRATEGIES

1 Credit (1 hr. lec.) In this course, students will learn a series of strategies for mastering the skills needed for success in college courses. Strategies to be introduced address processing information from textbooks and lectures, studying for and taking tests and understanding the importance of self-concept in college success. As the strategies are introduced, students apply this to the content of courses in which they are currently enrolled. Upon successful course completion, students will have developed a system for learning which can be adapted for use in any learning situation. This course carries institutional credit but will not transfer nor be used to meet degree requirements. It cannot be used as a substitute for enrollment in developmental education courses. (3201015212) Prerequisite: None

HUMD 0112 - MATH & SCIENCE SUCCESS STRATEGIES

1 Credit (1 hr. lec.) This course teaches thinking and study skills specifically geared toward the learning of math and science, including problem solving skills, test taking skills, and cognitive skills. In addition, an understanding of the importance of learning styles and time management to success in math and science courses will be addressed. Students practice these skills on their textbooks and homework assignments, as well as in their discussions. This course also addresses feelings and attitudes which may block math and science learning and offers strategies and techniques designed to overcome these feelings. Concurrent enrollment in a math or science course is highly recommended. This course carries institutional credit but will not transfer nor be used to meet degree requirements. It cannot be used as a substitute for enrollment in developmental education courses. (3201015212) Prerequisite: None

HUMD 0113 - READING & WRITING SUCCESS STRATEGIES

1 Credit (1 hr. lec.) In this course, students will develop strategies to meet writing requirements, whether they be in the form of note taking or writing research papers, reviews or other reports, and reading requirements for textbooks and articles. In addition, an understanding of the importance of learning styles and time management to success in reading and writing intensive courses will be addressed. Students practice these skills utilizing the assignments, books, and articles assigned in their courses. Upon successful completion of this course, students will have developed a system that can be applied to any course with a reading or writing emphasis. Concurrent enrollment in a reading or writing intensive course is highly recommended. This course carries institutional credit but will not transfer nor be used to meet degree requirements. It cannot be used as a substitute for enrollment in developmental education courses. (3201015212) Prerequisite: None
DESCRIPTION OF COURSES

HUMD 0114 - CAREER SEARCH STRATEGIES

1 Credit (1 hr. lec.) This course focuses on strategies that students need to develop realistic career goals. Topics emphasized include decision making and critical thinking, assessment for greater self-awareness, and research techniques for gathering occupational information. Upon successful course completion, students will be able to understand the career decision making process, identify/confirm career related abilities, interests, and values, apply various career investigation skills, and analyze viability of careers of interest. This course carries institutional credit but will not transfer nor be used to meet developmental requirements. (3201015212) Prerequisite: None

HUMD 0330 - COLLEGE SUCCESS COURSE

3 Credits (3 hrs. lec.) Many colleges and universities, and community colleges in particular, are becoming increasingly aware of the need for academic skill training designed to improve study systems. The purpose of this course is to increase the full realization of academic potential and to decrease academic failure. This course will aim to achieve this goal by helping the student to gain success in the academic environment and by providing the student with learning strategies and specific techniques to increase his/her effectiveness. Thus, the course will be designed to help the student develop new personal insights, new strategies for study and new approaches to self-management by using basic psychological principles. This course carries institutional credit but will not transfer nor be used to meet degree requirements. (3201015212) Prerequisite: None

HYDR 1305 - BASIC HYDRAULICS

3 Credits (2 hrs. lec., 3 hrs. lab.) Fundamentals of hydraulics including types of hydraulic pumps, cylinders, valves, motors, and related systems. Introduction to hydraulic schematic symbols as related to components. Prerequisite: None

HYDR 1309 - BASIC FLUID POWER I (HYDRAULICS)

3 Credits (1 hr. lec., 3 hrs. lab.) Introduction to the basic principles of hydraulic pressure flow and system components including system controls, symbols, and circuits. Emphasis on good maintenance procedures, troubleshooting techniques, and safety practices. Prerequisite: None

HYDR 1315 - BASIC FLUID POWER II (PNEUMATICS)

3 Credits (2 hrs. lec., 3 hrs. lab.) Introduction to the basic principles of pneumatic pressure, flow, and system components including manual and electro-mechanical controls, symbols, and circuits. Emphasis on troubleshooting techniques, good maintenance procedures, and safety practices. Prerequisite: HYDR 1309

HYDR 1345- HYDRAULICS AND PNEUMATICS

3 Credits (2 hrs. lec., 3 hrs. lab.) Fundamentals of hydraulics and types of hydraulic pumps, cylinders, valves, motors, and related systems including operations, maintenance, and system analysis. Prerequisite: None

IBUS 1301- PRINCIPLES OF IMPORT/EXPORT

3 Credits (3 hrs. lec.) A study of the import and the export management process and procedures. Topics include governmental controls, licensing of products, documentation, commercial invoices, and traffic procedures. Application to human and public relations, management of personnel, finance, and accounting procedures. Prerequisite: None

IBUS 1305 - INTRODUCTION TO INTERNATIONAL BUSINESS AND TRADE

3 Credits (3 hrs. lec.) The techniques for entering the international marketplace. Emphasis on the impact and dynamics of sociocultural, demographic, economic, technological, and political-legal factors in the foreign trade environment. Topics include patterns of world trade, internationalization of the firm, and operating procedures of the multinational enterprise. Prerequisite: None

IBUS 2341 - INTERNATIONAL COMPARATIVE MANAGEMENT

3 Credits (3 hrs. lec.) A study of cross-cultural comparisons of management and communications processes. Emphasis on cultural geographic distinctions and antecedents that affect individual, group, and organizational behavior. Topics include sociocultural demographic, economic, technological, and political-legal environment of cluster countries and their relationship to organizational communications and decision making. Fulfills multicultural requirement. Prerequisite: None
IBUS 2345 - IMPORT CUSTOM REGULATIONS
3 Credits (3 hrs. lec.) A study of the duties and responsibilities of the licensed customs broker or customhouse broker. Topics include processes for customs clearance including appraisement, bonded warehouse entry, examination of goods, harmonized tariffs, fees, boning, penalties, quotas, immediate delivery, consumption and liquidation, computerized systems, laws, and regulations. Prerequisite: IBUS 1301 or departmental approval.

IEIR 1310 - MOTOR CONTROLS
3 Credits (2 hrs. lec., 4 hrs. lab.) General principles and fundamentals of electrical controls and control components including starters troubleshooting techniques, various protective devices, schematics, and diagrams. Student will develop “hands-on” skills using transformers, motors, magnetic control devices, relays, time delay circuits, reversing circuits and other control input devices. Prerequisite: CETT 1402, 1405 or 1409 or departmental approval; ENGL 0304, 0306; MATH 0306.

IMED 1301 - INTRODUCTION TO MULTIMEDIA
3 Credits (2 hrs. lec., 4 hrs. lab.) A survey of the theories, elements, and hardware/software components of multimedia. Topics include digital image editing, digital sound and video editing, animation, web page development, and interactive presentations. Emphasis on conceptualizing and producing effective multimedia presentations. Prerequisite: None.

IMED 1305 - MULTIMEDIA COURSEWARE DEVELOPMENT I
3 Credits (2 hrs. lec., 4 hrs. lab.) Instruction in courseware development. Topics include interactivity, branching, navigation, evaluation techniques and interface/information design using industry standard authoring software. Prerequisite: None.

IMED 1316 - WEB PAGE DESIGN I
3 Credits (2 hrs. lec., 4 hrs. lab.) Instruction in web page design and related graphic design issues including mark-up languages, web sites, and browsers. Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing.

IMED 1341 - 2-D INTERFACE DESIGN
3 Credits (2 hrs. lec., 4 hrs. lab.) Skill development in the interface design process including selecting interfaces that are meaningful to users and relative to a project’s content and delivery system. Emphasis is on aesthetic issues such as iconography, screen composition, colors, and typography. Prerequisite: ARTC 1302, ARTC 1317.

IMED 1343 – DIGITAL SOUND
3 Credits (2 hrs. lec., 4 hrs. lab.) Instruction in digitizing sound and incorporating it into multimedia or web titles for various delivery systems. Emphasis on compression issues, sampling, synchronizing, and resource management. Prerequisite: None.

IMED 1345 - INTERACTIVE MULTIMEDIA I
3 Credits (2 hrs. lec., 4 hrs. lab.) Exploration of the use of graphics and sound to create interactive multimedia animations using industry standard authoring software. Prerequisite: IMED 1301 and ARTC 1302.

IMED 1391 - SPECIAL TOPICS-EDUCATIONAL/INSTRUCTIONAL MEDIA DESIGN
3 Credits (2 hrs. lec., 4 hrs. lab.) Topics address recently identified current events, skills, knowledge, and/or attitudes and behaviors pertinent to the technology or occupation and relevant to the professional development of the student. This course will focus on video pre-production, production, and post-production for client-based projects. Prerequisite: Instructor approval.

IMED 2305 - MULTIMEDIA COURSEWARE DEVELOPMENT II
3 Credits (2 hrs. lec., 4 hrs. lab.) In-depth coverage of programming/scripting using an authoring system with emphasis on advanced development of courseware products. Prerequisite: IMED 1305; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing.

IMED 2309 - INTERNET COMMERCE
3 Credits (2 hrs. lec., 4 hrs. lab.) An overview of the Internet as a marketing and sales tool with emphasis on developing a prototype for electronic commerce. Topics include database technology, creating web sites in order to collect information, performing online transactions, and generating dynamic content.
DESCRIPTION OF COURSES

Prerequisite: IMED 1316; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing.

**IMED 2311 - PORTFOLIO DEVELOPMENT**

3 Credits (2 hrs. lec., 4 hrs. lab.) Emphasis on preparation and enhancement of portfolio to meet professional standards, professional organizations, presentation skills, and job-seeking techniques. Prerequisite: Instructor approval

**IMED 2313 - PROJECT ANALYSIS AND DESIGN**

3 Credits (2 hrs. lec., 4 hrs. lab.) Introduction to the multimedia planning process for multimedia or web, including costing, preparation, production, legal issues, and guidelines for pre-production preparation and creation of a comprehensive design document including target audience analysis, purpose and goals, objectives, content outline, flow chart, and storyboard. Emphasis on content design and production management. Prerequisite: IMED 1301; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

**IMED 2315 - WEB PAGE DESIGN II**

3 Credits (2 hrs. lec., 4 hrs. lab.) A study of mark-up language and advanced layout techniques for creating web pages. Emphasis on identifying the target audience and producing web sites according to accessibility standards, cultural appearance, and legal issues. Prerequisite: IMED 1316; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

**IMED 2345 - INTERACTIVE MULTIMEDIA II**

3 Credits (2 hrs. lec., 4 hrs. lab.) Instruction in the use of scripting language to create interactive multimedia projects. Topics include building a user interface, writing script, testing, and debugging. Prerequisite: IMED 1345; ENGL 0304, 0306

**IMED 2349 - INTERNET COMMUNICATIONS**

3 Credits (2 hrs. lec., 4 hrs. lab.) Advanced seminar in web server design and maintenance. Topics include scripting, web site planning, testing, security, production, and marketing. Prerequisite: IMED 1316; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

**IMED 2380 - COOPERATIVE EDUCATION - INTERACTIVE MEDIA**

3 Credits (1 hr. lec., 20 hrs. ext.) Career-related activities encountered in the student’s area of specialization offered through an individualized agreement among the college, employer, and student. Under the supervision of the college and the employer, the student combines classroom learning with work experience. Includes a lecture component. Prerequisite: Meets requirements for final semester; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

**INDS 1311 - FUNDAMENTALS OF INTERIOR DESIGN**

3 Credits (2 hrs. lec., 4 hrs. lab.) An introduction to the elements and principles of design, the interior design profession, and the interior design problem-solving process. Prerequisite: MATH 0306 or equivalent test score; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

**INDS 1315 - MATERIALS, METHODS AND ESTIMATING**

3 Credits (2 hrs. lec., 4 hrs. lab.) A study of materials, methods of construction and installation, and estimating for interior design applications. Prerequisite: MATH 0306 or equivalent test score; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

**INDS 1319 - TECHNICAL DRAWING FOR INTERIOR DESIGNERS**

3 Credits (2 hrs. lec., 4 hrs. lab.) An introduction to reading and preparing technical construction drawings for interior design, including plans, elevations, details, schedules, dimensions and lettering. Prerequisite: MATH 0306 or equivalent test score; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

**INDS 1345 - COMMERCIAL DESIGN I**

3 Credits (2 hrs. lec., 4 hrs. lab.) A study of design principles applied to furniture layout and space planning for commercial interiors. Prerequisites: INDS 1349 and 2321; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing
INDS 1349 - FUNDAMENTALS OF SPACE PLANNING
3 Credits (2 hrs. lec., 4 hrs. lab.) The study of residential and light commercial spaces, including programming, codes, standards, space planning, drawings and presentations. Prerequisite: INDS 1311 and 1319; ENGL 0305, ENGL 0307, MATH 0306

INDS 1351 - HISTORY OF INTERIORS I
3 Credits (3 hrs. lec., 1 hr. lab.) An in-depth historical survey of design in architecture, interiors, furnishings, and decorative elements from the ancient cultures through the Italian Renaissance time periods. Prerequisite: ENGL 0305, 0307 or ENGL 0315, 0316, 0326; or equivalent test scores, MATH 0306

INDS 1352 - HISTORY OF INTERIORS II
3 Credits (3 hrs. lec., 1 hr. lab.) A multi-cultural historical survey of design in architecture, interiors, furnishings, and decorative elements from the post-Renaissance period to present time. Prerequisite: ENGL 0305, 0307 or 0313; or ENGL 0316 or 0326; or equivalent test scores, MATH 0306

INDS 1371 - KITCHEN AND BATH
3 Credits (2 hrs. lec., 4 hrs. lab.) This course introduces principles of successful kitchen and bath design. Course material emphasizes programming and space planning to meet specific requirements encompassing universal design criteria. Curriculum involves an in-depth study of innovative products and finishes for the kitchen and bath in private residences, according to guidelines set forth by the NKBA. Prerequisite: INDS 1349 and 2321; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

INDS 1372 - SUSTAINABLE DESIGN
3 Credits (2 hrs. lec., 4 hrs. lab.) The enhanced study of sustainable design processes, including the identification and characteristics of green building products, the impact of interior building materials on humans and the global ecological system, the rating systems used to evaluate commercial and residential design and how sustainable design processes and materials are incorporated into the built environment. Prerequisite: INDS 1349, 1315 and 2321; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

INDS 2237 - PORTFOLIO PRESENTATION
2 Credits (2 hrs. lec.) A course in the preparation and presentation of a comprehensive interior design portfolio, including resume preparation, employment interview skills, and goal setting. Prerequisite: Should be taken during student’s final semester; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

INDS 2305 - INTERIOR DESIGN GRAPHICS
3 Credits (2 hrs. lec., 4 hrs. lab.) Skill development in computer generated graphics and technical drawings for interior design applications. Prerequisite: INDS 1319; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

INDS 2307 - TEXTILES FOR INTERIOR DESIGN
3 Credits (2 hrs. lec., 4 hrs. lab.) The study of interior design textiles including characteristics, care, codes, and applications. Prerequisite: ENGL 0305, ENGL 0307, MATH 0306

INDS 2311 - INTERIOR ENVIRONMENTAL FACTORS
3 Credits (3 hrs. lec.) A study of human and material factors affecting the interior environment, including proxemics, ergonomics, universal design, and use of sustainable materials. Prerequisite: INDS 1311 or departmental approval; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing; MATH 0308

INDS 2313 - RESIDENTIAL DESIGN I
3 Credits (2 hrs. lec., 4 hrs. lab.) The study of residential spaces, including the identification of client needs, programming, standards, space planning, drawings, and presentations. Prerequisite: INDS 1349 and 2321; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

INDS 2315 - LIGHTING FOR INTERIOR DESIGNERS
3 Credits (2 hrs. lec., 4 hrs. lab.) Fundamentals of lighting design, including lamps, luminaires, lighting techniques, and applications for residential and commercial projects. Prerequisite: INDS 1319; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing
DESCRIPTION OF COURSES

INDS 2321 - PRESENTATION DRAWING
3 Credits (2 hrs. lec., 4 hrs. lab.) An introduction to two- and three-dimensional presentations, including drawings with one- and two-point perspectives, plans, and elevations. Prerequisite: INDS 1311 and 1319; ARTS 1316; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing, and department approval.

INDS 2325 - PROFESSIONAL PRACTICES FOR INTERIOR DESIGNERS
3 Credits (3 hrs. lec.) A study of business practices and procedures for interior designers, including professional ethics, project management, marketing, and legal issues. Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

INDS 2330 - INTERIOR DESIGN BUILDING SYSTEMS
3 Credits (2 hrs. lec., 4 hrs. lab.) An overview of building materials, mechanical systems, and construction techniques as applied to interior design. Discussion of codes, project sequencing and the interpretation of detailed working drawings. Prerequisite: INDS 1319; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

INDS 2486 - INTERNSHIP - INTERIOR DESIGN
4 Credits (1 hr. lec., 16 hrs. ext.) A work-based learning experience that enables the student to apply specialized occupational theory, skills and concepts. A learning plan is developed by the college and the employer. Prerequisite: Student must have completed all first semester classes, or departmental approval; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

INDMT 1311 - COMPUTER INTEGRATED MANUFACTURING
3 Credits (2 hrs. lec., 2 hrs. lab.) A study of the principles and application of computer-integrated manufacturing. Employ all aspects of a system including but not limited to integration of material handling, manufacturing, and computer hardware and programming. Prerequisite: MCHN 1319

INDMT 1443 - CAD - CAM
4 Credits (2 hrs. lec., 6 hrs. lab.) Computer-assisted applications in integrating engineering graphics and manufacturing. Emphasis on the conversion of a working drawing using CAD-CAM software and related input and output devices to translate into machine code. Upon completion of this course the student shall be able to describe the proper uses of tooling; describe the “G” codes; write programs for the CNC TorCAM mill and lathe machine; and organize and edit CNC programs; and produce detail parts on the mill and lathe. Prerequisite: Instructor approval

INDMT 1491 - SPECIAL TOPICS - INDUSTRIAL MANUFACTURING TECHNOLOGY/TECHNICIAN
4 Credits (3 hrs. lec., 3 hrs. lab.) Topics address recently identified current events, skills, knowledge, and/or attitudes and behaviors pertinent to the technology or occupation and relevant to the professional development of the student. Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

INDMT 2301 - MACHINERY INSTALLATION
3 Credits (1 hr. lec., 4 hrs. lab.) Students utilize skills acquired in previous studies. Machinery foundation, locations, installation, and alignment activities are practiced and tested. Emphasis is on the various methods of shaft alignment including laser shaft alignment. Prerequisite: None

INDMT 2345 - INDUSTRIAL TROUBLESHOOTING
3 Credits (2 hrs. lec., 3 hrs. lab.) An advanced study of the techniques used in troubleshooting various types of industrial equipment to include mechanical, electrical, hydraulic, and pneumatic systems and their control devices. Emphasis will be placed on the use of schematics and diagrams in conjunction with proper troubleshooting procedures. Prerequisite: None
INMT 2380 - COOPERATIVE EDUCATION
- INDUSTRIAL MANUFACTURING TECHNOLOGY/TECHNICIAN

3 Credits (1 hr. lec., 20 hrs. ext.) Career-related activities encountered in the student's area of specialization offered through an individualized agreement among the college, employer, and student. Under the supervision of the college and the employer, the student combines classroom learning with work experience. Includes a lecture component. Prerequisite: Departmental approval

INMT 2381 - COOPERATIVE EDUCATION
- INDUSTRIAL MANUFACTURING TECHNOLOGY/TECHNICIAN

3 Credits (1 hr. lec., 20 hrs. ext.) Career-related activities encountered in the student's area of specialization offered through an individualized agreement among the college, employer, and student. Under the supervision of the college and the employer, the student combines classroom learning with work experience. Includes a lecture component. Prerequisite: Departmental approval

INTC 1240 - PRINCIPLES OF AUTOMATIC CONTROL

2 Credits (1 hr. lec., 3 hrs. lab.) A study of the theory of basic measurements, automatic control systems and design, closed loop systems, recorders, controllers, feedback, control modes and control configurations. Prerequisite: None

INTC 1307 - ELECTRONIC TEST EQUIPMENT

3 Credits (2 hrs. lec., 4 hrs. lab.) A study of the general theory and application of analog and digital meters, oscilloscopes, frequency generation, frequency measurements, and special measuring instruments. Emphasis on accuracy and limitations of instruments and calibration techniques. Prerequisite: CETT 1425; ENGL 0304, 0306, MATH 0306

INTC 1422 - ANALOG ELECTRONIC INSTRUMENTATION I

4 Credits (3 hrs. lec., 3 hrs. lab.) A review of basic electronic concepts related to measurement theory. Instruction in instrumentation calibrators and calibration circuits used for servicing and calibration of potentiometers, temperature transmitters, and various transducers. Prerequisite: None

ITAL 1411 - BEGINNING ITALIAN I

4 Credits (3 hrs. lec., 2 hrs. lab.) This course includes beginner's pronunciation, oral practice, conversation, use of recordings for ear training, basic principles of grammar, simple exercises in composition, easy reading which includes cultural material. (1609025113) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

ITAL 1412 - BEGINNING ITALIAN II

4 Credits (3 hrs. lec., 2 hrs. lab.) This course is a continuation of 1411 with increased emphasis on comprehension, speaking, reading, and writing. Intensive skills to increase vocabulary and knowledge of structure. (1609025113) Prerequisite: ITAL 1411; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

ITAL 2311 - INTERMEDIATE ITALIAN I

3 Credits (3 hrs. lec.) This course stresses both oral and written exercises to increase vocabulary expansion of grammatical principles and short themes written on a variety of topics. (1609025213) Prerequisite: ITAL 1412; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

ITAL 2312 - INTERMEDIATE ITALIAN II

3 Credits (3 hrs. lec.) This course is a continuation of ITAL 2311 with emphasis on literary works by Italian authors. Students will read one major novel in Italian. Continued reinforcement of grammatical principles and development of writing and oral skills are stressed. (1609025213). Prerequisite: ITAL 2311; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

ITCC 1402 - CCNA 1: NETWORKING BASICS

4 Credits (3 hrs. lec., 2 hrs. lab.) A course introducing the basics of networking including network terminology, local area networks (LAN) and wide area networks (WAN). Topics include network protocols such as TCP/IP, Open System Interconnection (OSI) models, cabling and routers. Prerequisite: ITSC 1401 or ITSE 1402; COSC 1309 or COSC 1401; or ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing
DESCRIPTION OF COURSES

ITCC 1406 - CCNA 2: ROUTER AND ROUTING BASIC
4 Credits (3 hrs. lec., 2 hrs. lab.) An introduction to basic Cisco router configuration for local area networks. Topics include initial router configuration for TCP/IP, management of Cisco IOS and router configuration files, routing protocols, and access control lists. Prerequisite: ITCC 1402; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

ITCC 1409 - CISCO VOICE AND DATA CABLEING
4 Credits (3 hrs. lec., 2 hrs. lab.) Introduces the physical aspects of CISCO voice and data network cabling and installation; skills development in reading network design documentations, part list setup and purchase, pulling and mounting cable, cable management, choosing wiring closets and path panel installation and termination, installing jacks and testing cable. Prerequisite: ITSC/COSC 1401 or ITSE 1402; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

ITCC 1442 - CCNA 3: SWITCHING BASIC AND INTERMEDIATE ROUTING
4 Credits (3 hrs. lec., 2 hrs. lab.) A course focusing on advanced topics including IP addressing techniques, intermediate routing protocols, CLI configuration of switches, Ethernet switching, VLANs, Spanning Tree Protocol, and VLAN Trunking Protocol. Prerequisite: ITCC 1406; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

ITCC 1446 - CCNA 4: WAN TECHNOLOGIES
4 Credits (3 hrs. lec., 2 hrs. lab.) This course focuses on advanced IP addressing techniques (Network Address Translation [NAT], Port Address Translation [PAT], and DHCP), WAN technology and terminology, PPP, ISDN, DDR, Frame Relay, network management and introduction to optical networking. In addition, the student will prepare for the CCNA exam. Prerequisite: ITCC 1442; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

ITCC 2444 - CCNP 8: NETWORK TROUBLESHOOTING
4 Credits (3 hrs. lec., 3 hrs. lab.) A study of troubleshooting methods for internetworks. Topics include Cisco Troubleshooting Tools, diagnosing and correcting problems within TCP/IP, Novell, and AppleTalk networks, and with Frame Relay and ISDN network connections. Prerequisite: ITCC 2444 or Cisco CCNA Industry Certification; ITCC 2432, 2436 and 2440; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

ITMT 1400 - IMPLEMENTING & SUPPORTING MICROSOFT WINDOWS XP PROFESSIONAL
4 Credits (3 hrs. lec., 2 hrs. lab.) Addresses the implementation and desktop support needs of customers that are planning to deploy and support Microsoft Windows XP Professional in a variety of stand-alone and network operating system environments. In-depth, hands-on training for Information Technology (IT) professionals responsible for the planning, imple-
ITMT 1440 - MANAGING & MAINTAINING A MS WINDOWS SERVER 2003 ENVIRONMENT

4 Credits (3 hrs. lec., 2 hrs. lab.) Managing accounts and resources, maintaining server resources, monitoring server performance, and safeguarding data in a Microsoft Windows Server 2003 environment. This is the first course in the Systems Administrator and Systems Engineer tracks for Windows Server 2003 and serves as the entry point for other courses in the Windows Server curriculum. Prerequisite: ITMT 1400; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

ITMT 1450 - IMPLEMENTING, MANAGING & MAINTAINING A MICROSOFT WINDOWS SERVER 2003 NETWORK INFRASTRUCTURE: NETWORK SERVICES

4 Credits (2 hrs. lec., 4 hrs. lab.) Implementing routing; implementing, managing, and maintaining Dynamic Host Configuration Protocol (DHCP), Domain Name System (DNS), and Windows Internet Name Service (WINS); securing Internet Protocol (IP) traffic with Internet Protocol security (IPSec) and certificates; implementing a network access infrastructure by configuring the connections for remote access clients; and managing and monitoring network access. This is the fourth course in the Systems Administrator and Systems Engineer track for Windows Server 2003, and it is the final course in the Systems Administrator track. Prerequisite: ITMT 1400, 1440; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

ITMT 1455 - MCSE IV, 70-293, PLANNING, IMPLEMENTING AND MAINTAINING A MICROSOFT WINDOWS SERVER 2003 ACTIVE DIRECTORY INFRASTRUCTURE

4 Credits (3 hrs. lec., 2 hrs. lab.) Windows Server 2003 directory service environment. Includes forest and domain structure; Domain Name System (DNS); site topology and replication; organizational unit structure and delegation of administration; Group Policy; and user, group, and computer account strategies. This is the sixth course in the Windows Server 2003 Systems Engineer curriculum.. Prerequisite: ITMT 1400, 1440; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

ITMT 2400 - MCSE V, 70-294, PLANNING, IMPLEMENTING AND MAINTAINING A MICROSOFT WINDOWS SERVER 2003 ACTIVE DIRECTORY & NETWORK INFRASTRUCTURE

4 Credits (3 hrs. lec., 2 hrs. lab.) Designing a Microsoft Active Directory service and network infrastructure for a Microsoft Windows Server 2003 environment. Intended for systems engineers who are responsible for designing directory service and/or network infrastructures. Prerequisite: ITMT 1400, 1440; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

ITMT 2430 - MCSE VI, 70-297, DESIGNING A MICROSOFT WINDOWS SERVER 2003 ACTIVE DIRECTORY & NETWORK INFRASTRUCTURE

4 Credits (3 hrs. lec., 2 hrs. lab.) Planning and maintaining a Windows Server 2003 network infrastructure. This is the fifth course in the Windows Server 2003 Engineer curriculum. Prerequisite: ITMT 1400, 1440; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

ITMT 2432 - MCSE XII, 70-086, DEPLOYING AND SUPPORTING MICROSOFT SYSTEMS MANAGEMENT SERVER 2.0

4 Credits (3 hrs. lec., 2 hrs. lab.) Deploying and supporting Microsoft Systems Management Server (SMS) version 2.0, Service Pack 2. Includes designing a site, organizing a site hierarchy, and planning for resource needs. Focuses on installing various types of sites, establishing a site hierarchy, configuring site-to-site communications, and installing clients in multiple sites. Emphasizes troubleshooting problems in site installation, client installation, site-to-site communications, and key features of SMS 2.0. Also includes tracing a task from its initiation to its completion by following the various threads of a task and using Network Monitor to trace network traffic associated with SMS tasks. Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing
DESCRIPTION OF COURSES

ITMT 2440 - MCSE VII, 70-298, DESIGNING SECURITY FOR MICROSOFT NETWORKS
4 Credits (3 hrs. lec., 2 hrs. lab.) Assembling the design team, modeling threats, and analyzing security risks in order to meet business requirements for securing computers in a networked environment. Includes decision-making skills through an interactive tool that simulates real-life scenarios. Focuses on collecting information and sorting through details to resolve a given security requirement. Prerequisite: ITMT 1400, 1440; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

ITMT 2446 - MCSE XI, 70-299, IMPLEMENTING & ADMINISTERING SECURITY IN A MICROSOFT WINDOWS SERVER 2003 NETWORK
4 Credits (3 hrs. lec., 2 hrs. lab.) Addresses the Microsoft Certified Systems Administrator (MCSA) and Microsoft Certified Systems Engineer (MCSE) skills path for information technology security practitioners. Focuses on Microsoft Windows Server 2003 infrastructure solutions. Includes client-focused content where appropriate. Provides functional skills in planning and implementing infrastructure security. Prerequisite: ITMT 1400, 1440 and 2400; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

ITMT 2450 - MCSE VIII, 70-284, IMPLEMENTING AND MANAGING MICROSOFT EXCHANGE SERVER 2003
4 Credits (3 hrs. lec., 2 hrs. lab.) Updating and supporting a reliable, secure messaging infrastructure used for creating, storing, and sharing information by using Microsoft Exchange Server 2003. Includes a significant amount of hands-on practices, discussions, and assessments to assist students in becoming proficient in the skills necessary to update and support Exchange Server 2003. Prerequisite: ITMT 1400, 1440; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

ITMT 2452 - MCSE IX, 70-281, PLANNING, DEPLOYING AND MANAGING AN ENTERPRISE PROJECT MANAGEMENT SOLUTION
4 Credits (3 hrs. lec., 2 hrs. lab.) Planning, deploying, and managing a Microsoft Office Project Server 2003 solution. Intended for information technology professionals who operate in medium to very large computing environments using Microsoft Windows Server 2003 operating system. Prerequisite: ITMT 2400; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

ITMT 2455 - MCSE XIII 70-285, DESIGNING A MICROSOFT WINDOWS SERVER 2003 ORGANIZATION
4 Credits (3 hrs. lec., 2 hrs. lab.) Designing a Microsoft Exchange Server 2003 organization in an enterprise network. Includes a plan for upgrading from previous versions of Microsoft Exchange. Prerequisite: ITMT 1400, 1440 and 2400; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

ITMT 2457 - MCSE X, 70-282, DESIGNING, DEPLOYING, AND MANAGING A NETWORK SOLUTION FOR THE SMALL AND MEDIUM-SIZED BUSINESS
4 Credits (3 hrs. lec., 2 hrs. lab.) Selecting, deploying, and managing a Microsoft networking solution for small- and medium-sized businesses. Prerequisite: ITMT 1400, 1440, and 2400; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

ITNW 1425 - FUNDAMENTALS OF NETWORKING TECHNOLOGIES
4 Credits (3 hrs. lec., 2 hrs. lab.) Instruction in networking technologies and their implementation. Topics include the OSI reference model, network protocols, transmission media, and networking hardware and software. Prerequisite: ITSC or COSC 1401; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

ITNW 1446 - MICROSOFT EXCHANGE SERVER CONCEPTS & ADMINISTRATION
4 Credits (3 hrs. lec., 2 hrs. lab.) Skills development in the day-to-day management of an established exchange server organization using Microsoft Exchange Server. Prerequisite: ITNW 2451 or 2457

ITNW 1451 - FUNDAMENTALS OF WIRELESS LAN’S
4 Credits (2 hrs. lec., 3 hrs. lab.) Designing, planning, implementing, operating, and troubleshooting wireless LANs (WLANs). Includes WLAN design, installation, and configuration; and WLAN security issues and vendor interoperability strategies. Prerequisites: ITSC 1401; ENGL 0305 or ENGL 0316 AND ENGL
ITNW 1456 - IMPLEMENTING MICROSOFT INTERNET EXPLORER

4 Credits (3 hrs. lec., 2 hrs. lab) An introduction to the architecture and features of Microsoft® Internet Explorer. Topics include set up, configuration, use, and deployment of Internet Explorer in a network environment. Prerequisite: None

ITNW 1492 - SPECIAL TOPICS IN BUSINESS SYSTEMS NETWORKING & TELECOMMUNICATIONS

4 Credits (4 hrs. lec.) Topics address recently identified current events, skills, knowledge, and/or attitudes and behaviors pertinent to the technology or occupation and relevant to the professional development of the student. This course was designed to be repeated multiple times to improve student proficiency. A survey covering aspects of establishing and maintaining a practical information security program. The security aspects and implications of databases, telecommunication systems, hardware, and software are examined, along with techniques used to assess risks and discover abuses of systems. Prerequisite: ITSC 1401 or COSC 1401

ITNW 2330 - FUNDAMENTALS OF INTERNETWORKING

3 Credits (3 hrs. lec., 1 hr. lab) Advanced concepts of internetworking to include internetworking devices and protocols. Prerequisite: ITSC 1401 and ITNW 1425; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

ITNW 2405 - NETWORK ADMINISTRATION

4 Credits (3 hrs. lec., 2 hrs. lab.) Topics include network components, user accounts and groups, network file systems, file system security, and network printing. Novell Certified. Prerequisite: ITSC 1405 and ITNW 1425; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

ITNW 2413 - NETWORKING HARDWARE

4 Credits (3 hrs. lec., 2 hrs. lab.) Maintain network hardware devices. Topics include network cables, servers, and workstations; network connectivity devices such as routers, hubs, bridges, gateways, repeaters, and uninterruptible power supplies; and other networking hardware devices. Novell Certified. Prerequisite: ITSC 1405; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing; Corequisite: ITNW 2405

ITNW 2421 - NETWORKING WITH TCP/IP

4 Credits (3 hrs. lec., 2 hrs. lab.) Set up, configure, use, and support Transmission Control Protocol/Internet Protocol (TCP/IP) on networking operating systems. Prerequisite: ITNW 2413; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

ITNW 2445 - WEB SERVER MANAGEMENT

4 Credits (3 hrs. lec., 2 hrs. lab.) Installation, configuration, and management of a NetWare Web Server. Topics include how to make Novell clients intranet or internet ready with the implementation of the IPX/IP gateway and how to use Novell Directory Services (NDS) to restrict user access to services through the gateway and access to the Web server. Prerequisite: ITNW 2405; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

ITNW 2452 - ADMINISTERING SQL SERVER

4 Credits (3 hrs. lec., 2 hrs. lab.) Administering SQL Server is a skills development course in the installation, configuration, administration, and troubleshooting of SQL Servers client/server database management system version. Prerequisite: None

ITNW 2453 - SUPPORTING PROXY SERVICES

4 Credits (3 hrs. lec., 2 hrs. lab.) An introduction to Network Proxy Services including installation, configuration, and troubleshooting basic architecture, controlling internet access, administration, configuring the cache, and methods of improving performance. Prerequisite: None

ITNW 2454 - INTERNET/INTRANET SERVER

4 Credits (3 hrs. lec., 2 hrs. lab.) Plan, identify, and establish domain relationships; discuss internal and external security issues; install, configure, and implement basic network services; and troubleshoot and maintain an existing server. Prerequisite: ITSE 2433; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing, MATH 0310
DESCRIPTION OF COURSES

ITNW 2459 - WEB SERVER SUPPORT AND MAINTENANCE
4 Credits (3 hrs. lec., 2 hrs. lab.) Instruction in the installation, configuration, and implementation of an Internet web server. Prerequisite: ITNW 2421

ITSC 1391 - SPECIAL TOPICS IN COMPUTER AND INFORMATION SCIENCES
3 Credits (2 hrs. lec., 3 hrs. lab.) Capstone course that draws from all the students' knowledge base in programming and visual arts for the gaming industry. Students will develop and implement a gaming environment programmatically, create a new game from source code, as well as edit and create a game interface from an existing gaming engine. Course addresses issues of game compatibility, including single and multi-player gaming environments, as well as gaming platform issues. Prerequisite: None

ITSC 1401 - INTRODUCTION TO COMPUTERS
4 Credits (3 hrs. lec., 2 hrs. lab.) Overview of computer information systems. Introduces computer hardware, software, procedures, and human resources. Explores integration and application in business and other segments in society. Fundamentals of computer problem-solving and programming may be discussed and applied. Examines applications and software relating to a specific curricular area. This course is equivalent to COSC 1401. Prerequisite/Corequisite: ENGL 0305 or 0316 and ENGL 0307 or 0326

ITSC 1402 - COMPUTER CONTROL LANGUAGE
4 Credits (3 hrs. lec., 2 hrs. lab.) Skill development in the use of system control language on mid-range/mainframe computers. Topics include command formats, file management, job scheduling, resource management, and utilities. Prerequisite: ITSC 1411

ITSC 1405 - INTRODUCTION TO PC OPERATING SYSTEMS
4 Credits (3 hrs. lec., 2 hrs. lab.) A study of personal computer operating systems. Topics include installation and configuration, file management, memory and storage management, control of peripheral devices, and use of utilities. Prerequisite: ITSC or COSC 1401; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

ITSC 1407 - UNIX OPERATING SYSTEM I
3 Credits (3 hrs. lec., 2 hrs. lab.) A study of the UNIX operating system including multi-user concepts, terminal emulation, use of system editors, basic UNIX commands, and writing script files. Topics include introductory systems management concepts. Prerequisite: ITSC 1401 or COSC 1401 and ITSC 1405; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

ITSC 1411 - AS/400 OPERATING SYSTEM I
4 Credits (3 hrs. lec., 2 hrs. lab.) A study of the AS/400 operating system including multi-user concepts, terminal emulation, use of system editor, basic AS/400 menus, commands, and help screens. Topics include introductory system management concepts and file management. Prerequisite: ITSC 1401

ITSC 1425 - PERSONAL COMPUTER HARDWARE
4 Credits (3 hrs. lec., 2 hrs. lab.) A study of current personal computer hardware including personal computer assembly and upgrading, setup and configuration, and troubleshooting. Prerequisite: ITSC or COSC 1401

ITSC 2331 - INTEGRATED SOFTWARE APPLICATIONS III
3 Credits (1 hr. lec., 4 hrs. lab.) Designed for advanced users with emphasis on a wide range of productivity tasks including complex assignments that require advanced formatting and functionality. ITSW 1301 and ITSW 1404 are recommended prior to enrolling in the course. Prerequisite: ITSC 1401; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

ITSC 2335 - APPLICATION PROBLEM SOLVING
3 Credits (2 hrs. lec., 4 hrs. lab.) Utilization of current application software to solve advanced problems and generate customized solutions, involving project and software specific to a specific curricular area. This is a capstone course for the E-Business Web Developer AAS Degree. Prerequisite: IMED 1316 or ITSC 1313; ITSW 1407; ITSE 1407 or 1431 or 1445 or 2417; ITSC 1407
**ITSC 2380 - COOPERATIVE EDUCATION - COMPUTER AND INFORMATION SCIENCES, GENERAL**

3 Credits (1 hr. lec., 20 hrs. ext.) Career-related activities encountered in the student’s area of specialization offered through an individualized agreement among the college, employer, and student. Under the supervision of the college and the employer, the student combines classroom learning with work experience. Includes a lecture component. This course may be used as the capstone course in the Computer Information Technology programs. Prerequisite: Enrollment in the Computer Information Technology AAS degree program; completion of 15 credits in the degree plan; approval of computer information technology coordinator.

**ITSC 2381 - COOPERATIVE EDUCATION**

3 Credits (1 hr. lec., 20 hrs. lab) Career-related activities encountered in the student’s area of specialization offered through an individualized agreement among the college, employer, and student. Under the supervision of the college and the employer, the student combines classroom learning with work experience. Includes a lecture component. This course may be used as the capstone course in the Computer Information Technology programs. Prerequisite: Enrollment in the Computer Information Technology AAS degree or certificate program; completion of 45 credits in degree plan; approval of computer information technology coordinator.

**ITSC 2437 - UNIX OPERATING SYSTEMS II**

4 Credits (3 hrs. lec., 2 hrs. lab) Continued study of the UNIX operating system commands. Includes additional scripting topics such as CGI or PERL. Prerequisite: ITSC 1407.

**ITSC 2439 - PERSONAL COMPUTER HELPDESK**

4 Credits (3 hrs. lec., 2 hrs. lab) Diagnosis and solution of user hardware and software related problems with on-the-job projects. Prerequisite: Completion of 16 hours of computer courses or departmental approval.

**ITSC 2442 - AS/400 OPERATING SYSTEM II**

4 Credits (3 hrs. lec., 2 hrs. lab) Advanced study of the AS/400 operating system. Topics include advanced concepts of systems management and communications, installation and maintenance of software, network security, and data integrity. Prerequisite: ITSC 1411.

**ITSE 1350 - SYSTEMS ANALYSIS & DESIGN**

3 Credits (3 hrs. lec.) Comprehensive introduction to the planning, design, and construction of computer information systems using the systems development life cycle and other appropriate design tools. Prerequisite: ITSE 1402 and one programming language; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing, Math 0308.

**ITSE 1356 - INTRODUCTION TO XML**

3 Credits (2 hrs. lec., 2 hrs. lab.) Introduction of skills and practice related to the Extensible Markup Language. Topics to be covered will include: elements, attributes, namespaces, entities, and what constitutes a well-formed document. Prerequisite: ITSE 1402.

**ITSE 1402 - COMPUTER PROGRAMMING**

4 Credits (3 hrs. lec., 2 hrs. lab.) Introduction to computer programming with emphasis on the fundamentals of structured design, development, testing, implementation, and documentation. Includes language syntax, data and file structures, input/output devices, and files. Prerequisite: ITSC/COSC 1401 or departmental approval; ENGL0305 or ENGL0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing, Math 0308.

**ITSE 1407 - INTRODUCTION TO C++ PROGRAMMING**

4 Credits (3 hrs. lec., 2 hrs. lab.) Introduction to computer programming using C++. Emphasis on the fundamentals of structured design with development, testing, implementation, and documentation. Includes language syntax, data and file structures, input/output devices and files. ITSC 1401 is recommended prior to enrolling. Prerequisite: ITSE 1402; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing, Math 0310.

**ITSE 1414 - INTRODUCTION TO RPG PROGRAMMING**

4 Credits (3 hrs. lec., 2 hrs. lab.) Introduction to computer programming using RPG. Emphasis on the fundamentals of structured design, development, testing, implementation and documentation. Includes language syntax, data and file structures, input/output devices, and files. ITSC 1401 is recommended prior to enrolling. Prerequisite: ITSE 1402; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing, Math 0310.
DESCRIPTION OF COURSES

ITSE 1418 - INTRODUCTION TO COBOL PROGRAMMING
4 Credits (3 hrs. lec., 2 hrs. lab.) Introduction to computer programming using COBOL. Emphasis on the fundamentals of structured design, development, testing, implementation, and documentation. Includes language syntax, data and file structures, input/output devices, and files. ITSC 1401 is recommended prior to enrolling. Prerequisite: ITSE 1402; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing, Math 0310

ITSE 1431 - INTRODUCTION TO VISUAL BASIC PROGRAMMING
4 Credits (3 hrs. lec., 2 hrs. lab.) Introduction to computer programming using Visual Basic. Emphasis on the fundamentals of structured design, development, testing, implementation, and documentation. Includes language syntax, data and file structures, input/output devices, and files. ITSC 1401 is recommended prior to enrolling. Prerequisite: ITSE 1402; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing, Math 0310

ITSE 1445 - INTRODUCTION TO ORACLE SQL
4 Credits (3 hrs. lec., 2 hrs. lab.) An introduction to the design and creation of relational databases using Oracle. Topics include storing, retrieving, updating, and displaying data using Structured Query Language (SQL). Prerequisite: ITSE 1402; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing, Math 0308

ITSE 1452 - SYSTEM DESIGN USING ORACLE TOOLS I
4 Credits (3 hrs. lec., 2 hrs. lab.) Skill development in the use of Designer 2000. Topics include modeling business functions and using Systems Modeler and Repository Object Navigator. Prerequisite: ITSE 1445; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing, Math 0308

ITSE 1491 - SPECIAL TOPICS: INTRODUCTION TO C# PROGRAMMING
4 Credits (3 hrs. lec., 2 hrs. lab.) Topics address recently identified current events, skills, knowledge and/or attitudes and behaviors pertinent to the technology or occupation and relevant to the professional development of the student. C# is a modern, object-oriented language that enables programmers to quickly build a wide range of applications for the Microsoft.NET environment. This course is a study of the design, coding, testing and documentation of computer programs using a current, personal computer C# compiler. All C# statements and operators are covered in lecture and used within practice programs and program assignments. This is a review of basic logic concepts, and various advanced logic concepts (selection logic and array) are mastered. Prerequisite: ITSE 1402, ITSE 1402; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing.

ITSE 1492 - SPECIAL TOPICS IN COMPUTER PROGRAMMING: ADVANCED C#
4 Credits (3 hrs. lec., 2 hrs. lab.) Topics address recently identified current events, skills, knowledge and/or attitudes and behaviors pertinent to the technology or occupation and relevant to the professional development of the student. Further application of C# programming techniques including subjects such as file access, abstract data structures, class inheritance and other advanced techniques. Prerequisite: ITSE 1491

ITSE 2380 - COOPERATIVE EDUCATION - COMPUTER PROGRAMMING
3 Credits (1 hr. lec., 20 hrs. ext.) Career-related activities encountered in the student's area of specialization offered through an individualized agreement among the college, employer, and student. Under the supervision of the college and the employer, the student combines classroom learning with work experience. Includes lecture component. This is a capstone course for the Mid-Range Computing Specialization, AAS Degree, the E-Business Web Developer Specialization, AAS Degree, the Programming Specialist Specialization, AAS Degree, and the Programming Specialist Certificate. Prerequisite: Meets requirements for last semester; enrolled in computer information technology AAS degree program; completion of 15 credits in degree plan; approval of computer information technology coordinator

ITSE 2413 - WEB AUTHORING
4 Credits (3 hrs. lec., 2 hrs. lab.) Instruction in designing and developing web pages that incorporate text, graphics, and other supporting elements using current technologies and authoring tools. Prerequisite: ITSC 1313 or IMED 1316; ENGL 0305 or ENGL 0316 AND
ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

ITSE 2417 - JAVA PROGRAMMING
4 Credits (3 hrs. lec., 2 hrs. lab.) Introduction to JAVA programming with object-orientation. Emphasis on the fundamental syntax and semantics of JAVA for applications and web applets. Prerequisite: ITSE 1402; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing, MATH 0310

ITSE 2429 - ORACLE NETWORK ADMINISTRATION AND PERFORMANCE TUNING
4 Credits (3 hrs. lab, 2 hrs. lec) Introduction to Oracle Client/Server connectivity and distributed databases including configuring, administering, tuning, troubleshooting Oracle SQL *Net and related tools. Prerequisite: ITSE 2456

ITSE 2431 - ADVANCED C++ PROGRAMMING
4 Credits (3 hrs. lec., 2 hrs. lab.) Further application of C++ programming techniques including subjects such as file access, abstract data structures, class inheritance, and other advanced techniques. Designed to strengthen the student's knowledge of computer programming. The student will develop correct, well-documented programs containing complex data structures; incorporate complex input/output file handling techniques; create classes and objects in programs; and incorporate advanced C++ techniques using a current personal computer C++ compiler. Prerequisite: ITSE 1407; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing, Math 0310

ITSE 2433 - IMPLEMENTING A DATABASE MICROSOFT SQL SERVER
4 Credits (3 hrs. lec., 2 hrs. lab.) Skills development in the implementation of a database solution using Microsoft SQL Server client/server database management system. Prerequisite: ITSW 1407 and ITSE 1402

ITSE 2443 - ADVANCED WINDOWS PROGRAMMING
4 Credits (3 hrs. lec., 2 hrs. lab.) Further applications of windows programming techniques, including file access methods, data structures and modular programming, program testing and documentation. Prerequisite: ITSE 1431 and 2449; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing, MATH 0310

ITSE 2444 - ORACLE DATABASE STRUCTURE AND WAREHOUSING
4 Credits (3 hrs. lec., 2 hrs. lab.) A practical application course for modeling and designing an Oracle data warehouse using case studies. This is a capstone course. Prerequisite: ITSE 2429; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing, Math 0308

ITSE 2449 - ADVANCED VISUAL BASIC PROGRAMMING
4 Credits (3 hrs. lec., 2 hrs. lab.) Further applications of programming techniques using Visual Basic. Topics include file access methods, data structures and modular programming, program testing and documentation. Prerequisite: ITSE 1431; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing, Math 0310

ITSE 2450 - MASTERING ENTERPRISE DEVELOPMENT USING MICROSOFT VISUAL BASIC
4 Credits (3 hrs. lec., 2 hrs. lab.) In-depth development of client/server solutions using component object modeling (COM). Prerequisite: ITSE 2449; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing, MATH 0310

ITSE 2451 - ADVANCED COBOL PROGRAMMING
4 Credits (3 hrs. lec., 2 hrs. lab.) Further applications of programming techniques using COBOL, including file access methods, data structures and modular programming, program testing and documentation. Prerequisite: ITSE 1418; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing, Math 0310
DESCRIPTION OF COURSES

ITSE 2452 - SYSTEM DESIGN USING ORACLE TOOLS II
4 Credits (3 hrs. lec., 2 hrs. lab.) A continuation of System Design Using Oracle Tools I. Topics include creating a business information model, transforming the analysis model into design level definitions, refining the data and application designs, and generating database objects using Oracle Developer and Web Server. Prerequisite: ITSE 1452; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing, Math 0308

ITSE 2454 - ADVANCED ORACLE SQL
4 Credits (3 hrs. lec., 2 hrs. lab.) A continuation of Oracle SQL. Topics include hierarchical queries, set based queries, correlated subqueries, scripting, and scripting generation. Prerequisite: ITSE 1445; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing, Math 0308

ITSE 2456 - ORACLE DATABASE ADMINISTRATION I
4 Credits (3 hrs. lec., 2 hrs. lab.) Fundamentals of tasks and functions required of a database administrator using Oracle. Prerequisite: ITSE 1445; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing, Math 0308

ITSE 2458 - ORACLE DATABASE ADMINISTRATION II
4 Credits (3 hrs. lec., 2 hrs. lab.) A continuation of Oracle Database Administration I. Topics include recovery procedures, logical backups, standby database capabilities, and performance tuning of the Oracle Server. Common performance problems and the use of diagnostic tools to troubleshoot and optimize throughput will be discussed. Prerequisite: ITSE 2456; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing, Math 0308

ITSE 2459 - ADVANCED COMPUTER PROGRAMMING
4 Credits (3 hrs. lec., 2 hrs. lab.) Further applications of programming techniques. Topics include file access methods, data structures and modular programming, program testing and documentation. Prerequisite: ITSE 1402 or COSC 1309; one lower-level programming course; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing, Math 0308

ITSE 2471 - VISUAL BASIC FOR THE WEB
4 Credits (3 hrs. lec., 2 hrs. lab.) Introduce beginning Web developers to the fundamentals of Web application design by using Microsoft Visual Basic .NET. Focus on using Microsoft Visual Studio® .NET to create an ASP. NET Web application that delivers dynamic content to a Web site. Introduce students to web based multi-tier applications. Use Visual Basic .NET in conjunction with ActiveX Data objects (ADO.NET) to access data across the internet. Prerequisite: ITSE 1431

ITSE 2472 - WEB APPLICATION DEVELOPMENT
4 Credits (3 hrs. lec., 2 hrs. lab.) Build dynamic, interactive web sites utilizing web application development tools. Focus is on design techniques, execution of web programs, and implementation of credit card authorization techniques. Prerequisite: IMED 1316 or ITSC 1313; ITSW 1407; ITSE 1407, 1431, 1445 or 2417; ITSC 1407; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing, MATH 0310

ITSW 1301 - INTRODUCTION TO WORD PROCESSING
3 Credits (1 hr. lec., 4 hrs. lab) An overview of the production of documents, tables, and graphics, including advanced applications in merging, macros, desktop publishing, and extensive formatting for technical documents. Prerequisite: Basic keyboarding proficiency

ITSW 1310 - INTRODUCTION TO PRESENTATION GRAPHICS SOFTWARE
3 Credits (2 hrs. lec., 3 hrs. lab.) Instruction in the utilization of presentation software to produce multimedia presentations. Graphics, text, sound, animation and/or video may be used in presentation development. Topics will include presentation design principles, effective color schemes and creative transition effects. Guidelines for oral and written presentations are emphasized. Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

ITSW 1404 - INTRODUCTION TO SPREADSHEETS
4 Credits (3 hrs. lec., 2 hrs. lab.) Instruction in the concepts, procedures, and application of electronic spreadsheets. Prerequisite: ITSC or COSC 1401; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing
ITSW 1407 - INTRODUCTION TO DATABASE
4 Credits (3 hrs. lec., 2 hrs. lab.) Introduction to database theory and the practical applications of a database. Prerequisite: ITSC or COSC 1401; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

ITSW 2434 - ADVANCED SPREADSHEETS
4 Credits (3 hrs. lec., 2 hrs. lab.) Designed to provide an understanding of advanced functionality of electronic spreadsheets. Prerequisite: ITSW 1404; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

ITSW 2437 - ADVANCED DATABASES
4 Credits (3 hrs. lec., 2 hrs. lab.) Designed to provide an understanding of advanced functionality of databases. Prerequisite: ITSW 1407 and ITSE 1402; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

ITSY 1442 - INFORMATION TECHNOLOGY SECURITY
4 Credits (3 hrs. lec., 2 hrs. lab.) Instruction in security for network hardware, software, and data, including physical security, backup procedures; relevant tools; encryption; and protection from viruses. Prerequisites: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

ITSY 2400 - OPERATING SYSTEM SECURITY
4 Credits (3 hrs. lec., 2 hrs. lab.) Safeguard computer operating systems by demonstrating server support skills and designing and implementing a security system. Identify security threats and monitor network security implementations. Use best practices to configure operating systems to industry security standards. Prerequisites: ITSC 1407; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

ITSY 2401 - FIREWALLS AND NETWORK SECURITY
4 Credits (3 hrs. lec., 2 hrs. lab.) Identify elements of firewall design, types of security threats and responses to security attacks. Use best practices to design, implement, and monitor a network security plan. Examine security incident postmortem reporting and ongoing network security activities. Prerequisites: ITSC 1407 and 2437; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

ITSY 2441 - SECURITY MANAGEMENT AND PRACTICES
4 Credits (3 hrs. lec., 2 hrs. lab.) In-depth coverage of security management practices, including asset evaluation and risk management; cyber law and ethics issues; policies and procedures; business recovery and business continuity planning; network security design; and developing and maintaining a security plan. Prerequisites: ITSY 2400 and 2401; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

ITSY 2442 - INCIDENT RESPONSE AND HANDLING
4 Credits (3 hrs. lec., 2 hrs. lab.) In-depth coverage of incident response and incident handling, including identifying sources of attacks and security breaches; analyzing security logs; recovering the system to normal; performing postmortem analysis; and implementing and modifying security measures. Prerequisites: ITSY 2400 and 2401; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

ITSY 2443 - COMPUTER SYSTEM FORENSICS
4 Credits (3 hrs. lec., 2 hrs. lab.) In-depth study of system forensics including methodologies used for analysis of computer security breaches. Gather and evaluate evidence to perform postmortem analysis of a security breach. Prerequisites: ITSY 2400 and 2401; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

JAPN 1411 - BEGINNING JAPANESE I
4 Credits (3 hrs. lec., 2 hrs. lab.) Beginner’s pronunciation, oral practice and dictation. Conversation, use of recordings for ear training, basic principles of grammar, simple exercises in composition, easy reading which includes cultural material. (1603025113) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

JAPN 1412 - BEGINNING JAPANESE II
4 Credits (3 hrs. lec., 2 hrs. lab.) A continuation of JAPN 1411 with increased emphasis on comprehension, speaking, reading and writing. Intensive drills to increase vocabulary and knowledge of structure. (1603025113) Prerequisite: JAPN 1411 or 2 years high school language in the preceding two years; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326,
DESCRIPTION OF COURSES

OR higher level course (ENGL 1301), OR placement by testing

KINE 1111 - FITNESS FOR LIFE I

1 Credit (3 hrs. lab.) Fitness for Life I is a cardiopulmonary fitness course in which students participate in a self-paced walking, jogging, or stationary cycling program. Muscular endurance and flexibility exercises are presented. The course includes an introduction to facts, concepts, and application of wellness principles, such as nutrition, diet and weight control. (3601085128) Prerequisite/Corequisite: ENGL 0305 or 0316 and ENGL 0307 or 0326

KINE 1112 - WEIGHT TRAINING I

1 Credit (3 hrs. lab.) This course emphasizes the development of muscular strength and endurance, cardiovascular fitness and flexibility. Current information and research in the areas of nutrition, proper training techniques, workout organizations, complementary exercises and additional wellness principles are presented and integrated into this physical activity course. (3601085128) Prerequisite/Corequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326

KINE 1113 - JOGGING I

1 Credit (3 hrs. lab.) Jogging I is a cardiorespiratory fitness course which includes instruction and practice in jogging technique and program setup. Flexibility and strength exercises are included with an introduction to wellness concepts including nutrition, disease prevention, weight control and other aspects of a healthy lifestyle. (3601085128) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

KINE 1114 - AEROBICS I

1 Credit (3 hrs. lab.) Aerobics is a group activity class that may include the following: step aerobics, circuit training, sports conditioning, body toning, pilates, yoga, high/low impact, cardio-kickboxing, aerobic dance and interval training. (3601085128) Prerequisite/Corequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326

KINE 1115 - BICYCLING I *

1 Credit (3 hrs. lab.) Bicycling I is an introductory course in cycling designed to teach the basic techniques and safety aspects of cycling, as a method of improving cardiovascular endurance. Wellness principles are presented and integrated into this physical activity course. (3601085128) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

KINE 1116 - AQUA AEROBICS I

1 Credit (3 hrs. lab.) Aqua Aerobics I is an introductory course designed to improve cardiorespiratory endurance through a variety of exercises in a pool environment. Flexibility, body composition, basic nutrition, and weight control concepts are addressed. (3601085128) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

KINE 1118 - INLINE SKATING I *

1 Credit (3 hrs. lab.) Inline Skating I is an introductory course which provides basic instruction in the activity of inline skating. Cardiovascular endurance and additional fitness concepts are included. Wellness principles are presented and integrated into this physical activity course. (3601085128) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

KINE 1121 - BADMINTON I *

1 Credit (3 hrs. lab.) This course offers an introduction to the history, rules, basic strokes, and strategies in singles and doubles play in badminton. Students will participate in intra-class games and other skill development activities. (3601085128) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

KINE 1122 - BOWLING I *

1 Credit (3 hrs. lab.) This course offers basic beginning skills, safety, scorekeeping techniques, rules, and strategies of bowling. Students practice skills through drills and competitive games. (3601085128) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

KINE 1123 - GOLF I *

1 Credit (3 hrs. lab.) Golf I emphasizes basic golf skills, rules, scoring, etiquette, and terminology. (3601085128) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing
KINE 1124 - RACQUETBALL I *
1 Credit (3 hrs. lab.) Racquetball I is a beginning course designed to teach the novice player the basic strokes, strategies, and the rules of the game. (3601085128) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

KINE 1125 - TENNIS I *
1 Credit (3 hrs. lab.) Tennis I introduces the student to the rules, scoring, and fundamental techniques for beginners. The course includes participation by skill levels for singles and doubles play. (3601085128) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

KINE 1126 - GYMNASTICS I *
1 Credit (3 hrs. lab.) Gymnastics I is an introductory course in which the student will perform basic skills and techniques on women's and men's apparatus and tumbling. Terms, concepts of physics, and safety aspects are included. (3601085128) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

KINE 1127 - KARATE I *
1 Credit (3 hrs. lab.) This beginning course allows students to safely practice the physical and mental aspects of martial arts. Students are presented with the history, etiquette, meditation and self-defense techniques. (3601085128) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

KINE 1128 - YOGA I
1 Credit (3 hrs. lab.) This introductory course offers practice in basic Yoga. Students study history and basic terms along with philosophical and physiological principles and the movements of Yoga. (3601085123) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

KINE 1130 - TAI CHI I *
1 Credit (3 hrs. lab.) This introductory course offers practice in the simplified styles and forms of Tai Chi. Students study history and basic terms along with philosophical and physiological principles and the movements of Tai Chi. (3601085128) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

KINE 1131 - BASKETBALL I *
1 Credit (3 hrs. lab.) This course includes the fundamental skills and strategies, history, rules and terminology of basketball. The course includes participation in game situations. (3601085128) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

KINE 1132 - VOLLEYBALL I *
1 Credit (3 hrs. lab.) Volleyball I includes instruction and practice of beginning volleyball techniques and skills, with introduction to the rules, offensive and defensive strategy, and safety aspects. (3601085128) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

KINE 1133 - SOFTBALL I *
1 Credit (3 hrs. lab.) Students will receive instruction in the following fundamental skill areas: throwing, batting, fielding, and base running. The rules, safety, offense and defense strategies and basic terminology will be emphasized through game play. (3601085128) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

KINE 1134 - SOCCER I *
1 Credit (3 hrs. lab.) Covers fundamental skills and strategies, history, rules and terminology of soccer. The course includes participation in game situations. (3601085128) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

KINE 1135 - BASEBALL I *
1 Credit (3 hrs. lab.) Baseball I emphasizes instruction and practice of beginning baseball skills, with introduction to the rules, scorekeeping, and offensive

* This class satisfies the requirements of the wellness core. This core will emphasize the health-related components of fitness, wellness for a lifetime, and disease prevention.
and defensive strategies. The course includes participation in game situations. (3601085128) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

KINE 1141 - BALLET I *

1 Credit (3 hrs. lab.) This dance technique course introduces students to beginning ballet techniques at barre and center. Students learn basic terms, general history of this classical dance form and create original combination steps. Not transferable as a fine arts credit. (3601145123) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

KINE 1143 - MODERN DANCE I *

1 Credit (3 hrs. lab.) This beginning level of modern dance technique includes basic terms, history and technique of this creative style of dance. Using artistic free form movements, the students create an original combination of steps. Not transferable as a fine arts credit. (3601145123) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

KINE 1145 - JAZZ DANCE I *

1 Credit (3 hrs. lab.) Students learn and practice beginning jazz techniques. Students will be introduced to basic terms and general history of jazz dance forms. Movement patterns and concepts are used from various styles including lyrical, musical, comedy, fun, street, and Afro-Haitian dance styles. Not transferable as a fine arts credit. (3601145123) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

KINE 1146 - COUNTRY & WESTERN DANCE I *

1 Credit (3 hrs. lab.) Country & Western Dance I is an introductory dance technique course. It emphasizes instruction and practice of beginning country western techniques including the two-step, polka, waltz, Cot-ton-eyed Joe, Schottische, jitterbug, and line dances. (3601145123) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

KINE 1147 - SOCIAL AND POPULAR DANCE

1 Credit (3 hrs. lab.) Instruction and practice in dances that are currently popular. Basic steps and variations, techniques of leading and following are included. Emphasis on “traditional”: Fox Trot, Waltz, Jitterbug, and Polka in Fall semester. Emphasis on Latin dances: Salsa, Tango, Samba, Meringue in the Spring semester. (3601145130) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

KINE 1151 - BASIC SCUBA DIVING *

1 Credit (3 hrs. lab.) Basic SCUBA Diving is an aquatic activity skill course with emphasis on instruction and practice of basic techniques of SCUBA. It includes an introduction to the safety aspects and concepts of SCUBA. Certification is included in the course, but not required for completion of the course for credit. (3601085323) Prerequisite: Ability to swim; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

KINE 1152 - ADVANCED SCUBA DIVING *

1 Credit (3 hrs. lab.) Advanced SCUBA Diving involves participation in and demonstration of advanced SCUBA techniques, including specialty training in compass and natural navigation, search and recovery, limited visibility and night diving, and computer diving. (3601085323) Prerequisite: KINE 1151; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

KINE 1153 - LIFEGUARD TRAINING *

1 Credit (3 hrs. lab.) Lifeguard training includes instruction in all necessary lifeguard/lifesaving techniques to certify students as specified by the American Red Cross. (3601085323) Prerequisite: Ability to swim; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

KINE 1154 - SCUBA DIVEMASTER

1 Credit (3 hrs. lab.) Preparation for Divemaster certification. This course includes Stress and Rescue, First Aid, CPR certification and other specialty training necessary for entering a professional Divemaster program. (3601085323) Prerequisite: KINE 1151; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

* This class satisfies the requirements of the wellness core. This core will emphasize the health-related components of fitness, wellness for a lifetime, and disease prevention.
KINE 1171 - VENTURE DYNAMICS I *
1 Credit (3 hrs. lab.) Venture Dynamics I is an outdoor adventure course with emphasis on instruction and practice of basic skills in a variety of outdoor adventure activities, during which the student learns the basic skills of interpersonal and intrapersonal dynamics. (3601085128) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

KINE 1172 - BACKCOUNTRY EXPEDITIONING I *
1 Credit (3 hrs. lab.) This is an experiential outdoor adventure course with emphasis on the instruction in and practical aspects of extended travel and living in wilderness environments. Topics include expedition behavior, group dynamics, nutrition, health and sanitation, navigation, and specialized travel techniques. (3601085128) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

KINE 1173 - ROCK CLIMBING I *
1 Credit (3 hrs. lab.) Rock Climbing I is an outdoor activity course designed to teach the basic skills, safety techniques, concepts, and equipment used in beginning rock climbing. (3601085128) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

KINE 1174 - HORSEMANSHIP *
1 Credit (3 hrs. lab.) Horsemanship is a beginning course that guides the student through the proper execution of horseback riding techniques, safety principles for horse and rider, and proper care of the horse and equipment. (3601085128) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

KINE 1180 - SWIMMING I *
1 Credit (3 hrs. lab.) Swimming I is an aquatic skill course that teaches the basic swimming skills, strokes, and safety techniques to instill confidence in the beginning swimmer. (3601085128) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

KINE 1181 - CANOEING I *
1 Credit (3 hrs. lab.) Canoeing is an aquatic activity skill course with emphasis on instruction, safety, and practice of beginning canoeing techniques. (3601085128) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

KINE 1301 - FOUNDATIONS OF PHYSICAL EDUCATION/KINESIOLOGY
3 Credits (3 hrs. lec.) Foundations of Physical Education/Kinesiology is an orientation lecture course for physical education/kinesiology majors and minors. It includes information about the nature and foundations of the discipline, history of the field, career preparation and opportunities, and issues and challenges confronting the profession. This course is intended for majors and will not fulfill the KINE activity requirement. (3105015223) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

KINE 1304 - PERSONAL HEALTH
3 Credits (3 hrs. lec.) Personal Health is a lecture course designed for the health-education major or as a general elective. Fundamentals of personal health will be presented, including topics such as nutrition, mental health, stress management, drugs, and maintenance of physical health and fitness. This course is intended for majors and will not fulfill the KINE activity requirement. (5103015116) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

KINE 1306 - FIRST AID AND SAFETY
3 Credits (3 hrs. lec.) This course emphasizes the principles of first aid including bleeding control, splinting, and CPR for the adult, child and infant. It is designed for students to obtain American Red Cross certification or American Heart Association in First Aid and CPR. It may be taken as an elective. However, it is required for Physical Education/Kinesiology majors. This course will not fulfill the KINE activity requirement. (5103015316) Prerequisite/Corequisite: ENGL 0305 or 0316 and ENGL 0307 or 0326

KINE 1308 - SPORTS OFFICIATING I
3 Credits (2 hrs. lec., 2 hrs. lab.) Sports Officiating I is designed to teach the rules and mechanics of umpiring or officiating one of the following sports:
DESCRIPTION OF COURSES

baseball; softball; or volleyball. Certification to umpire or officiate in the Texas Association of Sports Officials or comparable associations is a major objective of this course. (1202045109) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

KINE 1309 - SPORTS OFFICIATING II

3 Credits (2 hrs. lec., 2 hrs. lab.) Sports Officiating II is designed to teach the rules and mechanics of officiating one of the following sports: basketball or football. Certification to officiate in the Texas Association of Sports Officials or comparable associations is a major objective of this course. (1202045109) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

KINE 1331 - KINESIOLOGY FOR ELEMENTARY EDUCATION MAJORS

3 Credits (3 hrs. lec.) Kinesiology for elementary education majors is a state required three-hour course for Kinesiology (physical education) majors and minors. Theoretical principles, including the four domains of movement, school observations, recognizing the different approaches needed for teaching movement to children vs. adults and understanding the realistic issues confronting the contemporary elementary educator are discussed. (3105015223) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

KINE 1336 - OUTDOOR LEADERSHIP I

3 Credits (3 hrs. lec.) Outdoor Leadership I is designed to enhance the skills and understanding of outdoor pursuits through an examination of the role and responsibilities of an outdoor leader. Topics include risk management, trip planning, emergency plans/prevention, decision making and judgment. This course is intended for majors and will not fulfill the KINE activity requirement. (3101015123) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

KINE 1337 - OUTDOOR LEADERSHIP II

3 Credits (3 hrs. lec.) This course is an extension of KINE 1336 designed for the development of advanced outdoor leadership skills. This course is intended for majors and will not fulfill the KINE activity requirement. (3101015123) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

KINE 2111 - FITNESS FOR LIFE II

1 Credit (3 hrs. lab.) Continuation of KINE 1111. Muscular endurance and flexibility are assessed. Students apply concepts of wellness principles, including nutrition, diet, and weight control, and fitness concepts of cardio respiratory endurance, muscular strength, muscular endurance, and flexibility. (3601085128) Prerequisite: KINE 1111; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

KINE 2112 - WEIGHT TRAINING II

1 Credit (3 hrs. lab.) Weight Training II is a continuation of KINE 1112, in which students apply muscular strength, flexibility, endurance and wellness concepts learned in KINE 1112. (3601085128) Prerequisite: KINE 1112; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

KINE 2113 - JOGGING II

1 Credit (3 hrs. lab.) Jogging II is a continuation of Jogging I with students increasing their fitness level. Students increase knowledge and apply the wellness concepts. Participation in local fun runs is encouraged as well as learning to set up specific training programs. (3601085128) Prerequisite: KINE 1113; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

KINE 2114 - AEROBICS II

1 Credit (3 hrs. lab.) Aerobics II is a continuation of Aerobics I structured for cardiovascular fitness, muscular endurance, muscular strength, and flexibility. Wellness principles are presented and integrated into this physical activity course. (3601085128) Prerequisite: KINE 1114; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

KINE 2115 - BICYCLING II *

1 Credit (3 hrs. lab.) Bicycling II is a continuation of Bicycling I involving advanced cycling techniques. Wellness principles are presented and integrated into this physical activity course. (3601085128) Prerequisite: KINE 1115; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing
KINE 2116 - AQUA AEROBICS II
1 Credit (3 hrs. lab.) Aqua Aerobics II is a continuation of Aqua Aerobics I. (3601085128) Prerequisite: KINE 1116; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

KINE 2118 - INLINE SKATING II *
1 Credit (3 hrs. lab.) Inline Skating II is a continuation of KINE 1118 in which the student learns advanced techniques of Inline Skating. Cardiovascular endurance and additional fitness concepts are included. (3601085128) Prerequisite: KINE 1118; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

KINE 2121 - BADMINTON II *
1 Credit (3 hrs. lab.) This intermediate skill activity builds upon the basics of Badminton I. Students practice advanced skills and apply knowledge of intermediate strategies through competitive play. (3601085128) Prerequisite: KINE 1121; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

KINE 2122 - BOWLING II *
1 Credit (3 hrs. lab.) This intermediate bowling course is designed to increase students skill level through drills, skills, and practice. There are applications of intermediate skill level strategies. (3601085128) Prerequisite: KINE 1122; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

KINE 2123 - GOLF II *
1 Credit (3 hrs. lab.) Golf II is an advanced course emphasizing golf techniques, skills, and mental preparation in competitive situations. (3601085128) Prerequisite: KINE 1123; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

KINE 2124 - RACQUETBALL II *
1 Credit (3 hrs. lab.) Racquetball II is a continuation of Racquetball I involving advanced techniques and strategies of the game needed for a higher level of competition. (3601085128) Prerequisite: KINE 1124; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

KINE 2125 - TENNIS II *
1 Credit (3 hrs. lab.) Tennis II is designed to develop and improve skill levels in serving, forehand and backhand drives, lobs, and volleys. Performance strategies for both singles and doubles are drilled. (3601085128) Prerequisite: KINE 1125; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

KINE 2126 - GYMNASTICS II *
1 Credit (3 hrs. lab.) Gymnastics II is a course in which students will practice intermediate men's and women's gymnastic and tumbling techniques and skills. Students will apply knowledge of terms, safety, and concepts of physics. (3601085128) Prerequisite: KINE 1126; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

KINE 2127 - KARATE II *
1 Credit (3 hrs. lab.) Students will work on intermediate karate skills and techniques and participate in the leadership aspects of this sport. (3601085128) Prerequisite: KINE 1127; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

KINE 2128 - YOGA II *
1 Credit (3 hrs. lab.) This course is a continuation of Yoga I. The course will offer intermediate level practice of Yoga. Students will study the history and intermediate terms along with philosophical principles of the movements and Yoga as a concept. (3601085123) Prerequisite: KINE 1128 or instructor approval; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

KINE 2130 - TAI CHI II *
1 Credit (3 hrs. lab.) This course builds upon the styles and forms of Tai Chi I. Students are introduced to Tai Chi sword. Students will apply the physiological principles and philosophies of Tai Chi. (3601085128) Prerequisite: KINE 1130; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

* This class satisfies the requirements of the wellness core. This core will emphasize the health-related components of fitness, wellness for a lifetime, and disease prevention.
DESCRIPTION OF COURSES

KINE 2131 - BASKETBALL II *
1 Credit (3 hrs. lab.) Basketball II emphasizes instruction and practice of intermediate basketball techniques and skills. The course includes extensive participation in game situations to increase knowledge of offensive and defensive strategy, teamwork, and safety aspects of the game. (3601085128) Prerequisite: KINE 1131; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing.

KINE 2132 - VOLLEYBALL II *
1 Credit (3 hrs. lab.) Volleyball II is a continuation of Volleyball I with emphasis on the instruction and practice of intermediate volleyball techniques and skills. The course includes extensive practice of intermediate skills and participation in game situations with application of rules, offensive and defensive strategy, teamwork, and safety aspects. (3601085128) Prerequisite: KINE 1132; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing.

KINE 2133 - SOFTBALL II *
1 Credit (3 hrs. lab.) Students will receive instruction at the intermediate level of skill development in throwing, batting, fielding, and base running. Students will apply knowledge of offense and defense strategies through teamwork and competitive interclass play. (3601085128) Prerequisite: KINE 1133; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing.

KINE 2134 - SOCCER II *
1 Credit (3 hrs. lab.) Soccer II is a continuation of Soccer I focusing on skills for individual improvement. Students practice officiating games utilizing knowledge of game rules, history of the game, and rules of tournament play. (3601085128) Prerequisite: KINE 1134; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing.

KINE 2135 - BASEBALL II *
1 Credit (3 hrs. lab.) Students will receive instruction at the intermediate level of skill development in throwing, batting, fielding, and base running. Students will apply knowledge of baseball strategies through teamwork and competitive play. (3601085128) Prerequisite: KINE 1135; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing.

KINE 2141 - BALLET II *
1 Credit (3 hrs. lab.) This course is a continuation of Ballet I. The course will be intermediate level ballet technique at the barre and in center. Students will learn advanced terms and history of this classical form and create an original piece of choreography. Not transferable as a fine arts credit. (3601085123) Prerequisite: KINE 1141 or instructor approval; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing.

KINE 2146 - COUNTRY & WESTERN DANCE II
1 Credit (3 hrs. lab.) Country & Western Dance II is a continuation of Country & Western Dance I, in which the student learns popular advanced steps. (3601145123) Prerequisite: KINE 1146; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing.

KINE 2147 - SOCIAL AND POPULAR DANCE II *
1 Credit (3 hrs. lab.) This course is a continuation of Social & Popular Dance I. The course will offer intermediate level of instruction and practice in dances that are currently popular. Intermediate steps, variations, techniques of leading and following are included. Emphasis will be on Fox Trot, Waltz, Jitterbug, Polka, Salsa, Tango, and Meringue. (3601085123) Prerequisite: KINE 1147 or instructor approval; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing.

KINE 2171 - VENTURE DYNAMICS II *
1 Credit (3 hrs. lab.) Venture Dynamics II is an extension of Venture Dynamics I with emphasis on instruction and practice of a variety of different outdoor adventure activities. (3601085128) Prerequisite: KINE 1171; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing.

KINE 2172 - BACKCOUNTRY EXPEDITIONING II *
1 Credit (3 hrs. lab.) This course is an extension of KINE 1172, with an emphasis on advanced concepts and theories associated with traveling and living in the outdoor environment. (3601085128) Prerequisite: KINE 1172; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing.
KINE 2173 - ROCK CLIMBING II *
1 Credit (3 hrs. lab.) Rock Climbing II is a continuation of Rock Climbing I, designed to teach advanced topics and techniques of rock climbing. (3601085128) Prerequisite: KINE 1173; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

KINE 2174 - ADVANCED HORSEMANSHIP *
1 Credit (3 hrs. lab.) This course will provide instruction on advanced execution of horseback riding techniques, detailed knowledge of horseback riding, equine training, care, and safety aspects needed to enjoy a more advanced level of horsemanship. (3601085128) Prerequisite: KINE 1174; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

KINE 2180 - SWIMMING II *
1 Credit (3 hrs. lab.) Swimming II is a continuation of Swimming I in which the student learns advanced strokes with an emphasis on lap swimming. (3601085128) Prerequisite: KINE 1180; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

LGLA 1219 - LEGAL ETHICS AND PROFESSIONAL RESPONSIBILITY
2 Credits (2 hrs. lec.) This course covers the moral and legal responsibilities and duties that a member of the legal profession owes to the public, the court, clients, and other professional colleagues. Includes a review of canons, codes and rules of professional responsibility. Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

LGLA 1303 - LEGAL RESEARCH
3 Credits (3 hrs. lec.) This course provides a working knowledge of the fundamentals of effective legal research. Topics include law library techniques, computer assisted legal research, briefs, and legal memoranda. Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

LGLA 1307 - INTRODUCTION TO LAW AND LEGAL PROFESSIONS
3 Credits (3 hrs. lec.) This course provides an overview of the law and the legal professions. Topics include legal concepts, systems, and terminology; ethical obligations and regulations; professional trends and issues with particular emphasis on the paralegal. Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

LGLA 1323 - EMPLOYMENT LAW
3 Credits (3 hrs. lec.) This course presents fundamental concepts of, and the paralegal’s role in, employment and labor law. Topics include contracts of employment, governmental regulations, discrimination issues, and worker’s compensation. Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

LGLA 1341 - ADMINISTRATIVE LAW
3 Credits (3 hrs. lec.) This course presents fundamental concepts of administrative law and procedure in governmental agencies at all levels with emphasis on the paralegal’s role in the administrative process. Topics include creation of government agencies, operation, rule making and adjudication. Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

LGLA 1343 - BANKRUPTCY LAW
3 Credits (3 hrs. lec.) This course presents fundamental concepts of bankruptcy law and procedure with emphasis on the paralegal’s role. Topics include individual and business liquidation and reorganization. Prerequisites ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

LGLA 1345 - CIVIL LITIGATION
3 Credits (3 hrs. lec.) This course presents fundamental concepts and procedures of civil litigation with emphasis on the paralegal’s role. Topics include pretrial, trial and post-trial phases of litigation. Prerequisite: LGLA 1307; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

* This class satisfies the requirements of the wellness core.
This core will emphasize the health-related components of fitness, wellness for a lifetime, and disease prevention.
DESCRIPTION OF COURSES

LGLA 1349 - CONSTITUTIONAL LAW

3 Credits (3 hrs. lec.) This course provides an overview of the United States Constitution and its articles, amendments, and judicial interpretations. Topics include separation of powers, checks and balances, governmental structures and process, and individual rights in relation to government. Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

LGLA 1353 - WILLS, TRUSTS AND PROBATE ADMINISTRATION

3 Credits (3 hrs. lec.) This course presents fundamental concepts of the law of wills, trusts, and probate administration with emphasis on the paralegal’s role. Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

LGLA 1355 - FAMILY LAW

3 Credits (3 hrs. lec.) This course presents fundamental concepts of family law with emphasis on the paralegal’s role. Topics include formal and informal marriages, divorce, annulment, marital property, and the parent-child relationship. Prerequisites: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

LGLA 1359 - IMMIGRATION LAW

3 Credits (3 hrs. lec.) This course presents fundamental concepts of immigration law with emphasis on the paralegal’s role. Topics include substantive and procedural law related to visa applications, deportation, naturalization, and citizenship. Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

LGLA 1371 - INTELLECTUAL PROPERTY

3 Credits (3 hrs. lec.) Intellectual property is the study of patents, copyrights and trademarks. This course will prepare the paralegal student to assist in the preparation of filing of trademarks, patents and copyrights, as well as the maintenance and research related to this field. Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

LGLA 2301 - ENVIRONMENTAL LAW

3 Credits (3 hrs. lec.) This course presents fundamental concepts of environmental law with emphasis on the paralegal’s role. Topics include terminology, creation of environmental law, and the application of statutes and government regulations to specific fact situations. Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

LGLA 2303 - TORTS AND PERSONAL INJURY LAW

3 Credits (3 hrs. lec.) This course presents fundamental concepts of tort law with emphasis on the paralegal’s role. Topics include intentional torts, negligence and strict liability. Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

LGLA 2305 - INTERVIEWING AND INVESTIGATING

3 Credits (3 hrs. lec.) This course is a study of principles, methods, and investigative techniques used to locate, gather, document, and manage information. Emphasis on developing interviewing and investigative skills to prepare the paralegal to communicate effectively while recognizing ethical problems. Prerequisite: LGLA 1307; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

LGLA 2309 - REAL PROPERTY

3 Credits (3 hrs. lec.) This course presents fundamental concepts of real property law with emphasis on the paralegal’s role. Topics include the nature of real property, rights and duties of ownership, land use, voluntary and involuntary conveyances, and the recording of and searching for real estate documents. Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

LGLA 2311 - BUSINESS ORGANIZATIONS

3 Credits (3 hrs. lec.) This course presents basic concepts of business organizations with emphasis on the paralegal’s role. Topics include law of agency, sole proprietorships, forms of partnerships, corporations, and other emerging business entities. Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing
LGLA 2313 - CRIMINAL LAW AND PROCEDURE
3 Credits (3 hrs. lec.) This course introduces the criminal justice system including procedures from arrest to final disposition, principles of federal and state law, and the preparation of pleadings and motions. Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

LGLA 2315 - OIL AND GAS LAW
3 Credits (3 hrs. lec.) This course presents fundamental concepts of oil and gas law including the relationship between landowners and oil and gas operators, government regulation, and documents used in the industry. Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

LGLA 2331 - ADVANCED LEGAL RESEARCH AND WRITING
3 Credits (3 hrs. lec) This course builds upon skills acquired in prior legal research and writing courses including computerized research techniques and preparation of complex legal documents such as briefs, legal office memoranda, and citation forms. Prerequisite: LGLA 1303 and completion of 12 LGLA credits; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

LGLA 2335 - ADVANCED CIVIL LITIGATION
3 Credits (3 hrs. lec.) This course provides opportunities to implement advanced civil litigation techniques and builds upon skills acquired in prior civil litigation courses. Prerequisite: LGLA 1307; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

LGLA 2370 - RULES OF CIVIL PROCEDURE
3 Credits (3 hrs. lec.) An in-depth study of both state and federal rules of civil procedure. Designed to make the paralegal student extremely knowledgeable in locating the proper rules in either jurisdiction. Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

LGLA 2388 - INTERNSHIP - PARALEGAL/LEGAL ASSISTANT
3 Credits (18 hrs. ext.) The internship is a work-based learning experience that enables the student to apply specialized occupational theory, skills and concepts. A learning plan is developed by the college, the student, and the employer. Prerequisite: 15 LGLA credits, enrollment in Paralegal AAS or certificate program, approval of instructor; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

LMGT 1319 - INTRODUCTION TO BUSINESS LOGISTICS
3 Credits (3 hrs. lec.) A systems approach to managing activities associated with traffic, transportation, inventory management and control, warehousing, packaging, order processing, and materials handling. Prerequisite: ENGL 0305 or ENGL 0316; ENGL 0307 or ENGL 0326; or placement by testing

LMGT 1321 - INTRODUCTION TO MATERIALS HANDLING
3 Credits (3 hrs. lec.) Introduces the concepts and principles of materials management to include inventory control and forecasting activities. Prerequisite: ENGL 0305 or ENGL 0316; ENGL 0307 or 0326; or placement by testing

LMGT 1323 - DOMESTIC AND INTERNATIONAL TRANSPORTATION MGMT
3 Credits (3 hrs. lec.) An overview of the principles and practices of transportation and its role in the distribution process. Emphasis on the physical transportation systems involved in the United States as well as on global distribution systems. Topics include carrier responsibilities and services, freight classifications, rates, tariffs, and public policy and regulations. Also includes logistical geography and the development of skills to solve logistical transportation problems and issues. Prerequisite: LMGT 1319; ENGL 0305 or 0316; ENGL 0307 or ENGL 0326, or placement by testing

LMGT 1345 - ECONOMICS OF TRANSPORTATION AND DISTRIBUTION
3 Credits (3 hrs. lec.) A study of the basic economic principles and concepts applicable to transportation and distribution. Prerequisite: ENGL 0305 or 0316; ENGL 0307 or ENGL 0326, or placement by testing
DESCRIPTION OF COURSES

LMGT 1393 - SPECIAL TOPICS IN LOGISTICS AND MATERIALS MANAGEMENT

3 Credits (3 hrs. lec.) Topics address recently identified current events, skills, knowledge, and/or attitudes and behaviors pertinent to the technology or occupation and relevant to the professional development of the student. Prerequisite: ENGL 0305 or 0316; ENGL 0307 or ENGL 0326, or placement by testing.

LMGT 1425 - WAREHOUSE AND DISTRIBUTION CENTER MANAGEMENT

4 Credits (3 hrs. lec., 2 hrs. lab.) Emphasis on physical distribution and total supply chain management. Includes warehouse operations management, hardware and software operations, bar codes, organizational effectiveness, just-in-time manufacturing, continuous replenishment, and third party logistics providers. Prerequisite: ENGL 0305 or ENGL 0316; ENGL 0307 or ENGL 0326; or placement by testing, MATH 0306.

LMGT 2434 - PRINCIPLES OF TRAFFIC MANAGEMENT

4 Credits (3 hrs. lec., 3 hrs. lab.) A study of the role and functions of a transportation traffic manager within a commercial or public enterprise. Includes training in rate negotiation, carrier and mode selection, carrier service evaluation, quality control, traffic pattern analysis, documentation for domestic and international shipments, claims, hazardous materials movement, and the state, federal, and international environments of transportation. Prerequisite: ENGL 0305 or ENGL 0316; ENGL 0307 or ENGL 0326, or placement by testing, MATH 0306.

MAMT 2231 - INSTRUMENTATION/MODALITES

2 Credits (1 hr. lec., 2 hrs. lab.) This course is designed to familiarize the student with the concepts, theories, and equipment employed in breast imaging. Mammographic technique will include breast compression, magnification, and selection of technical factors and specimen radiology. Interventional procedures, special exams, and special modalities will be included in this course. Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing.

MAMT 2233 - ANATOMY/POSITIONING AND PATIENT ASSESSMENT

2 Credits (1 hr. lec., 2 hrs. lab.) Presentation of specialized instruction in breast imaging. Emphasis will be placed on breast anatomy, physiology, positioning, patient education, and assessment. Anatomy instruction will include surface anatomy as well as deep anatomy. Special emphasis will be placed on standard projections as well as additional projections/positions and positioning modifications. Prerequisite: MAMT 2231 and 2337; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing.

MAMT 2337 - MAMMOGRAPHY

3 Credits (2 hrs. lec., 3 hrs. lab.) Preparation for the registered technologist to enter the advanced field of mammography. Addresses skills, knowledge, and behaviors necessary to perform mammographic procedures. Prerequisite: Admission to program; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing, MATH 0310.

MAMT 2360 - CLINICAL - MAMMOGRAPHY TECHNOLOGY/TECHNICIAN

3 Credits (15 hrs. ext.) A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional. Prerequisite: Admission to the program; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing.

MAMT 2361 - CLINICAL - MAMMOGRAPHY TECHNOLOGY/TECHNICIAN

3 Credits (9 hrs. ext.) A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional. Prerequisite: Admission to the program; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing.

MAMT 2371 - QUALITY ASSURANCE ISSUES IN MAMMOGRAPHY

3 Credits (2 hrs. lec., 3 hrs. lab.) An intermediate or advanced type of health-based instruction that includes equipment, processing, and quality management/quality assurance programs. FDA (Food and Drug Administration) and MQSA (Mammography Quality and Standards Act) regulations will also be addressed as well as meeting current quality standards. Prereq-
DESCRIPTION OF COURSES

MATH 0110 - BASIC MATH SKILLS - THEA REVIEW

1 Credit (3 hrs. lab.) This is an individualized, laboratory course designed to review the 10 mathematical skills that are covered on the THEA exam. Included are topics covered in pre-algebra (fundamental mathematics), basic algebra, and geometry. Instruction focuses on individual needs. This course carries institutional credit but will not transfer and will not be used to meet degree requirements. (3201045119) Prerequisite: MATH 0306 or placement by testing.

MATH 0306, 0308 and 0310 are offered with several course format options. Consult with adviser for proper placement.

Course Format Options:
S Standard three hours per week lecture format
LL Extended 4 hours per week combination lec/lab. The LL format will provide an in-depth development of the course concepts and will incorporate lab activities to develop student’s problem-solving skills.

MATH 0306 - PRE-ALGEBRA MATHEMATICS

3 Credits (3 hrs. lec.) Topics for all formats include basic arithmetic operations on integers and rational numbers, order of operations, introduction to basic geometric concepts, simplification of algebraic expressions and techniques of solving simple linear equations. This course carries institutional credit but will not transfer and will not meet degree requirements. (3201045119) Prerequisite: Placement by testing.

MATH 0308 - INTRODUCTORY ALGEBRA

3 Credits (3 hrs. lec.) Topics for all formats include basic algebraic operations, elementary equations, laws of integer exponents, factoring and radical notation, rational expressions and an introduction to the Cartesian coordinate system. This course carries institutional credit but will not transfer and will not be used to meet degree requirements. (3201045119) Prerequisite: MATH 0306 or placement by testing.

MATH 0310 - INTERMEDIATE ALGEBRA

3 Credits (3 hrs. lec.) Topics for all formats include special products and factoring, rational expressions and equations, rational exponents, radicals, radical equations, quadratic equations and complex numbers; an introduction to the function concept and graphing, equations of lines and linear systems. This course carries institutional credit but will not transfer and will not be used to meet degree requirements. (3201045212) Prerequisite: MATH 0308 or placement by testing.

MATH 1314 - COLLEGE ALGEBRA

3 Credits (3 hrs. lec.) (A 4-hour per week course is available at North Harris College and Cy-Fair College only; consult with adviser for proper placement) Topics include absolute value and quadratic equations and inequalities, graphing skills, inverse functions, logarithmic and exponential functions, polynomial and rational functions, piecewise-defined functions, theory of equations and systems of equations. (2701015419) Prerequisite: MATH 0310 or placement by testing; Course may be taken as a corequisite with ENGL 0305 or 0316 and ENGL 0307 or 0326.

MATH 1316 - TRIGONOMETRY

3 Credits (3 hrs. lec.) Trigonometric functions and their applications, solutions of right and oblique triangles, trigonometric identities and equations, inverse trigonometric functions and graphs of the trigonometric functions. (2701015319) Prerequisite: MATH 1314 strongly recommended as prerequisite; ENGL 0305 or 0316; Corequisite: ENGL 0307 or 0326.

MATH 1324 - FINITE MATHEMATICS

3 Credits (3 hrs. lec.) Matrices, systems of equations, linear programming, the simplex method, probability, and mathematics of finance. Primarily for business majors and liberal arts students. (2703015219) Prerequisite: MATH 1314 or department approval; ENGL 0305 or 0316; Corequisite: ENGL 0307 or 0326.

MATH 1325 - ELEMENTS OF CALCULUS WITH APPLICATIONS

3 Credits (3 hrs. lec.) A one-semester calculus course for non-science majors. Topics include limits, continuity, rates of change, differentiation and integration techniques and applications, calculus of the logarithmic and exponential functions and partial derivatives. (2703015219) Prerequisite: MATH 1314 or placement by testing; ENGL 0305 or 0316; Corequisite: ENGL 0307 or 0326.

MATH 1331 - DISCRETE MATHEMATICS

3 Credits (3 hrs. lec.) Topics include logic, sets, functions and relations, induction and recursion, matrices, graphs and trees, and combinations and counting. Primarily for computer science and mathematics majors. (2701015319) Prerequisite: MATH 1314.
DESCRIPTION OF COURSES

MATH 1332 - COLLEGE MATHEMATICS FOR LIBERAL ARTS
3 Credits (3 hrs. lec.) College Mathematics for Liberal Arts is a course designed for liberal arts and other non-mathematics, non-science, and non-business majors, emphasizing an appreciation of the art, history, beauty, and applications of mathematics. Topics may include, but are not limited to, sets, logic, number theory, measurement, geometric concepts, and an introduction to probability and statistics. (2701015119) Prerequisite: MATH 0310 or placement by testing; ENGL 0305 or 0316; Corequisite: ENGL 0307 or 0326

MATH 1342 - STATISTICS
3 Credits (3 hrs. lec.) An introduction to the concepts and methods of statistics. Topics include probability, random variables, binomial and normal distributions, random sampling, statistical inference, estimation, testing hypotheses, linear regressions and correlation, and chi-square test. (2705015119) Prerequisite: MATH 1314; ENGL 0305 or 0316; Corequisite: ENGL 0307 or 0326

MATH 1350 - FOUNDATIONS OF MATHEMATICS I
3 Credits (3 hrs. lec.) This is designed specifically for students who seek elementary and middle school teacher certification. Topics include set theory, functions, numerations systems, number theory, emphasis on problem solving and critical thinking. (2701015619) Prerequisite: MATH 1314 or equivalent; ENGL 0305 or 0316; Corequisite: ENGL 0307 or 0326

MATH 1351 - FOUNDATIONS OF MATHEMATICS II
3 Credits (3 hrs. lec.) This is designed specifically for students who seek elementary and middle school teacher certification. Topics include concepts of geometry, probability, and statistics, as well as applications of the algebraic properties of real numbers to concepts of measurement with an emphasis on problem solving and critical thinking. (2701015619) Prerequisite: MATH 1314 or equivalent; ENGL 0305 or 0316; Corequisite: ENGL 0307 or 0326

MATH 2318 - LINEAR ALGEBRA
3 Credits (3 hrs. lec.) Matrices and linear systems, determinants, vector spaces, linear independence, basis and dimension, change of basis, linear transformations, similarity, inner product spaces, eigenvalues and eigenvectors, and diagonalization. Applications of these concepts will also be considered. (2701016119) Prerequisite: MATH 2414; ENGL 0305 or 0316; Corequisite: ENGL 0307 or 0326

MATH 2320 - DIFFERENTIAL EQUATIONS
3 Credits (3 hrs. lec.) Linear equations, solutions in series, solutions using Laplace transforms, systems of differential equations and applications to problems in engineering and allied fields. The student may elect to include a technology lab component at some colleges. (2703015119) Prerequisite: MATH 2414; ENGL 0305 or 0316; Corequisite: ENGL 0307 or 0326

MATH 2412 - PRECALCULUS
4 Credits (4 hrs. lec., 1 hr. lab.) An integrated treatment of the concepts necessary for calculus, emphasizing elementary functions and their graphs, including polynomial, rational, exponential, logarithmic and trigonometric functions, also includes topics from analytic geometry. The student may elect to include a technology lab component at some colleges. (2701015819) Prerequisite: MATH 1314 and 1316 or departmental approval; ENGL 0305 or 0316; Corequisite: ENGL 0307 or 0326.

MATH 2413, 2414 and 2415 are offered with two course form options:

MATH 2413 - CALCULUS I
4 Credits (3 hrs. lec., 3 hrs. lab. OR 4 hrs. lec, 1 hr. lab.) Functions, limits, continuity, differentiation and integration of algebraic and trigonometric functions, applications of differentiation and an introduction to applications of the definite integral. The student may elect to include a technology lab component at some colleges. (2701015919) Prerequisite: MATH 2412; ENGL 0305 or 0316; Corequisite: ENGL 0307 or 0326

MATH 2414 - CALCULUS II
4 Credits (3 hrs. lec., 3 hrs. lab. OR 4 hrs. lec, 1 hr. lab.) Differentiation and integration of exponential and logarithmic functions, techniques of integration, applications of the definite integral, the calculus of transcendental functions, parametric equations, polar coordinates, indeterminate forms, improper integrals, L'Hopital's Rule, sequences and series. The student may elect to include a technology lab component at some colleges. (2701015919) Prerequisite: MATH 2413; ENGL 0305 or 0316; Corequisite: ENGL 0307 or 0326
MATH 2415 - CALCULUS III
4 Credits (3 hrs. lec., 3 hrs. lab. OR 4 hrs. lec, 1 hr. lab.) The algebra and geometry of vectors; topics from the calculus of multivariable functions including limits, continuity, partial derivatives, directional derivatives, the gradient, extreme values, multiple integration and vector calculus. The student may elect to include a technology lab component at some colleges. Prerequisite: MATH 2414; ENGL 0305 or 0316 ; Corequisite: ENGL 0307 or 0326

MCHN 1319 - MANUFACTURING MATERIALS AND PROCESSES
3 Credits (2 hrs. lec., 4 hrs. lab.) A basic study of various materials used in the metals industry and the chemical, physical, and mechanical properties of various metals. Emphasis on manufacturing processes, including casting, forming, machining, and molding. Prerequisite: None

MCHN 1320 - PRECISION TOOLS AND MEASUREMENT
3 Credits (2 hrs. lec., 2 hrs. lab.) An introduction to the modern science of dimensional metrology. Emphasis on the identification, selection, and application of various types of precision instruments associated with the machining trade. Practice of basic layout and piece part measurements while using standard measuring tools. Prerequisite: None

MCHN 1338 - BASIC MACHINE SHOP I
3 Credits (2 hrs. lec., 2 hrs. lab.) An introductory course that assists the student in understanding the machinist occupation in industry. The student begins by using basic machine tools such as the lathe, milling machine, drill press, power saw, and bench grinder. Machine terminology, theory, math, part layout, and bench work using common measuring tools is included. Emphasis is placed on shop safety, housekeeping, and preventative maintenance. Prerequisite: None

MCHN 1352 - INTERMEDIATE MACHINING I
3 Credits (2 hrs. lec., 4 hrs. lab.) Operation of drills, milling machines, lathes, and power saws. Introduction to precision measuring techniques. Prerequisite: MCHN 1338 or departmental approval

MCHN 1358 - INTERMEDIATE LATHE OPERATIONS
3 Credits (2 hrs. lec., 2 hrs. lab.) Continuation of basic lathe operations with emphasis on continued proficiency in lathe operations. Identification and operation of lathe machine tools, including basic tapered form turning and basic threading operations. Prerequisite: INMT 1338, 1443, DFTG 1325, and instructor approval

MCHN 1380 - COOPERATIVE EDUCATION - MACHINE TOOL TECHNOLOGY/MACHINIST
3 Credits (1 hr. lec., 14 hrs. ext.) Career-related activities encountered in the student’s area of specialization offered through an individualized agreement among the college, employer, and student. Under the supervision of the college and the employer, the student combines classroom learning with work experience. Includes a lecture component. Prerequisite: DFTG 1325, MCHN 1320 and MCHN 1338, OR departmental approval

MCHN 1381 - COOPERATIVE EDUCATION - MACHINE TOOL TECHNOLOGY/MACHINIST
3 Credits (1 hr. lec., 14 hrs. ext.) Career-related activities encountered in the student’s area of specialization offered through an individualized agreement among the college, employer, and student. Under the supervision of the college and the employer, the student combines classroom learning with work experience. Includes a lecture component. Prerequisite: None

MCHN 1390 - SPECIAL TOPICS IN MACHINE SHOP ASSISTANT
3 Credits (2 hrs. lec., 4 hrs. lab.) Topics address recently identified current events, skills, knowledge, and/or attitudes and behaviors pertinent to the technology or occupation and relevant to the professional development of the student. An advanced study of manual lathe, milling, and drilling operations. Emphasis on advanced cutting operations of the lathe and milling machines, drill presses, including the use of carbide insert tooling, special tooling, bench assembly, and materials metallurgy. Prerequisite: None

MCHN 1391 - SPECIAL TOPICS IN MACHINE TECHNOLOGY
3 Credits (2 hrs. lec., 4 hrs. lab.) Topics address recently identified current events, skills, knowledge, and/or attitudes and behaviors pertinent to the technology or occupation and relevant to the professional development of the student. The students will design a project, made of metal or industrial plastics, with three or more working pieces. They will then make blueprints, manufacture pieces, and assemble them.
DESCRIPTION OF COURSES

The project has to work as designed and all pieces have to meet industrial standards in size and finish. Prerequisite: Instructor approval

**MCHN 1393 - SPECIAL TOPICS IN TOOL AND DIE MAKER/TECHNOLOGIST**

3 Credits (2 hrs. lec., 4 hrs. lab.) Topics address recently identified current events, skills, knowledge, and/or attitudes and behaviors pertinent to the technology or occupation and relevant to the professional development of the student. An advanced study in the use of CNC Lathe, CNC Milling machine. Emphasis will be placed on a student designing, drawing prints, and deciding on the order of operations in the building of a project that will meet industry specifications and show an ability to operate CNC equipment. Prerequisite: Instructor approval

**MCHN 2303 - FUNDAMENTALS OF COMPUTER NUMERIC CONTROLLED (CNC) MACHINE CONTROLS**

3 Credits (2 hrs. lec., 2 hrs. lab.) An introduction to G and M codes (RS274-D) necessary to program Computer Numerical Controlled (CNC) machines. Prerequisite: None

**MCHN 2305 - MILLWRIGHT III**

3 Credits (2 hrs. lec., 2 hrs. lab.) An introduction to bearings and seals. Identification of common bearings and seals. Emphasis on design and installation of seals and bearings, and couplings. Prerequisite: None

**MCHN 2438 - ADVANCED COMPUTER-AIDED MANUFACTURING (CAM)**

4 Credits (2 hrs. lec., 6 hrs. lab.) A study of advanced techniques in Computer-Aided Manufacturing (CAM). Prerequisite: None

**MCHN 2331- OPERATION OF CNC TURNING CENTERS**

3 Credits (2 hrs. lec., 2 hrs. lab.) A continuation of Fundamentals of CNC Machine Controls with an emphasis on turning centers. Prerequisite: MCHN 1338

**MDCA 1154 - CERTIFIED MEDICAL ASSISTING EXAM REVIEW**

1 Credit (1 hr. lec.) A preparation for the Certified Medical Assisting Exam, including a review of all three components of the CMA exam. Presents an explanation of how the exam is scored and provides opportunities to take practice exams. Prerequisite: MDCA 1216, 1217, and MDCA 1348; ENGL 0305 or ENGL 0316; ENGL 0307 or ENGL 0326; or placement by testing

**MCHN 2335 - ADVANCED CNC MACHINING**

3 Credits (2 hrs. lec., 2 hrs. lab.) The study of advanced CNC operation with an emphasis on programming and operations of machining and turning centers. Prerequisite: None

**MCHN 2341 - ADVANCED MACHINING**

3 Credits (2 hrs. lec., 4 hrs. lab.) An advanced study of lathe and milling operations. Emphasis on advanced cutting operations of the lathe and milling machines, including the use of carbide insert tooling, special tooling, bench assembly, and materials metallurgy. Prerequisite: MCHN 1338 or departmental approval

**MCHN 2381 - COOPERATIVE EDUCATION - MACHINE TOOL TECHNOLOGY/MACHINIST**

3 Credits (1 hr. lec., 14hrs. ext.) Career-related activities encountered in the student’s area of specialization offered through an individualized agreement among the college, employer, and student. Under the supervision of the college and the employer, the student combines classroom learning with work experience. Includes a lecture component. Prerequisite: MCHN 1338 or departmental approval

**MDCA 1205 - MEDICAL LAW AND ETHICS**

2 Credits (2 hrs. lec.) Instruction in principles, procedures, and regulations involving legal and ethical relationships among physicians, patients, and medical assistants. Includes current ethical issues and risk management as they relate to the practice of medicine and fiduciary responsibilities. Prerequisite: HITT 1305; ENGL 0305 or ENGL 0316; ENGL 0307 or ENGL 0326; or placement by testing

**MDCA 1208 - ANATOMY AND PHYSIOLOGY FOR MEDICAL ASSISTANTS I**

2 Credits (2 hrs. lec.) Emphasis on normal human anatomy and physiology of cells, tissues, organs, and
systems with overview of common pathophysiology. Prerequisite: None

**MDCA 1209 - ANATOMY AND PHYSIOLOGY FOR MEDICAL ASSISTANTS II**

2 Credits (2 hrs. lec.) A continuation of MDCA 1208 whereby students continue to build skills in the following areas: normal human anatomy and physiology of cells, tissues, organs, and systems with overview of common pathophysiology. Prerequisite: None

**MDCA 1213 - MEDICAL TERMINOLOGY**

2 Credits (2 hrs. lec.) A study and practical application of a medical vocabulary system. Includes structure, recognition, analysis, definition, spelling, pronunciation, and combination of medical terms from prefixes, suffixes, roots, and combining forms. Prerequisite: None

**MDCA 1216 - PROCEDURES IN A CLINICAL SETTING I**

2 Credits (1 hr. lec., 3 hrs. lab.) An introduction to patient-centered assessment, examination, intervention, and treatment as directed by physician. Includes vital signs, collection and documentation of patient information, asepsis, minor surgical procedures, and other treatments as appropriate for the medical office. Prerequisite: None

**MDCA 1217 - PROCEDURES IN A CLINICAL SETTING II**

2 Credits (1 hr. lec., 3 hrs. lab.) An advanced study in patient-centered assessment, examination, intervention, and treatment as directed by physician. Includes vital signs, collection and documentation of patient information, asepsis, minor surgical procedures, and other treatments as appropriate for the medical office. Prerequisite: None

**MDCA 1220 - ADMINISTRATIVE PROCEDURES I**

2 Credits (2 hrs. lec.) A course in basic medical office procedures which may include appointment scheduling, medical records creation and maintenance, phone communications, transcriptions, coding, billing, collecting, third party reimbursement, credit arrangements, and use of computer in the medical office. Prerequisite: None

**MDCA 1221 - ADMINISTRATIVE PROCEDURES II**

2 Credits (2 hrs. lec.) A course in advanced medical office procedures which may include appointment scheduling, medical records creation and maintenance, phone communications, transcriptions, coding, billing, collecting, third party reimbursement, credit arrangements, and use of computer in the medical office. Prerequisite: None

**MDCA 1242 - MEDICAL INSURANCE I**

2 Credits (2 hrs. lec.) An introduction to ICD-9 and CPT coding of office procedures for payment/reimbursement by patient or third party and prevention of insurance fraud. Additional topics may include managed care or medical economics. Prerequisite: None

**MDCA 1243 - MEDICAL INSURANCE II**

2 Credits (2 hrs. lec.) Advanced study in ICD-9 and CPT coding of office procedures for payment/reimbursement by patient or third party and prevention of insurance fraud. Additional topics may include managed care or medical economics. Prerequisite: None

**MDCA 1244 - ELECTROCARDIOGRAPHY**

2 Credits (1 hr. lec., 2 hrs. lab.) Principles and procedures of 12 lead electrocardiography (EKG) which may include stress testing and Holter monitoring, and care and maintenance of equipment and exam area. Prerequisite: None

**MDCA 1264 - MEDICAL ASSISTANT PRACTICUM**

2 Credits (15 hrs. ext.) A practical, general workplace training supported by an individualized learning plan developed by the employer, college, and student. Prerequisite: None

**MDCA 1291 - SPECIAL TOPICS IN MEDICAL ASSISTANT**

2 Credits (2 hrs. lec.) This course provides the medical assistant student with principles of behaviors involved in the development of human relationships. Emphasis is given to the development of self concept, attitudes, and major aspects of interpersonal communications dealt in an ambulatory care setting. Topics address recently identified current events, skills, knowledges, and/or attitudes and behaviors pertinent to the technology or occupation and relevant to the professional development of the student. This course was designed to be repeated multiple times to improve student proficiency. Prerequisite: None
DESCRIPTION OF COURSES

MDCA 1348 - PHARMACOLOGY AND ADMINISTRATION OF MEDICATIONS

3 Credits (2 hrs. lec., 2 hrs. lab.) Instruction in concepts and application of pharmacological principles. Focuses on drug classifications, principles and procedures of medication administration, mathematical systems and conversions, calculation of drug problems, and medico-legal responsibilities of the medical assistant. Prerequisite: HITT 1305, MDCA 1302 and MDCA 1309; ENGL 0305 or ENGL 0316; ENGL 0307 or ENGL 0326; or placement by testing, MATH 0308

MDCA 1352 - MEDICAL ASSISTANT LABORATORY PROCEDURES

3 Credits (2 hrs. lec., 2 hrs. lab.) Emphasis on common laboratory procedures performed in the physician’s office or clinic setting. Includes blood collection, specimen handling, basic urinalysis, identification of normal ranges, and may include electrocardiography. Quality assurance and quality control. Prerequisite: None

METL 1301 - INTRODUCTION TO METALLURGY

3 Credits (3 hrs. lec.) An introduction to physical metallurgy and its application related to welding including studies of metal characteristics, testing, effects of alloying and heat treating, and basic properties. Emphasis on conducting tests and metallurgical techniques. Prerequisite: None

METL 1405 - WELDING METALLURGY I

4 Credits (3 hrs. lec., 3 hrs. lab.) An introduction to physical metallurgy and its application related to welding including studies of metal characteristics, testing, effects of alloying and heat treating, and basic properties. Emphasis on conducting tests and metallurgical techniques. Prerequisite: None

MRIT 2330 - PRINCIPLES OF MAGNETIC RESONANCE IMAGING

3 Credits (3 hrs. lec.) General principles for learning to operate a magnetic resonance imager. Focuses on building a sound understanding of the underlying theory and practice leading to magnetic resonance imaging. Designed to introduce the concepts and scientific principles employed in magnetic resonance imaging techniques. Principles of magnetism and interactions of living matter within magnetic fields are emphasized. Prerequisite: Admission to program; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

MRIT 2334 - MAGNETIC RESONANCE EQUIPMENT AND METHODOLOGY

3 Credits (3 hrs. lec.) A study of the actual operation and the operational control of magnetic resonance imaging equipment. Focuses on routine protocols, image quality, and quality control of magnetic resonance imaging. Theory and application of magnetic resonance imaging equipment and the principles of patient imaging techniques utilizing the equipment. Prerequisite: Admission to program; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

MRIT 2360 - CLINICAL - MAGNETIC RESONANCE IMAGING TECHNOLOGY/TECHNICIAN

3 Credits (9 hrs. ext.) A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional. Prerequisite: Admission to program; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

MRIT 2361 - CLINICAL - MAGNETIC RESONANCE IMAGING TECHNOLOGY/TECHNICIAN

3 Credits (9 hrs. ext.) A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional. Prerequisite: Admission to program; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing
MRKG 1301 - CUSTOMER RELATIONS
3 Credits (3 lec. hrs.) Topics address general principles of customer service, including skills, knowledge, attitudes, and behaviors pertinent to the professional development of the student. Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

MRKG 1302 - PRINCIPLES OF RETAILING
3 Credits (3 hrs. lec.) Introduction to the retailing environment and its relationship to consumer demographics, trends, and traditional/nontraditional retailing markets, the employment of retailing techniques and the factors that influence modern retailing. Prerequisite: None

MRKG 1311 - PRINCIPLES OF MARKETING
3 Credits (3 hrs. lec.) Introduction to basic marketing functions; identification of consumer and organizational needs; explanation of economic, psychological, sociological, and global issues; and description and analysis of the importance of marketing research. Prerequisite: None

MRKG 2333 - PRINCIPLES OF SELLING
3 Credits (3 hrs. lec.) Overview of the selling process. Identification of the elements of the communication process between buyers and sellers in business; and ethical issues and legal restrictions of American business which affect salespeople. Prerequisite: None

MRKG 2348 - MARKETING RESEARCH AND STRATEGIES
3 Credits (3 hrs. lec.) Designed to enhance student understanding of the marketing environment and the dynamic interrelationships of the functions of marketing price, channels of distribution, promotion, and product responsibility. Provides a simulated marketing environment for experience in marketing decision-making and provides experiences in analyzing market cases for the students. Prerequisite: None

MRKG 2349 - ADVERTISING AND SALES PROMOTION
3 Credits (3 hrs. lec.) Introduction to the advertising principles, practices, and multimedia of persuasive communication including buyer behavior, budgeting, and regulatory constraints. Prerequisite: None

MRKG 2380 - CO-OP - BUSINESS MARKETING AND MARKETING MANAGEMENT I
3 Credits (1 hr. lec., 20 hrs. ext.) Career-related activities encountered in the student's area of specialization offered through an individualized agreement among the college, employer, and student. Under the supervision of the college and the employer, the student combines classroom learning with work experience. Includes a lecture component. Prerequisite: Enrollment in management AAS degree program; completion of 15 credits in degree plan; and departmental approval

MRKG 2381 - CO-OP - BUSINESS MARKETING AND MARKETING MANAGEMENT II
3 Credits (1 hr. lec., 20 hrs. ext.) Career-related activities encountered in the student's area of specialization offered through an individualized agreement among the college, employer, and student. Under the supervision of the college and the employer, the student combines classroom learning with work experience. Includes a lecture component. Prerequisite: Enrollment in management AAS degree program; completion of 22 credits in degree plan; BMGT 2382 and departmental approval

MRKG 2388 - INTERNSHIP - BUSINESS MARKETING AND MARKETING MANAGEMENT
3 Credits (9 hrs. ext.) A work-based learning experience that enables the student to apply specialized occupational theory, skills and concepts. A learning plan is developed by the college and the employer. Prerequisite: Departmental approval

MRMT 1192 - REVIEW COURSE
1 Credit (1 hr. lec.) A comprehensive review course, which incorporates concepts from all previous medical transcription courses, in preparation for the student licensing exam. Includes application of knowledge, judgment, skills, and professional values within a legal/ethical framework. Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

MRMT 1266 - PRACTICUM
2 Credits (14 hrs. ext.) Practical, general workplace training supported by an individualized learning plan developed by the employer, college, and student. Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing
DESCRIPTION OF COURSES

MRMT 1307 - MEDICAL TRANSCRIPTION
FUNDAMENTALS
3 Credits (2 hrs. lec., 2 hrs. lab.) Fundamentals of medical transcription with hands-on experience in transcribing physician dictation including basic reports such as history and physicals, discharge summaries, consultations, operative reports, and other medical reports. Utilizes transcribing and information processing equipment compatible with industry standards. Designed to develop speed and accuracy. Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing.

MRMT 2433 - ADVANCED MEDICAL TRANSCRIPTION
4 Credits (2 hrs. lec., 4 hrs. lab.) Production of advanced reports of physician dictation with increasing speed and accuracy including history and physicals, consultations, discharge summaries, operative reports, and other medical reports. Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing.

APPLIED MUSIC

Private instruction in instruments and voice is available to students majoring or minoring in music and to other students who desire to gain or improve proficiency in voice or some instrument. The following courses will be taught as instructors are available. Refer to the class schedule each semester for specific course laboratory fees. Fees are due at the time of registration and are not refundable or transferable. (5009035426). Prerequisite: Audition and departmental approval; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing. Corequisite: Nonmajors- MUSI 1301, 1306, MUEN 1123, 1127, 1141, or 2124. Majors-MUSI 1211, 1216, 1212, 1217, 2211, 2216, 2212, 2217, or MUSI 1181, 1182, 2181, 2182.

MUAP 1101 - STRINGS
1 Credit (One 1/2 hour lesson per week)

MUAP 1121 - WOODWINDS
1 Credit (One 1/2 hour lesson per week)

MUAP 1141 - BRASS
1 Credit (One 1/2 hour lesson per week)

MUAP 1157 - PERCUSSION
1 Credit (One 1/2 hour lesson per week)

MUAP 1161 - GUITAR
1 Credit (One 1/2 hour lesson per week)

MUAP 1165 - ORGAN
1 Credit (One 1/2 hour lesson per week)

MUAP 1169 - KEYBOARD
1 Credit (One 1/2 hour lesson per week)

MUAP 1181 - VOICE
1 Credit (One 1/2 hour lesson per week)

MUAP 1201 - STRINGS
1 Credit (One 1/2 hour lesson per week)

MUAP 1221 - WOODWINDS
1 Credit (One 1/2 hour lesson per week)

MUAP 1241 - BRASS
1 Credit (One 1/2 hour lesson per week)

MUAP 1257 - PERCUSSION
1 Credit (One 1/2 hour lesson per week)

MUAP 1261 - GUITAR
1 Credit (One 1/2 hour lesson per week)

MUAP 1265 - ORGAN
1 Credit (One 1/2 hour lesson per week)

MUAP 1269 - KEYBOARD
1 Credit (One 1/2 hour lesson per week)

MUAP 1281 - VOICE
1 Credit (One 1/2 hour lesson per week)

MUAP 2141 - BRASS
1 Credit (Second year, one 1/2 hour lesson per week; one credit hour per semester)

MUAP 2157 - PERCUSSION
1 Credit (Second year, one 1/2 hour lesson per week; one credit hour per semester)

MUAP 2161 - GUITAR
1 Credit (Second year, one 1/2 hour lesson per week; one credit hour per semester)

MUAP 2169 - KEYBOARD
1 Credit (Second year, one 1/2 hour lesson per week; one credit hour per semester)
MUAP 2181 - VOICE
1 Credit (Second year, one 1/2 hour lesson per week; one credit hour per semester)

MUAP 2201 - STRINGS
2 Credits (Second year, two 1/2 hour lessons per week; two credit hours per semester)

MUAP 2221 - WOODWINDS
2 Credits (Second year, two 1/2 hour lessons per week; two credit hours per semester)

MUAP 2241 - BRASS
2 Credits (Second year, two 1/2 hour lessons per week; two credit hours per semester)

MUAP 2257 - PERCUSSION
2 Credits (Second year, two 1/2 hour lessons per week; two credit hours per semester)

MUAP 2261 - GUITAR
2 Credits (Second year, two 1/2 hour lessons per week; two credit hours per semester)

MUAP 2269 - KEYBOARD
2 Credits (Second year, two 1/2 hour lessons per week; two credit hours per semester)

MUAP 2281 - VOICE
2 Credits (Second year, two 1/2 hour lessons per week; two credit hours per semester)

MUEN 1123 - SYMPHONY ORCHESTRA I
1 Credit (3 hrs. lab.) The study and performance of music compositions for full orchestra, including strings, woodwinds, brass, and percussion. Recommended for music majors and open to others with departmental approval. (5009035626) Prerequisite/Corequisite: Course may be taken as a corequisite with ENGL 0305 or 0316 and ENGL 0307 or 0326

MUEN 1127 - JAZZ ENSEMBLE
1 Credit (3 hrs. lab.) The study and performance of big band jazz. Swing, Latin, rock and other jazz styles are included. A maximum of four credit hours may be earned. (5009035526) Prerequisite/Corequisite: Audition and departmental approval; Course may be taken as a corequisite with ENGL 0305 or 0316 and ENGL 0307 or 0326

MUEN 1131 - STRING ENSEMBLE
1 Credit (3 hrs. lab.) This course involves the study and performances of music compositions for small string groups. It is recommended for music majors whose principle performing medium is the violin, viola, or cello. Open to other qualified students by approval of division. A maximum of four credit hours may be earned. (5009035626) Prerequisite: Audition and departmental approval; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

MUEN 1132 - PIANO ENSEMBLE
1 Credit (3 hrs. lab.) A course which is designed to offer students an opportunity to work with piano literature written for two or more performers. (5009035626) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

MUEN 1133 - GUITAR ENSEMBLE
1 Credit (3 hrs. lab.) This course involves the study and performances of music compositions for small guitar groups. It is recommended for music majors whose principle performing medium is the guitar. Open to other qualified students by approval of division. A maximum of four credit hours may be earned. (5009035626) Prerequisite: Audition and departmental approval; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

MUEN 1135 - STEEL DRUM BAND
1 Credit (3 hrs. lab.) Membership is open to all students on the basis of audition and/or conference to assess the students ability to count fundamental rhythms. Percussionist, vocalist, woodwind, brass, and keyboard players are encouraged to audition. The class meets four hours per week with special rehearsals and performances called as needed. This course may be taken a maximum of six times for credit. (5009035626) Prerequisite: Audition and departmental approval; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

MUEN 1136 - CHAMBER ENSEMBLE
1 Credit (2 hrs. lab.) Chamber Ensemble is a mixed instrumentation group of wind, string, percussion, and brass players performing chamber (small group) repertoire from any style period. A maximum of four
DESCRIPTION OF COURSES

Credit hours may be earned. (5009035626) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

MUEN 1141 - CONCERT CHOIR

1 Credit (3 hrs. lab.) Concert Choir is a large vocal ensemble performing large-scale sacred and secular works. In addition to local concerts, the group participates in campus activities. The Choir is open to students with vocal experience. A maximum of four credit hours may be earned. (5009035726) Prerequisite/Corequisite: Course may be taken as a corequisite with ENGL 0305 or 0316 and ENGL 0307 or 0326

MUEN 1151 - CHAMBER SINGERS

1 Credit (3 hrs. lab.) The Chamber Singers are a small vocal ensemble performing sacred and secular choral literature of various eras including madrigals. (5009035826) Prerequisite/Corequisite: Audition and departmental approval; Course may be taken as a corequisite with ENGL 0305 or 0316 and ENGL 0307 or 0326

MUEN 1154 - POP SINGERS

1 Credit (3 hrs. lab.) The Pop Singers specialize in performing contemporary popular music, including music of radio, TV, motion picture, and Broadway. Some choreography and staging may be involved. (5009035826) Prerequisite/Corequisite: Audition and departmental approval; Course may be taken as a corequisite with ENGL 0305 or 0316 and ENGL 0307 or 0326

MUEN 2123 - PIANO ENSEMBLE

1 Credit (3 hrs. lab.) A continuation of the study and performances of music composition for full orchestra, including strings, woodwinds, brass & percussion. Recommended for music majors and open to others with departmental approval. (5009035626) Prerequisite: MUEN 1123; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing.

MUEN 2124 - SYMPHONIC BAND

1 Credit (3 hrs. lab.) The study of a wide variety of literature for wind and percussion instruments through rehearsal and performance. Open to all students with instrumental music experience. A maximum of four credit hours may be earned. (5009035526) Prerequisite/Corequisite: Audition and departmental approval; Course may be taken as a corequisite with ENGL 0305 or 0316 and ENGL 0307 or 0326

MUEN 2133 - WOODWIND ENSEMBLE

1 Credit (3 hrs. lab.) This course involves the study and performance of music compositions for small woodwind groups. It is recommended for music majors whose principle performing medium is a woodwind instrument. Open to other qualified students by approval of division. A maximum of four credit hours may be earned. (5009035626) Prerequisite: Audition and departmental approval; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

MUEN 2134 - BRASS ENSEMBLE

1 Credit (3 hrs. lab.) This course involves the study and performance of music compositions for small brass groups. It is recommended for music majors whose performing medium is a brass instrument. Open to other qualified students by approval of division. A maximum of four credit hours may be earned. (5009035626) Prerequisite: Audition and departmental approval; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

MUEN 2135 - JAZZ COMBO

1 Credit (3 hrs. lab.) A study of the techniques involved in the improvisation of a solo in the jazz idiom through rehearsal and performance in a small ensemble. Open to all students with instrumental music experience. A maximum of four credit hours may be earned. (5009035626) Prerequisite: Audition and departmental approval; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

MUEN 2137 - JAZZ COMBO II

1 Credit (3 hrs. lab.) A continuation of the study and performance of music compositions for small jazz groups. Open to all students with instrumental music experience. A maximum of four credit hours may be earned. (5009035626) Prerequisite: Audition and departmental approval; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

MUEN 2141 - VOCAL ENSEMBLE I

1 Credit (3 hrs. lab.) The study of the vocal ensemble as a large musical form. Open to all students with vocal experience. A maximum of four credit hours may be earned. (5009035626) Prerequisite: Audition and departmental approval; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

MUEN 2142 - VOCAL ENSEMBLE II

1 Credit (3 hrs. lab.) A continuation of the study of the vocal ensemble as a large musical form. Open to all students with vocal experience. A maximum of four credit hours may be earned. (5009035626) Prerequisite: Audition and departmental approval; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

MUEN 2143 - VESPERS CHOIR

1 Credit (3 hrs. lab.) The study of the Vespers Choir and the performance of sacred works. Open to all students with vocal experience. A maximum of four credit hours may be earned. (5009035626) Prerequisite: Audition and departmental approval; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

MUEN 2145 - OPERA WORKSHOP

1 Credit (3 hrs. lab.) The performance of portions or complete operas and the study of the integration of music, acting and staging of an opera. Students may repeat for four hours of credit. (5009085226) Prerequisite: Audition and departmental approval; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

MUSI 1157 - OPERA WORKSHOP

1 Credit (3 hrs. lab.) The performance of portions or complete operas and the study of the integration of music, acting and staging of an opera. Students may repeat for four hours of credit. (5009085226) Prerequisite: Audition and departmental approval; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

MUSI 1159, 2159 - MUSICAL THEATRE I & II

1 Credit (5 hrs. lab.) Practical experience in auditioning, rehearsing, and performing in a major musical.
DESCRIPTION OF COURSES

MUSI 1162 - DICTION I
1 Credit (2 hrs. lab.) This course provides a framework for singing in English, Latin, and Italian. While some grammatical rules will be taught, the course does not attempt to teach the language. (500905326) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

MUSI 1165 - DICTION II
1 Credit (2 hrs. lab.) This course provides a framework for singing in French and German. While some grammatical rules will be taught, the course does not attempt to teach the language. (500905326) Prerequisite: MUSI 1162; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

MUSI 1181, 1182, 2181, 2182 - CLASS PIANO
1 Credit (3 hrs. lab.) Beginning keyboard instruction for the general music major as well as the nonmusic major who wishes to learn piano. The use of electronic pianos permits individual instruction. A maximum of four credit hours may be earned. (500905126) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

MUSI 1183, 1184, 2183, 2184 - CLASS VOICE
1 Credit (3 hrs. lab.) Beginning voice instruction for the student who has little or no experience. A maximum of four credit hours of voice classes may be earned. (500905126) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

MUSI 1192, 1193, 2192, 2193 - CLASS GUITAR
1 Credit (3 hrs. lab.) Beginning guitar instruction for the general music major as well as the nonmusic major who wishes to learn guitar. A maximum of four credit hours may be earned. (500905126) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

MUSI 1211 - THEORY I
2 Credits (3 hrs. lec.) A study of elementary harmony and part writing up to and including diatonic seventh chords. Analysis and writing of small compositional forms. Correlated study at the keyboard. (5009045126) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing; Corequisite: MUSI 1181 and 1182

MUSI 1212 - THEORY II
2 Credits (3 hrs. lec.) A continuation of MUSI 1211 including modulation, secondary dominants and secondary leading-tone chords. (5009045126) Prerequisite: MUSI 1211; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing; Corequisite: MUSI 1181 and 1182

MUSI 1216 - EAR TRAINING AND SIGHT SINGING I
2 Credits (1 hr. lec., 2 hrs. lab.) An aural study (including dictation) of rhythm, melody and diatonic harmony. Singing tonal music in treble, bass, alto and tenor clefs. (500904526) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing; Corequisite: MUSI 1211 and 1182

MUSI 1217 - EAR TRAINING AND SIGHT SINGING II
2 Credits (1 hr. lec., 2 hrs. lab.) A continuation of MUSI 1216. (500904526) Prerequisite: MUSI 1211; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing; Corequisite: MUSI 1212 and 1182

MUSI 1301 - MUSIC FUNDAMENTALS
3 Credits (3 hrs. lec.) A course for developing basic music skills with emphasis on music reading and elementary music theory for the nonmusic major and the classroom teacher. (5009045526) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

MUSI 1306 - MUSIC APPRECIATION
3 Credits (3 hrs. lec.) A nontechnical course designed to provide the layperson with the understanding necessary for greater enjoyment of music. (5009025126) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing
DESCRIPTION OF COURSES

MUSI 1307 - MUSIC LITERATURE
3 Credits (3 hrs. lec.) A study, through lecture, listening, score-analysis, and research, of the literature and stylistic trends of Western art music as well as examples of American popular music and non-Western music. (5009025226) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

MUSI 1308 - MUSIC LITERATURE I
3 Credits (3 hrs. lec.) A study, through lecture and listening, of the literature and stylistic trends of the Baroque and Classical periods. Separate course available for nonmajors. (5009025226) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

MUSI 1309 - MUSIC LITERATURE II
3 Credits (3 hrs. lec.) A continuation of MUSI 1308 covering Romantic and Contemporary periods. Separate course available for nonmajors. (5009025226) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

MUSI 1310 - AMERICAN MUSIC
3 Credits (3 hrs. lec.) An investigation into popular music of American composers, including jazz, rock, soul, musical theater, and classical music of the 20th century. (5009025326) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

MUSI 1386 - POPULAR SONG WRITING I - COMPOSITION
3 Credits (3 hrs. lec.) Instruction in music composition, including small forms for simple media in both traditional styles and styles of the student’s choice. Lyrics, melodies, harmonies, arrangements, performance and studio recording will be covered. (5009045326) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

MUSI 1390 - ELECTRONIC MUSIC I
3 Credits (3 hrs. lec.) Introduction to the use of synthesizers, computers, sequencing and other music printing software, and multitrack recorders and other MIDI (Music Instrument Digital Interface) devices in the notation, arrangement, composition, and performance of music. (5009045826) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

MUSI 1391 - ELECTRONIC MUSIC II
3 Credits (3 hrs. lec.) Further study and application of synthesizers, computers, sequencing and music printing software, and multi-track digital recorders. Includes MIDI (Music Instrument Digital Interface) devices used for notation, arrangement, composition, and performance of music. This course is a continuation of Electronic Music I. (5009045826) Prerequisite: MUSI 1390; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

MUSI 2211 - THEORY III
2 Credits (3 hrs. lec.) A study of advanced harmony with emphasis on chromaticism, extended tertian structures and twentieth-century compositional procedures. (5009045226) Prerequisite: MUSI 1212; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing; Corequisite: MUSI 2216 and 2181

MUSI 2212 - THEORY IV
2 Credits (3 hrs. lec.) A continuation of MUSI 2211. (5009045226) Prerequisite: MUSI 2211; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

MUSI 2216 - EAR TRAINING AND SIGHT SINGING III
2 Credits (1 hr. lec., 2 hrs. lab.) An aural study (including dictation) of more complex rhythm, melody, chromatic harmony and extended tertian structures. Singing more difficult tonal music including modulations and modal melodies. (5009045726) Prerequisite: MUSI 1217; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing; Corequisite: MUSI 2211 and 2181

MUSI 2217 - EAR TRAINING AND SIGHT SINGING IV
2 Credits (1 hr. lec., 2 hrs. lab.) A continuation of MUSI 2216. (5009045726) Prerequisite: MUSI 2216; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing; Corequisite: MUSI 2212 and 2182
MUSI 2386 - POPULAR SONG WRITING II - COMPOSITION

3 Credits (3 hrs. lec.) Individual or class instruction in music composition. Composing in small forms for simple media in both traditional styles and styles of the student’s choice. This is a continuation of Music 1386, including the study of lyrics, melodies, harmonies, arrangements, performance, and studio recording. (5009/45326) Prerequisite: MUSI 1386; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

MUSI 2389 - ACADEMIC CO-OP IN MUSIC

3 Credits (1 hr. lec., 6 hrs. lab.) An instructional program designed to integrate on-campus study with practical hands-on work experience in music. In conjunction with class seminars, the instructor and institutional representative, the individual student will set specific goals and objectives in music. (2401035212) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

NDTE 1301 - FILM INTERPRETATION OF WELDMENTS

3 Credits (2 hrs. lec., 2 hrs. lab.) A study of radiographic film, including exploration of radiographic basics, interpretation, and causes and effects of discontinuities. Prerequisite: None

NDTE 1410 - LIQUID PENETRANT/MAGNETIC PARTICLE TESTING

4 Credits (2 hrs. lec., 4 hrs. lab.) A theoretical study and practical application of the non-destructive testing techniques of penetrant and magnetic particle testing required by quality assurance and test personnel including proper test technique, or combination of techniques and interpretation, evaluation of test results. Prerequisite: None

NDTE 1454 - INTERMEDIATE ULTRASONICS

4 Credits (2 hrs. lec., 4 hrs. lab.) Basic theory and applications of the ultrasonic techniques of materials testing covering the theoretical material from the certification test for Ultrasonic Level I & II, American Society of Non-Destructive Testing. The testing portion of the course is concerned with a study of fundamental properties of impedance, inductance, reactance, eddy current theory, principles of electromagnetic wave propagation, eddy current sensors, eddy current test equipment, process and techniques. Safety practices, procedures, and current development in eddy current testing in the industrial areas are stressed in relation and application to the petrochemical, aerospace, nuclear, and metal working industries. Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

NDTE 2311 - PREPARATION FOR WELDING INSPECTION

3 Credits (2 hrs. lec., 2 hrs. lab.) General principles of welding inspection including welding processes, terms and definitions, welding discontinuities, duties and responsibilities of inspectors, destructive and nondestructive testing, quality assurance/quality control, welding codes and blueprints, procedures, and case studies. An overview of welding tools and equipment, metallurgy, chemistry, and joint design. Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

NDTE 2401 - ADVANCED ULTRASONICS

4 Credits (2 hrs. lec., 4 hrs. lab.) Designed to strengthen the students’ knowledge and skills in ultrasonic testing. Emphasis is on examination of plate and pipe welds, characterization of flaws, immersion testing, written practices, and procedures. Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

OTHA 1301 - INTRODUCTION TO OCCUPATIONAL THERAPY

3 Credits (3 hrs. lec.) Introduction to the historical development and philosophy of the profession of occupational therapy. Emphasis on the roles and functions of the occupational therapy assistant in current health care environments including moral, legal, and ethical issues. Prerequisite: Admission to the OTA program; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing
DESCRIPTION OF COURSES

OTHA 1309 - HUMAN STRUCTURE AND FUNCTION IN OCCUPATIONAL THERAPY
3 Credits (2 hrs. lec., 2 hrs. lab.) Study of biomechanics of human motion. Emphasis on the musculoskeletal system including skeletal structure, muscles and nerves, and biomechanical assessment procedures. Prerequisite: OTHA 1301 and 1315; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

OTHA 1315 - THERAPEUTIC USE OF OCCUPATIONS OR ACTIVITIES I
3 Credits (2 hrs. lec., 2 hrs. lab.) Various occupations or activities used as therapeutic interventions in occupational therapy. Emphasis on awareness of activity demands, contexts, adapting, grading, and safe implementation of occupations or activities. Prerequisite: Admission to the OTA program; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

OTHA 1319 - THERAPEUTIC INTERVENTIONS I
3 Credits (2 hrs. lec., 3 hrs. lab.) Concepts, techniques, and assessments leading to proficiency in skills and activities used as treatment interventions in occupational therapy (OT). Emphasizes the Occupational Therapy Assistant’s role in the OT process. Prerequisite: OTHA 1309 and 2301; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

OTHA 2166 - PRACTICUM - OCCUPATIONAL THERAPY ASSISTANT
1 Credit (7 hrs. ext.) Practical, general workplace training supported by an individualized learning plan developed by the employer, college, and student. Prerequisite: OTHA 2302 and 2309; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

OTHA 2301 - PATHOPHYSIOLOGY FOR OCCUPATIONAL THERAPY
3 Credits (3 hrs. lec.) Study of the pathology and general health management of diseases and injuries across the lifespan encountered in occupational therapy treatment settings. Topics include etiology, symptoms, and the physical and psychological reactions to diseases and injuries. Prerequisite: OTHA 1301 and BIOL 2401; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

OTHA 2302 - THERAPEUTIC USE OF OCCUPATIONS OR ACTIVITIES II
3 Credits (2 hrs. lec., 3 hrs. lab.) Continuation of Therapeutic Use of Occupations or Activities I. Emphasis on advanced techniques and applications used in traditional and non-traditional practice settings. Prerequisite: OTHA 1315; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

OTHA 2309 - MENTAL HEALTH IN OCCUPATIONAL THERAPY
3 Credits (2 hrs. lec., 3 hrs. lab.) Promotion of mental health through occupational therapy. Emphasis on theory and intervention strategies to enhance occupational performance. Prerequisite: OTHA 1301 and PSYC 2314; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

OTHA 2331 - PHYSICAL FUNCTION IN OCCUPATIONAL THERAPY
3 Credits (2 hrs. lec., 3 hrs. lab.) Physical function to promote occupational performance. Includes frames of reference, assessment/evaluation tools and techniques, patient/client education, and intervention strategies. Prerequisite: OTHA 1315 and BIOL 2401; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing
OTHA 2335 - HEALTHCARE MANAGEMENT IN OCCUPATIONAL THERAPY

3 Credits (3 hrs. lec.) Explores the roles of the occupational therapy assistant in health care delivery. Emphasis is on documentation, occupational therapy standards and ethics, health care team role delineation, and management. Prerequisite: OTHA 1315 and 2302; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing.

OTHA 2460 - CLINICAL - OCCUPATIONAL THERAPY ASSISTANT

4 Credits (20 hrs. ext.) A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional. Prerequisite: Successful completion of OTHA 1319, 1341, 1353, 2335, and 2166; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing.

OTHA 2461 - CLINICAL - OCCUPATIONAL THERAPY ASSISTANT

4 Credits (20 hrs. ext.) A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional. Prerequisite: Successful completion of OTHA 1319, 1341, 1353, 2335, and 2166; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing.

PHIL 1301 - INTRODUCTION TO PHILOSOPHY

3 Credits (3 hrs. lec.) This course examines fundamental philosophical topics, such as knowledge, morality, the existence of God, reality, and free will. Each theory, presented through the study of selected major philosophers and representative works, is critically analyzed. (3801015112) Prerequisite: ENGL 0305 and 0307, or 0316 and 0326

PHIL 1304 - INTRODUCTION TO WORLD RELIGIONS

3 Credits (3 hrs. lec.) This course introduces the student to the central teachings and practices of major world religions, including Hinduism, Judaism, Buddhism, Christianity, and Islam. Ways in which religions have influenced, and been influenced by, history and culture are studied. The lives and teachings of representative religious figures are presented.

PHIL 2303 - LOGIC

3 Credits (3 hrs. lec.) This course teaches students to analyze and evaluate arguments using the formal techniques of modern symbolic logic. The basics of propositional logic are covered, including truth tables, proof construction, and the translation of natural language arguments into symbolic form. (3801015212) Prerequisite: ENGL 0305 and 0307, or 0316 and 0326

PHIL 2306 - INTRODUCTION TO ETHICS

3 Credits (3 hrs. lec.) This course explores the major problems and questions of moral philosophy from ancient to modern times by critically evaluating and applying various ethical theories and principles to historical and contemporary moral dilemmas. (3801015312) Prerequisite: ENGL 0305 and 0307, or 0316 and 0326

PHIL 2307 - SOCIAL & POLITICAL PHILOSOPHY

3 Credits (3 hrs. lec.) This course conducts a critical examination of the major theories concerning the organization of societies and governments. (3801015412) Prerequisite: ENGL 0305 and 0307, or 0316 and 0326

PHIL 2316 - HISTORY OF PHILOSOPHY I

3 Credits (3 hrs. lec.) This course presents the story of Western thought of the ancient through fifteenth century periods. Major figures are Plato, Aristotle, Augustine and Aquinas. (3801015512) Prerequisite: ENGL 0305 and 0307, or 0316 and 0326

PHIL 2317 - HISTORY OF PHILOSOPHY II

3 Credits (3 hrs. lec.) This course continues the History of Philosophy I from the sixteenth through the twentieth centuries. Major figures are Descartes, Spinoza, Leibnitz, Locke, Berkeley, Hume, Kant, Hegel, Mill, Marx, Nietzsche, and Kierkegaard. (3801015512) Prerequisite: ENGL 0305 and 0307, or 0316 and 0326
DESCRIPTION OF COURSES

PHIL 2321 - PHILOSOPHY OF RELIGION
3 Credits (3 hrs. lec.) This course uses philosophical methods of conceptual analysis and logical argumentation to illuminate and assess the central claims to truth made by major religions. Topics may include issues such as the nature of religious language, the existence and nature of God, the problem of evil, and the relationship of faith and reason. (3802015312) Prerequisite: ENGL 0305 and 0307, or 0316 and 0326

PHRA 1102 - PHARMACY LAW
1 Credit (1 hr. lec.) This course is a survey of federal and state laws governing the practice of pharmacy. It describes the legal and ethical constraints governing technician responsibilities and pharmacist responsibilities in various settings. Prerequisite: Admission to the program; ENGL 0305, ENGL 0306, MATH 0308

PHRA 1143 - PHARMACY TECHNICIAN CERTIFICATE REVIEW
1 Credit (1 hr. lec.) An overview of the major topics covered on the National Pharmacy Technician Certification examination. Prerequisite: PHRA 1361 or permission of Program director; ENGL 0305, ENGL 0306, MATH 0308

PHRA 1164 - PRACTICUM-PHARMACY TECHNICIAN ASSISTANT
1 Credit (10 hrs. ext.) Practical, general workplace training supported by an individualized learning plan developed by the employer, college, and student. Prerequisite: PHRA 1240; ENGL 0305, ENGL 0307, MATH 0308

PHRA 1206 - COMPUTERIZED DRUG DELIVERY SYSTEMS I
2 Credits (1 hr. lec., 2 hrs. lab.) Fundamentals of computer information systems and technology within the health care system. Includes specialized skills in the production of pharmaceutical documentation using selected pharmacy software packages. Prerequisite: ENGL 0305, ENGL 0307, MATH 0308

PHRA 1207 - ETHICS AND TEXAS PHARMACY LAW
2 Credits (2 hrs. lec.) The role of the pharmacy technician and the pharmacist and their associated responsibilities. Includes state law governing the practice of pharmacy, code of ethics, patient confidentiality, and a comparison of legal and ethical aspects, including criminal and civil statutes. Prerequisite: ENGL 0305, ENGL 0307, MATH 0308

PHRA 1240 - PHARMACY THIRD PARTY PAYMENT
2 Credits (2 hrs. lec., 1 hr. lab) Overview of the health care system and the impact of managed care on pharmacy reimbursements. Includes the principles and practices of managed care pharmacy, Medicaid and Medicare, payment plans, reimbursement methods, and formularies. Prerequisite: ENGL 0305, ENGL 0307, MATH 0308

PHRA 1304 - PHARMACOTHERAPY AND DISEASE PROCESS
3 Credits (3 hrs. lec.) A study of disease processes and the therapeutic properties of the drugs used in treatment. Prerequisite: PHRA 1361; ENGL 0305, ENGL 0306, MATH 0308

PHRA 1305 - DRUG CLASSIFICATION
3 Credits (3 hrs. lec.) This course is the study of pharmaceutical drugs, abbreviations, classifications, dosages, actions in the body, and routes of administration. Emphasis is on the location of drugs within a pharmacy, inventory control, safety, and quality assurance procedures. Prerequisite: Admission to the program; ENGL 0305, ENGL 0306, MATH 0308

PHRA 1309 - PHARMACEUTICAL MATHEMATICS I
3 Credits (3 hrs. lec.) Pharmaceutical mathematics includes reading, interpreting, and solving calculation problems encountered in the preparation and distribution of drugs. This course also discusses the conversion of measurements within the apothecary, avoirdupois, and metric systems with emphasis on the metric system of weight and volume. Topics include ratio and proportion, percentage, dilution and concentration, milliequivalent, units, intravenous flow rates, and solving dosage problems. Prerequisite: Admission to the program; ENGL 0305, ENGL 0306, MATH 0308

PHRA 1345 - INTRAVENOUS ADMIXTURE AND STERILE COMPOUNDING
3 Credits (2 hrs. lec., 2 hrs. lab.) Mastery of skills in compounding sterile products. Introduction to sterile products, hand washing techniques, pharmaceutical calculations, references, safety techniques, aseptic techniques in parenteral compounding, proper use of equipment (autoinjectors, pumps), preparation of sterile products (intravenous, irrigation, ophthalmic, total parenteral nutrition, and chemotherapy drugs), and safe handling of antineoplastic drugs. To be IV
certified, students must complete 160 hours of hospital internship as required for PHRA 2361. Prerequisite: PHRA 1361; ENGL 0305, ENGL 0306, MATH 0308

**PHRA 1347 - PHARMACEUTICAL MATHEMATICS II**

3 Credits (3 hrs. lec.) A continuation of Pharmaceutical Mathematics I. Topics address ratio and proportion, dilution and concentration, milliequivalent, units and intravenous flow rates. Prerequisites: PHRA 1361; ENGL 0305, ENGL 0306, MATH 0308

**PHRA 1361 - CLINICAL - COMMUNITY PHARMACY**

3 Credits (10 hrs. ext.) A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional. Prerequisite: Admission to the program; ENGL 0305, ENGL 0306, MATH 0308

**PHRA 1413 - COMMUNITY PHARMACY PRACTICE**

4 Credits (3 hrs. lec., 3 hrs. lab.) Community Pharmacy Practice provides general training necessary to interpret, prepare, label, and maintain records of physicians’ medication orders and prescriptions in a community pharmacy. The course is designed to train students in the administration of supply, inventory, and data entry. Topics include customer service and advisement, count and pour techniques, prescription calculations, drug selection and preparation, over-the-counter drugs, record keeping, stock level adjustment, data input and editing, and legal parameters. Prerequisite: Admission to the program; ENGL 0305, ENGL 0306, MATH 0308

**PHRA 1449 - INSTITUTIONAL PHARMACY PRACTICE**

4 Credits (3 hrs. lec., 3 hrs. lab.) Institutional Pharmacy Practice explores the unique role and practice of pharmacy technicians in an institutional pharmacy with emphasis on daily pharmacy operation. Topics include hospital pharmacy organization, work flow and personnel, medical and pharmaceutical terminology, safety techniques, data entry, packaging and labeling operations, extemporaneous compounding, inpatient drug distribution systems, unit dose chart fills, quality assurance, drug storage, and inventory control. Prerequisites: PHRA 1361; ENGL 0305, ENGL 0306, MATH 0308

**PHYS 1401 - GENERAL PHYSICS I**

4 Credits (3 hrs. lec., 3 hrs. lab.) This course includes the study of vector algebra, Newtonian mechanics, mechanical properties of matter, gases and kinetic theory, thermal properties of matter, thermodynamics, vibratory motion and sound. The study also includes an appropriate laboratory program illustrating the principles learned in lecture. This course is not for physical science and engineering majors but can serve as the Physics requirement for the pre-professional medical programs. (4008015303) Prerequisite: MATH 1316 or equivalent; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

**PHYS 1402 - GENERAL PHYSICS II**

4 Credits (3 hrs. lec., 3 hrs. lab.) A continuation of PHYS 1401, including the study of electrostatic forces, fields and potentials, DC and AC circuits, magnetism, electromagnetic waves, the reflection, refraction, diffraction and interference of light and introduction modern physics. Also included is an appropriate laboratory program illustrating the principles learned in lecture. This course is also not for physical science and engineering majors but can serve as the Physics requirement for the pre-professional medical programs. (4008015303) Prerequisite: PHYS 1401; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

**PHYS 1410 - ELEMENTARY PHYSICS**

4 Credits (3 hrs. lec., 3 hrs. lab.) Conceptual level survey of topics in physics intended for liberal arts and other non-science majors. This course offers the opportunities for the students to explore the basic principles in motion, matter, heat, sound, electricity, light, and modern physics. It includes an appropriate laboratory program. (4008015103) Prerequisite: TECM 1303 or MATH 0310; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

**PHYS 1411 - PLANETARY ASTRONOMY**

4 Credits (3 hrs. lec., 3 hrs. lab.) This is an introductory course that will concentrate on the origin, life and fate of the solar system, the various bodies in the solar
DESCRIPTION OF COURSES

system and solar system mechanics. An appropriate laboratory program may include real-time telescope observations, field trips and internet research. This is a course for non-science majors who need natural science credit or anyone who wants to study the wonders of the universe. (4002015103) Prerequisite: MATH 0306 or departmental approval; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing.

**PHYS 1412 - STELLAR ASTRONOMY**

4 Credits (3 hrs. lec., 3 hrs. lab.) This is an introductory course that will concentrate on the origin, life and fate of the stars and the universe, the various objects in the universe, the exploration of the universe by astronomers and the understanding of the principles that lie behind the functioning of the universe. An appropriate laboratory program will include real-time telescope observations, field trips and experience with more advanced observing techniques. This is a course for non-science majors who need natural science credit or anyone who wants to study the wonders of the universe. (4002015103) Prerequisite: MATH 0306 or departmental approval; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing.

**PHYS 2425 - MECHANICS AND HEAT**

4 Credits (3 hrs. lec., 3 hrs. lab.) This course includes the study of measurement, vector algebra, one- and two- dimensional motion, Newton's laws of motion, kinematics, momentum and collisions, rotational motion and angular momentum, elasticity, oscillations and gravitational interactions, fluids, waves, temperature and the laws of thermodynamics. It also includes an appropriate laboratory program illustrating the principles learned in lecture. This course is primarily for physical science and engineering majors. (4008015403) Prerequisite: PHYS 2413, or departmental approval; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing.

**PHYS 2426 - ELECTRICITY, MAGNETISM, AND LIGHT**

4 Credits (3 hrs. lec., 3 hrs. lab.) This course is a continuation of PHYS 2425, including the study of electrostatics, Gauss's law, circuit theory, magnetism and Faraday's laws, electromagnetic waves and Maxwell's equations, geometric and physical optics, and introduction to modern physics. It includes an appropriate laboratory program illustrating the principles learned in lecture. This course is primarily for physical science and engineering majors. (4008015403) Prerequisite: PHYS 2425; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing.

**POFL 1303 - LEGAL OFFICE PROCEDURES**

3 Credits (2 hrs. lec., 3 hrs. lab.) Study of the administrative duties of support personnel in a law office including issues involved in understanding and using social, organizational, and technological systems. This class is the capstone course for the Legal Office Receptionist certificate. Prerequisite: None.

**POFL 1305 - LEGAL TERMINOLOGY**

3 Credits (3 hrs. lec.) Spelling, pronunciation, and definition of legal terms. Includes an overview of the areas of law and legal professions. Prerequisite: Keyboarding proficiency.

**POFL 1355 - LEGAL ISSUES FOR MEDICAL DOCUMENTS**

3 Credits (3 hrs. lec.) A study of the legal implications regarding medical documents. Prerequisite: POFL 1371, keyboarding/computer skills; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing.

**POFL 2305 - LEGAL RESEARCH**

3 Credits (2 hrs. lec., 3 hrs. lab.) Exploration of legal issues utilizing current and emerging research techniques. Prerequisite: POFL 1371.

**POFL 2380 - COOPERATIVE EDUCATION - LEGAL ADMINISTRATIVE ASSISTANT/SECRETARY**

3 Credits (1 hr. lec., 20 hrs. ext.) Career-related activities encountered in the student’s area of specialization offered through an individualized agreement among the college, employer, and student. Under the supervision of the college and the employer, the student combines classroom learning with work experience. Includes a lecture component. Prerequisite: Enrollment in Professional Office Technology/legal track AAS degree or certificate program; completion of 15 credits in degree plan; approval of coordinator.
POFM 1300 - MEDICAL CODING BASICS
3 Credits (2 hrs. lec., 2 hrs. lab.) Presentation and application of basic coding rules, principles, guidelines, and conventions utilizing various coding systems. Prerequisite: HITT 1305

POFM 1302 - MEDICAL SOFTWARE APPLICATIONS
3 Credits (2 hrs. lec., 3 hrs. lab.) Medical software applications for the management and operation of health care information systems. Prerequisite: Basic keyboarding and computer skills are suggested prerequisites, but the course can be taken concurrently with ITSC 1401 or COSC 1401; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing; Corequisites: ITSC 1401 or COSC 1401

POFM 1309 - MEDICAL OFFICE PROCEDURES
3 Credits (2 hrs. lec., 3 hrs. lab.) Introduction to basic medical office skills including telephone techniques, filing and indexing, mail handling, appointment scheduling, travel arrangements, correspondence, and business transactions. Emphasis on human relations and customer service skills. This class is the capstone course for the Medical Office Receptionist certificate. Prerequisite: None

POFM 1317 - MEDICAL ADMINISTRATIVE SUPPORT
3 Credits (3 hrs. lec., 1 hr. lab.) Instruction in medical office procedures including appointment scheduling, medical records creation and maintenance, telephone communications, coding, billing, collecting, and third party reimbursement. Prerequisite: ENGL 0305, 0313 or ENGL 0316; ENGL 0307 or ENGL 0326; or placement by testing

POFM 1327 - MEDICAL INSURANCE
3 Credits (2 hrs. lec., 3 hrs. lab.) Survey of medical insurance including the life cycle of various claim forms, terminology, litigation, patient relations, and ethical issues. This is a capstone course for medical front office specialist certificate. Prerequisite: HITT 1305

POFM 2310 - INTERMEDIATE MEDICAL CODING
3 Credits (2 hrs. lec., 3 hrs. lab.) Assignment and application of ICD, CPT, and HCPCS coding guidelines with emphasis on physician billing and regulatory requirements. Includes code selection for Evaluation and Management (E/M) and Medical/Surgical cases. Prerequisite: HITT 1213 or POFM 1300; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

POFM 2333 - MEDICAL DOCUMENT PRODUCTION
3 Credits (2 hrs. lec., 3 hrs. lab.) Study of advanced concepts of medical office activities, practices, and procedures. Topics include advanced medical report, coding, billing, insurance activities, and records management. Prerequisite: POFM 1309 OR POFM 1317; ENGL 0305, 0313 or ENGL 0316; ENGL 0307 or ENGL 0326; or placement by testing

POFM 2380 - COOPERATIVE EDUCATION - MEDICAL ADMINISTRATIVE ASSISTANT/SECRETARY
3 Credits (1 hr. lec., 20 hrs. ext.) Career-related activities encountered in the student’s area of specialization offered through an individualized agreement among the college, employer, and student. Under the supervision of the college and the employer, the student combines classroom learning with work experience. Includes a lecture component. Prerequisite: Enrollment in Professional Office Technology/medical track AAS degree or certificate program; completion of 15 credits in degree plan; approval of coordinator

POFM 2381 - COOPERATIVE EDUCATION - MEDICAL ADMINISTRATIVE ASSISTANT/SECRETARY II
3 Credits (1 hr. lec., 20 hrs. ext.) Career-related activities encountered in the student’s area of specialization offered through an individualized agreement among the college, employer, and student. Under the supervision of the college and the employer, the student combines classroom learning with work experience. Includes a lecture component. Prerequisite: Completion of at least 15 credits in degree or certificate plan

POFM 2386 - INTERNSHIP - MEDICAL ADMINISTRATIVE ASSISTANT/SECRETARY
3 Credits (9 hrs. ext.) A work-based learning experience that enables the student to apply specialized occupational theory, skills and concepts. A learning plan is developed by the college and the employer. Prerequisite: HITT 1305, Completion of at least 15 credits in degree or certificate plan

POFT 1301 - BUSINESS ENGLISH
3 Credits (2 hrs. lec., 3 hrs. lab.) Introduction to a practical application of basic language usage skills with emphasis on fundamentals of writing and editing for business. Prerequisite: None
DESCRIPTION OF COURSES

POFT 1303 - BILINGUAL BUSINESS WRITING
3 Credits (2 hrs. lec., 3 hrs. lab.) Designed for bilingual English/Spanish students who are proficient in Spanish. This course is designed to give students the tools for developing professional business correspondence in both Spanish and English. Emphasis is placed on proofreading, grammar, spelling, vocabulary, and composing business letters in both English and Spanish. Prerequisite: Recommended fluency in written and spoken Spanish.

POFT 1309 - ADMINISTRATIVE OFFICE PROCEDURES I
3 Credits (2 hrs. lec., 3 hrs. lab.) Study of current office procedures, duties, and responsibilities in an office environment. Prerequisite/Corequisite: Keyboarding proficiency recommended.

POFT 1325 - BUSINESS MATH & MACHINE APPLICATIONS
3 Credits (2 hrs. lec., 3 hrs. lab.) Skill development in the use of electronic calculators and business math functions. Emphasis on business problem-solving skills using spreadsheet software and/or electronic calculator/keyboard. Prerequisite: None.

POFT 1329 - KEYBOARDING & DOCUMENT FORMATTING
3 Credits (1 hr. lec., 4 hrs. lab.) Skill development in the operation of the keyboard by touch applying proper keyboarding techniques. Emphasis on development of acceptable speed and accuracy levels and formatting basic documents. Prerequisite: None.

POFT 1371 - BILINGUAL BUSINESS WRITING
3 Credits (2 hrs. lec., 3 hrs. lab.) Designed for bilingual English/Spanish students who are proficient in Spanish. This course is designed to give students the tools for developing professional business correspondence in both Spanish and English. Emphasis is placed on proofreading, grammar, spelling, vocabulary, and composing business letters in both English and Spanish. Prerequisite: POFT 1329 and pass diagnostic test. Recommended placement of ENGL 0307 or 0326 or higher on ASSET or COMPASS test and fluency in written and spoken Spanish.

POFT 2301 - INTERMEDIATE KEYBOARDING
3 Credits (1 hr. lec., 4 hrs. lab.) A continuation of keyboarding skills in document formatting, speed, and accuracy. Emphasis on proofreading, editing, and following instructions, and keying documents from various copy. Prerequisite: POFT 1329 or ITSW 1301; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing.

POFT 2331 - ADMINISTRATIVE SYSTEMS
3 Credits (2 hrs. lec., 3 hrs. lab.) Advanced concepts of project management and office procedures utilizing integration of previously learned office skills. Prerequisite: ITSC 1401 or ITSW 1301 or COSC 1401; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing.

POFT 2380 - COOPERATIVE EDUCATION - ADMINISTRATIVE ASSISTANT/SECRETARIAL SCIENCE GENERAL
3 Credits (1 hr. lec., 20 hrs. ext.) Career-related activities encountered in the student’s area of specialization offered through an individualized agreement among the college, employer, and student. Under the supervision of the college and the employer, the student combines classroom learning with work experience. Includes a lecture component. Prerequisite: Enrollment in Professional Office Technology AAS degree or certificate program; completion of 15 credits in degree plan; approval of coordinator.

POFT 2381 - COOPERATIVE EDUCATION - ADMINISTRATIVE ASSISTANT/SECRETARIAL SCIENCE GENERAL II
3 Credits (1 hr. lec., 20 hrs. ext.) Career-related activities encountered in the student’s area of specialization offered through an individualized agreement among the college, employer, and student. Under the supervision of the college and the employer, the student combines classroom learning with work experience. Includes a lecture component. Prerequisite: POFT 2380; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing.

POFT 2386 - INTERNSHIP - ADMINISTRATIVE ASSISTANT
3 Credits (9 hrs. ext.) A work-based learning experience that enables the student to apply specialized occupational theory, skills and concepts. A learning plan is developed by the college and the employer. Prerequisite: POFT 2331.
DESCRIPTION OF COURSES

**PSYC 1301 - HUMAN RELATIONS**

3 Credits (3 hrs. lec.) This course assists students to understand theories, principles and behaviors involved in the development of human relationships. Emphasis is given to the development of self concept and major aspects of interpersonal communication. Students learn to identify, understand, analyze and apply principles drawn from the assigned text and other sources. Practical exercises are incorporated. (PSYC 1301 is not the equivalent of general psychology but may transfer as a general elective). (4201015625) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

**PSYC 2301 - GENERAL PSYCHOLOGY**

3 Credits (3 hrs. lec.) An introductory course dealing with the elementary principles of human behavior. Designed especially for those students majoring in the social or biological sciences, premedicine, or education. (4201015125) Prerequisite: College level reading scores; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

**PSYC 2302 - APPLIED PSYCHOLOGY**

3 Credits (3 hrs. lec.) A survey of the application of psychological knowledge and methods in the fields of business, industry, education, medicine, mental health, law enforcement, environmental science, and consumer behavior. (4201015225) Prerequisite: PSYC 2301; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

**PSYC 2306 - HUMAN SEXUALITY**

3 Credits (3 hrs. lec.) An examination of sexual myths, functions, attitudes, behaviors, dysfunctions, and variations in sexual behavior in order to increase knowledge, awareness, and understanding. Class experience will emphasize the value-clarification process and examine the role of values in personal decision making. (4201015325) Prerequisite: PSYC 2301 or departmental approval; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

**PSYC 2308 - CHILD GROWTH AND DEVELOPMENT**

3 Credits (3 hrs. lec.) A study of physical and psychological development from conception through adolescence with emphasis on factors which influence growth and development. Students who have taken PSYC 2314 must have instructor approval to enroll in PSYC 2308. (4207015125) Prerequisite: PSYC 2301 or departmental approval; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

**PSYC 2314 - LIFE-SPAN GROWTH AND DEVELOPMENT**

3 Credits (3 hrs. lec.) A study of development from conception to death with emphasis on factors which influence growth and development. Consideration will be given to social, emotional, cognitive, and physical growth and development at each period of the life-span. Students who have taken PSYC 2308 must have instructor approval to enroll in PSYC 2314. (4207015125) Prerequisite: PSYC 2301; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

**PSYC 2315 - PSYCHOLOGY OF ADJUSTMENT**

3 Credits (3 hrs. lec.) An examination of psychological issues common to everyday life. Topics include issues of personal growth and development, relationship factors, stress and behavioral control, and behavioral change. (4201015625) Prerequisite: PSYC 2301; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

**PSYC 2316 - PSYCHOLOGY OF PERSONALITY**

3 Credits (3 hrs. lec.) An examination of the major personality theories and ideas within the field of psychology. Includes, but not limited to, psychoanalytic, Neo-Freudian, humanistic and behavioral ideas and methods of personality measurement. (4201015725) Prerequisite: PSYC 2301; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

**PSYC 2317 - BASIC STATISTICS**

3 Credits (3 hrs. lec.) Introduction to basic statistical concepts including measures of central tendency, variability, and statistical inference. Some emphasis is placed on t-test, correlation, and analysis of variance. (4201015225) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing. Math 0310
DESCRIPTION OF COURSES

PSYC 2319 - SOCIAL PSYCHOLOGY
3 Credits (3 hrs. lec.) The course focuses on individual behavior as affected by cultural and social stimuli. Social behavior, interpersonal influence, group membership, and the relations between persons and social systems are emphasized. (4216015125) Prerequisite: SOCI 1301 or PSYC 2301 or departmental approval; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

PTHA 1201 - THE PROFESSION OF PHYSICAL THERAPY
2 Credits (2 hrs. lec.) Introduction to the profession of physical therapy including the historical and current scope of physical therapy. Prerequisite: ENGL 0304 or ENGL 0315 AND ENGL 0306 or 0325, OR higher level course (ENGL 1301), OR placement by testing

PTHA 1225 - COMMUNICATION IN HEALTH CARE
2 Credits (2 hrs. lec.) Communication theories and principles for optimal delivery of health care. Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing; Corequisite: PTHA 1225 and 1413

PTHA 1260 - CLINICAL - PHYSICAL THERAPIST ASSISTANT
2 Credits (6 hrs. ext.) A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional. Prerequisite: PTHA 1225, 1305 and 1413; Corequisite: PTHA 1360

PTHA 1291 - SPECIAL TOPICS IN PHYSICAL THERAPY ASSISTANT
2 Credits (2 hrs. lec.) The course is designed so that student physical therapist assistants will learn the theory and application of physical therapy procedures, or other activities in specialized areas of physical therapist assistant practice, in order to gain advanced competency in these areas. Topics may include sports rehabilitation, oncology, pediatrics, geriatrics/rehabilitation, wound care, hippotherapy, orthopedics/manual therapy, myofascial release, craniosacral therapy, acute care, aquatics and home health. The emphasis of this series of classes will be on specialized areas of physical therapy practice. Top-ics address recently identified current events, skills, knowledge, and/or attitudes and behaviors pertinent to the technology or occupation and relevant to the professional development of the student. Prerequisite: PTHA 1321 and 2409

PTHA 1305 - BASIC PATIENT CARE SKILLS
3 Credits (2 hrs. lec., 3 hrs. lab.) Introduction to the theory and application of basic patients handling/functional skills and assessment techniques. Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing; MATH 0310 or placement by testing; Corequisite: PTHA 1225 and 2409

PTHA 1321 - PATHOPHYSIOLOGY
3 Credits (3 hrs. lec.) Study of the pathogenesis, prognosis, and therapeutic management of diseases/conditions commonly encountered in physical therapy. Prerequisite: PTHA 1260, 1431, 2201, and 2435; Corequisite: PTHA 2409

PTHA 1360 - CLINICAL - PHYSICAL THERAPIST ASSISTANT
3 Credits (9 hrs. ext.) A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional. Prerequisite: PTHA 1291; Corequisite: PTHA 1360

PTHA 1361 - CLINICAL - PHYSICAL THERAPIST ASSISTANT
3 Credits (1 hr. lec., 9 hrs. ext.) A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional. Prerequisite: PTHA 1291; Corequisite: PTHA 1360

PTHA 1413 - FUNCTIONAL ANATOMY
4 Credits (3 hrs. lec., 4 hrs. lab.) Study of human anatomy and its application to the motion of the musculoskeletal system as it relates to normal activities and dysfunctions. Integration of skills related to the kinesiological assessment of the human body. Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing; MATH 0310; Corequisite: PTHA 1225 and 1305
PTHA 1431 - PHYSICAL AGENTS
4 Credits (3 hrs. lec., 4 hrs. lab.) Biophysical principles and application of therapeutic physical agents with specific emphasis on indications, contraindications, medical efficacy, and physiological effects. Prerequisite: PTHA 1225, 1305, and 1413; Corequisite: PTHA 1260, 2201 and 2435

PTHA 2201 - ESSENTIALS OF DATA COLLECTION
2 Credits (2 hrs. lec., 2 hrs. lab.) Data collection techniques used to prepare the physical therapist assistant to assist in physical therapy management. Prerequisite: PTHA 1225, 1305, and 1413; Corequisite: PTHA 1260, 1431 and 2435

PTHA 2217 - ISSUES IN HEALTH CARE
2 Credits (2 hrs. lec.) Discuss organizational patterns, administrative principles, and legal and ethical issues. Includes communications skills and licensure and employment acquisition skills. Prerequisite: PTHA 1321 and 2409

PTHA 2360 - CLINICAL - PHYSICAL THERAPIST ASSISTANT
3 Credits (9 hrs. ext.) A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional. Prerequisite: PTHA 1360 and 1361; Corequisite: PTHA 2361

PTHA 2361 - CLINICAL - PHYSICAL THERAPIST ASSISTANT
3 Credits (9 hrs. ext.) A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional. Prerequisite: PTHA 1360 and 1361; Corequisite: PTHA 2360

PTHA 2409 - THERAPEUTIC EXERCISE
4 Credits (3 hrs. lec., 4 hrs. lab.) Concepts, principles, and application of techniques related to therapeutic exercise and functional training. Prerequisite: PTHA 1260, 1431, 2201 and 2435; Corequisite: PTHA 1321

PTHA 2435 - REHABILITATION TECHNIQUES
4 Credits (3 hrs. lec., 3 hrs. lab.) Advanced course integrating previously learned and new skills/techniques into the comprehensive rehabilitation of selected long-term pathologies. Prerequisite: PTHA 1225, 1305 and 1413; Corequisite: PTHA 1260, 1431, and 2201

PTRT 1424 - PETROLEUM INSTRUMENTATION
4 Credits (3 hrs. lec., 3 hrs. lab.) Surveys the instruments, measurements, and control devices used within the major aspects of the petroleum industry, basic terminology, functions, and applications of the various instruments will be discussed. Prerequisite: IEIR 1310 and INTC 1343

QCTC 1303 - QUALITY CONTROL
3 Credits (3 hrs. lec.) Information on quality control principles and applications. Designed to introduce the student to the quality control profession. The student will be introduced to the use of statistical analysis of data to establish control systems for use in product manufacturing. Prerequisite: MATH 1314 and MCHN 1319; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

QCTC 1371 - PRESSURE VESSELS CODES
3 Credits (2 hrs. lec., 2 hrs. lab.) Topics address recently identified current events, skills, knowledge, and/or attitudes and behaviors pertinent to the technology or occupation and relevant to the professional development of the student. A course in the requirements of inspection of pressure vessels including ASME Code Structure, function and requirements, Nondestructive Examination, Maintenance Inspection, Repairs and Alterations and Pressure Vessel Inspection Code. Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

QCTC 1446 - TESTING AND INSPECTION SYSTEMS
4 Credits (4 hrs. lec.) A study of testing and inspection systems including pertinent specifications, inspection tools, gauges, instruments, and mechanisms, used in illustrating the need for maintaining quality to established standards. Prerequisite: None

QCTC 2331 - STANDARDS
3 Credits (2 hrs. lec., 2 hrs. lab.) A study of the philosophy and theory of standards, appropriate standards organizations, and systems integration relating to the application of standards criteria in society. Prerequisite: None
DESCRIPTION OF COURSES

RADR 1260 - CLINICAL *

2 Credits (12 hrs. ext.) A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional. Prerequisite: RADR 1409, 1411, and 1313

RADR 1261 - CLINICAL *

2 Credits (12 hrs. ext.) A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional. Prerequisite: RADR 1260

RADR 1313 - PRINCIPLES OF RADIOGRAPHIC IMAGING I

3 Credits (3 hrs. lec.) An introduction to radiographic image qualities and the effects of exposure variables upon these qualities. Prerequisite: Admission to the program

RADR 1360 - CLINICAL *

3 Credits (18 hrs. ext.) A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional. Prerequisite: RADR 1261

RADR 1409 - INTRODUCTION TO RADIOGRAPHY AND PATIENT CARE

4 Credits (3 hrs. lec., 2 hrs. lab.) An overview of the historical development of radiography, basic radiation protection, an introduction to medical terminology, ethical and legal issues for health care professionals, and an orientation to the program and to the health care system. Patient assessment, infection control procedures, emergency and safety procedures, communication and patient interaction skills, and basic pharmacology are also included. Prerequisite: Admission to the program

RADR 1411 - BASIC RADIOGRAPHIC PROCEDURES

4 Credits (3 hrs. lec., 2 hrs. lab.) An introduction to radiographic positioning terminology, the proper manipulation of equipment, positioning and alignment of the anatomical structure and equipment, and evaluation of images for proper demonstration of basic anatomy. Prerequisite: Admission to the program

RADR 2217 - RADIOGRAPHIC PATHOLOGY

2 Credits (2 hrs. lec.) A presentation of disease processes and their appearance on radiographic images. Prerequisite: RADR 2309

RADR 2305 - PRINCIPLES OF RADIOGRAPHIC IMAGING II

3 Credits (3 hrs. lec.) A continuation of radiographic imaging technique formulation. Includes equipment quality control, image quality assurance, and the synthesis of all variables in image production. Prerequisite: RADR 1313

RADR 2309 - RADIOGRAPHIC IMAGING EQUIPMENT

3 Credits (3 hrs. lec.) A study of the equipment and physics of x-ray production. Includes basic x-ray circuits. Also examines the relationship of conventional and digital equipment components to the imaging process. Prerequisite: RADR 2305

RADR 2313 - RADIATION BIOLOGY AND PROTECTION

3 Credits (3 hrs. lec.) A study of the effects of radiation exposure on biological systems. Includes typical medical exposure levels, methods for measuring and monitoring radiation, and methods for protecting personnel and patients from excessive exposure. Prerequisite: BIOL 2402 and RADR 2331

RADR 2331 - ADVANCED RADIOGRAPHIC PROCEDURES

3 Credits (3 hrs. lec.) Continuation of positioning; alignment of the anatomical structure and equipment, evaluation of images for proper demonstration of anatomy and related pathology. Prerequisite: RADR 2401

RADR 2335 - RADIOLOGIC TECHNOLOGY SEMINAR

3 Credits (3 hrs. lec.) A capstone course focusing on the synthesis of professional knowledge, skills, and attitudes in preparation for professional employment and lifelong learning. Prerequisite: RADR 2360

RADR 2340 - SECTIONAL ANATOMY FOR MEDICAL IMAGING

3 Credits (3 hrs. lec.) In-depth coverage of anatomic relationships that are present under various sectional orientations as depicted by medical imaging. Prerequisite: Admission to program
**RADR 2360 - CLINICAL**

3 Credits (18 hrs. ext.) A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional. Prerequisite: RADR 1261

**RADR 2361 - CLINICAL**

3 Credits (18 hrs. ext.) A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional. Prerequisite: RADR 2360

**RADR 2401 - INTERMEDIATE RADIOGRAPHIC PROCEDURES**

4 Credits (3 hrs. lec., 2 hrs. lab.) A continuation of the study of the proper manipulation of radiographic equipment, positioning and alignment of the anatomical structure and equipment, and evaluation of images for proper demonstration of intermediate anatomy. Prerequisite: RADR 1411

**RBTC 1401 - PROGRAMMABLE CONTROLLERS**

4 Credits (3 hrs. lec., 3 hrs. lab.) A study in programmable controllers. Topics include processor units, numbering systems, memory organization, relay type devices, times, counters, data manipulators and programming and troubleshooting skills on a cross section of industrial PLCs. Prerequisite: None

**RELI 1311 - OLD TESTAMENT SURVEY**

3 Credits (3 hrs. lec.) This course presents the historical, cultural, and literary approaches to understanding the religious themes of the Hebrew Bible. This course is in a non-funded course and may not transfer. Prerequisite: ENGL 0305, 0307, 0313, 0316, 0326

**RELI 1312 - NEW TESTAMENT SURVEY**

3 Credits (3 hrs. lec.) This course presents the historical, cultural, and literary approaches to understanding the religious themes of the New Testament. This course is in a non-funded course and may not transfer.

**RNSG 1115 - HEALTH ASSESSMENT**

1 Credit (3 hrs. lab.) Development of skills and techniques required for a comprehensive health assessment within a legal/ethical framework. Prerequisite: ENGL 1301, BIOL 2401, PSYC 2301; Corequisite: BIOL 2402, RNSG 1144, 1146, 1209 and 1105, SOCI 1301

**RNSG 1119 - INTEGRATED NURSING SKILLS I**

1 Credit (3 hrs. lab.) Study of the concepts and principles essential for demonstrating competency in the performance of basic nursing skills for care of diverse clients across the life span. Topics include knowledge, judgment, skills, and professional values within a legal/ethical framework. Skills include basic physical assessment, communication, dosage calculations, medical asepsis, hygiene, and administration of oral, topical, ophthalmic, otic, vaginal, and rectal medications. Prerequisite: RNSG 1172, PSYC 2301, and admission to the ADN program; Corequisite: RNSG 1361 and 1523, BIOL 2402

**RNSG 1129 - INTEGRATED NURSING SKILLS II**

1 Credits (3 hrs. lab.) Study of the concepts and principles necessary to perform intermediate or advanced nursing skills for care of diverse clients across the life span. Topics include knowledge, judgment, skills, and professional values within a legal/ethical framework. Skills include surgical asepsis, wound care, urinary catheterization, intravenous therapy, enteral tube insertion and care, administration of intramuscular, subcutaneous, and intradermal medications, and intermediate physical assessment skills. Prerequisite: ENGL 1301, RNSG 1119, 1301, 1523, 1361; Corequisites: RNSG 1362 and 2504

**RNSG 1144 - NURSING SKILLS II**

1 Credit (3 hrs. lab.) Study of the concepts and principles necessary to perform intermediate or advanced nursing skills; and demonstrate competence in the performance of nursing procedures. Topics include knowledge, judgment, skills and professional values within a legal/ethical framework. Prerequisite: BIOL 2401, PSYC 2301, ENGL 1301; Corequisite: RNSG 1105, 1209, 1115, 1146

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*Cy-Fair and Montgomery College offer these courses in different semesters so the weekly hours may differ (12 hrs/wk in the fall and 16 hrs/wk in the summer.)*
DESCRIPTION OF COURSES

RNSG 1146 - LEGAL AND ETHICAL ISSUES FOR NURSES
1 Credit (1 hr. lec.) Study of the laws and regulations related to the provision of safe and effective professional nursing care; attention given to the development of a framework for addressing ethical issues; and topics to include confidentiality, the Nursing Practice Act, professional boundaries, ethics, and health care legislation. Prerequisite: BIOL 2401, PSYC 2301, ENGL 1301; Corequisite: RNSG 1105, 1115, 1144, 1209

RNSG 1172 - PREPARATION FOR BASIC CARE
1 Credit (3 hrs. lab.) Introduction to basic nursing care skills that are fundamental to all nursing care. Topics include development of skills and techniques required for a comprehensive assessment in a contextual framework and the theoretical concepts that serve as a foundation for skills. Articulated credit may be available. Prerequisite: BIOL 2401, PSYC 2301, ENGL 1301

RNSG 1201 - PHARMACOLOGY
2 Credits (2 hrs. lec.) Introduction to the science of pharmacology with emphasis on the actions, interactions, adverse effects, and nursing implications of each drug classification. Topics include the roles and responsibilities of the nurse in safe administration of medications within a legal/ethical framework. Prerequisite: RNSG 1261; BIOL 2402; Corequisite: RNSG 1343 and 1462

RNSG 1209 - INTRODUCTION TO NURSING
2 Credits (2 hrs. lec.) Overview of nursing and the role of the professional nurse as a provider of care, coordinator of care, and member of a profession. Topics include knowledge, judgment, skills and professional values within a legal/ethical framework. Prerequisite: BIOL 2401, PSYC 2301, ENGL 1301; Corequisite: RNSG 1105, 1144, 1215, BIOL 2402, SOCI 1301

RNSG 1260 - CLINICAL-NURSING FOR ARTICULATING STUDENTS
2 Credits (6 hrs. ext.) A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional. Prerequisite: Admission to Nursing RN Transition program and PSYC 2301, 2314, BIOL 2401, 2402, 2420, ENGL 1301, RNSG 1301, SOCI 1301; Corequisite: RNSG 1417

RNSG 1261 - CLINICAL-COMMON CONCEPTS OF ADULT HEALTH
2 Credits (6 hrs. ext.) A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional. Prerequisite: RNSG 1144, BIOL 2402, SOCI 1301; Corequisite: RNSG 1341

RNSG 1301 - PHARMACOLOGY
3 Credits (2 hrs. lec., 2 hrs. lab.) Introduction to the science of pharmacology with emphasis on the actions, adverse effects, and nursing implications of each drug classification. Topics include the roles and responsibilities of the nurse in safe administration of medications within a legal/ethical framework. Prerequisite: BIOL 2401 or current licensure as RN, LVN, or Paramedic; Corequisite: BIOL 2402

RNSG 1341 - COMMON CONCEPTS OF ADULT HEALTH
3 Credits (3 hrs. lec.) Study of the general principles of caring for selected adult clients and families with common health needs in a structured setting. Emphasis on knowledge, judgment, skills and professional values within a legal/ethical framework. Prerequisite: RNSG 1144, BIOL 2402, SOCI 1301; Corequisite: RNSG 1261

RNSG 1343 - COMPLEX CONCEPTS OF ADULT HEALTH
3 Credits (3 hrs. lec.) Integration of previous knowledge and skills related to common adult health needs into the continued development of the professional nurse as a provider of care, coordinator of care, and member of a profession in the care of adult clients/families in structured health care settings with complex medical surgical health care needs associated with each body system. Emphasis on knowledge, judgments, skills and professional values within a legal/ethical framework. Prerequisite: BIOL 2420, RNSG 1261; Corequisite: RNSG 1201 and 1462

RNSG 1361 - CLINICAL-NURSING I
3 Credits (3 hrs. lec.) Integration of previous knowledge and skills related to common adult health needs into the continued development of the professional nurse as a provider of care, coordinator of care, and member of a profession in the care of adult clients/families in structured health care settings with complex medical surgical health care needs associated with each body system. Emphasis on knowledge, judgments, skills and professional values within a legal/ethical framework. Prerequisite: BIOL 2420, RNSG 1261; Corequisite: RNSG 1201 and 1462
RNSG 1362 - CLINICAL - NURSING II
3 Credits (9 hrs. ext.) A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional. Prerequisite: RNSG 1119, 1361, 1523, 1301; BIOL 2402; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing; Corequisite: RNSG 1129 and 2504

RNSG 1417 - CONCEPTS OF NURSING PRACTICE I FOR ARTICULATING STUDENTS
4 Credits (4 hrs. lec.) Provides the articulating student the opportunity to examine the role of the professional nurse; application of a systematic problem-solving process and critical thinking skills which includes a focus on the adult population in selected settings; and competency in knowledge, judgment, skill, and professional values within a legal/ethical framework. Prerequisite: Admission to Nursing RN transition program, BIOL 2401, 2402, 2420, ENGL 1301, PSYC 2301, 2314, SOCI 1301, RNSG 1301; Corequisite: RNSG 1260

RNSG 1462 - CLINICAL: CONCEPTS OF ADULT HEALTH
4 Credits (12 hrs. ext.) A health related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional. Prerequisite: BIOL 2420, RNSG 1215, 1261, 1309, and 1341; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing; Corequisite: PSYC 2314, RNSG 1201, 1244, and 1343

RNSG 1523 - INTRO TO PROFESSIONAL NURSING FOR INTEGRATED PROGRAMS
5 Credits (4 hrs. lec., 2 hrs. lab.) Introduction to the profession of nursing including the roles of the registered nurse with emphasis on health promotion and primary disease prevention across the life span; essential components of the nursing health assessment; identification of deviations from expected health patterns; the application of a systematic, problem-solving process to provide basic nursing care to diverse clients across the life span; and applicable competencies in knowledge, judgment, skills, and professional values within a legal/ethical framework. This initial course focuses on basic human needs; health related learning needs; nursing process, concepts of mental/physical health, decision making, scientific principles, critical thinking, and resource management as a basis for nursing action. Assessment, communication, cultural and developmental diversities, medication math skills, and principles related to pharmacology, and basic nursing skills are taught in selected classroom, laboratory, seminar, and clinical activities. Prerequisite: Admission to ADN program, BIOL 2401 and RNSG 1172; Corequisite: RNSG 1119 and 1361

RNSG 2162 - CLINICAL: MENTAL HEALTH NURSING
1 Credit (3 ext. hrs.) A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional. Prerequisite: RNSG 1462, PSYC 2314; Corequisite: RNSG 2201, 2208, 2213, 2260, 2261

RNSG 2171 - ROLE TRANSITION FOR ARTICULATING STUDENTS
1 Credit (1 hr. lec.) This is the third course in the sequence for licensed vocational nurses in preparation for transition to the professional nursing role. It includes exploration of the role of the professional nurse as a provider of care, coordinator of care, member of a profession, application of knowledge, judgment, skills and professional values within a legal/ethical framework. The focus is on role transition, including assessment, analysis of data, nursing process, pharmacology, interdisciplinary team process, communication process, and legal/ethical responsibilities. Prerequisites: RNSG 1260, 1301, 1417, 2173, 2361, 2514; Corequisites: RNSG 2230, 2362, and 2535

RNSG 2173 - ADVANCED NURSING SKILLS
1 Credit (3 hrs. lab.) Study of the concepts and principles necessary to perform advanced nursing skills. Topics include knowledge, judgment, skills, critical decision-making, and professional values within a legal/ethical framework. Skills include venipuncture, intravenous medication administration, care of the violent patient, advanced EKG interpretation, ventilator care, chest tubes, problem-solving, phlebotomy, tracheostomy care, suctioning, central line dressing changes, and total parenteral nutrition. Prerequisite: RNSG 1129, 2504, ENGL 1301, BIOL 2420, PSYC 2314, SOCI 1301; Corequisite: RNSG 2361 and 2514

RNSG 2201 - CARE OF CHILDREN AND FAMILIES
2 Credits (2 hrs. lec.) Study of concepts related to the provision of nursing care for children and their families, emphasizing judgment and professional values within a legal/ethical framework. Prerequisites:
DESCRIPTION OF COURSES

PSYC 2314, RNSG 1462; Corequisites: RNSG 2162, 2208, 2213, 2260, 2261, and SPCH 1318

RNSG 2207 - TRANSITION TO NURSING PRACTICE

2 Credits (2 hrs. lec.) Introduction to selected concepts related to the role of the associate degree nurse as a provider of care, coordinator of care and member of the profession. Review of trends and issues impacting nursing and health care today and in the future. Topics include knowledge, judgment skill, and professional values within a legal/ethical framework. Prerequisites: RNSG 2162, 2213, 2260, 2261, and SPCH 1318; Corequisites: RNSG 2207, 2260

RNSG 2208 - MATERNAL/NEWBORN NURSING AND WOMEN'S HEALTH

2 Credits (2 hrs. lec.) Study of concepts related to the provision of nursing care for normal childbearing families and those at risk, as well as women’s health issues; competency in knowledge, judgment, skill, and professional values within a legal ethical framework, including a focus on normal and high-risk needs for the childbearing family during the preconception, prenatal, intrapartum, neonatal and postpartum periods; and consideration of selected issues in women’s health. Prerequisite: RNSG 1462; Corequisite: RNSG 2162, 2208, 2213, 2260, 2261, and SPCH 1318

RNSG 2213 - MENTAL HEALTH NURSING

2 Credits (2 hrs. lec.) Principles and concepts of mental health, psychopathology, and treatment modalities related to the nursing care of clients and their families. Prerequisite: RNSG 1462; Corequisite: RNSG 2162, 2208, 2260, 2261

RNSG 2230 - PROFESSIONAL NURSING REVIEW AND LICENSURE PREPARATION

2 Credits (1 hrs. lec., 2 hrs. lab) Review of concepts required for licensure examination and entry into the practice of professional nursing. Includes application of National Council Licensure Examination for Registered Nurses (NCLEX-RN) test plan, assessment of knowledge of deficits, and remediation. This course lends itself to either a blocked or integrated approach. Prerequisite: RNSG 2362 and 2535 or departmental approval

RNSG 2231 - ADVANCED CONCEPTS OF ADULT HEALTH

2 Credits (2 hrs. lec.) Application of advanced concepts and skills for the development of the professional nurse’s role in complex nursing situations with adult clients/families with complex health needs involving multiple body systems in intermediate and critical care settings. Emphasis on knowledge, judgment, skills and professional values within a legal/ethical framework. Prerequisites: RNSG 2162, 2260, 2261, SPCH 1318; Corequisites: RNSG 2207, 2260

RNSG 2260 - CLINICAL - CARE OF CHILDREN AND FAMILIES

2 Credits (6 hrs. ext.) A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional. Work based instruction that allows the student to synthesize and apply theoretical concepts learned in caring for the pediatric client and family to the community, clinical, and acute care setting. Close and/or direct supervision is provided by the clinical professional (faculty or preceptor), generally in a clinical setting. Prerequisite: RNSG 1462 PSYC 2314; Corequisite: RNSG 2162, 2208 and 2213

RNSG 2261 - CLINICAL - MATERNAL/NEWBORN NURSING

2 Credits (6 hrs. lec.) A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional. Prerequisite: RNSG 1462; Corequisite: RNSG 2162, 2208, 2213, 2260

RNSG 2361 - CLINICAL - NURSING III

3 Credits (9 hrs. ext.) A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional. Prerequisite: RNSG 2173, 2361, 2514; Corequisites: RNSG 2173 and 2514

RNSG 2362 - CLINICAL - NURSING IV

3 Credits (9 hrs. ext.) A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional. Prerequisites: RNSG 2173, 2361, 2514; Corequisites: RNSG 2230 and 2535
DESCRIPTION OF COURSES

RNSG 2504 - INTEGRATED CARE OF THE CLIENT WITH COMMON HEALTH CARE NEEDS: NURSING II

5 Credits (4 hrs. lec., 2 hrs. lab.) Application of a systematic problem-solving process and critical-thinking skills to provide nursing care to diverse clients/families across the life span with common health care needs. Opportunities for collaboration with members of the multidisciplinary health care team. Content includes applicable competencies in knowledge, judgment, skills, and professional values within a legal/ethical framework. Prerequisite: RNSG 1119, 1301, 1361, 1523; BIOL 2402; PSYC 2301 Corequisite: RNSG 1129 and 1362

RNSG 2514 - INTEGRATED CARE OF THE CLIENT WITH COMPLEX HEALTH CARE NEEDS

5 Credits (4 hrs. lec., 2 hrs. lab.) Application of a systematic problem-solving process and critical thinking skills to provide comprehensive nursing care to diverse clients/families across the life span with complex health care needs including, but not limited to, complex childhood/adolescent diseases, complicated perinatal care, acute mental illness, complex perioperative care, serious adult health problems and health issues related to aging. Emphasis on tertiary disease prevention, health maintenance/restoration and collaboration with members of the multidisciplinary health care team. Topics include the role of the nurse as client advocate and coordinator of care and applicable competencies in knowledge, judgment, skills, and professional values within a legal/ethical framework. Content includes complex health problems and pathological processes that occur in all age groups, related to mental and physical illness, obstetrical problems, and end stage or emergency health problems. Clinical activities are offered in acute care settings, with added long term and community-based activities. Prerequisite: RNSG 1129, 2504; BIOL 2420; PSYC 2314: SOCI 1301 Corequisite: RNSG 2173 and 2361

RNSG 2535 - INTEGRATED CLIENT CARE MANAGEMENT: NURSING IV

5 Credits (4 hrs. lec., 2 hrs. lab.) Application of client assessment skills, critical thinking, and independent nursing interventions to care for diverse clients/families throughout the life span whose health care needs may be difficult to predict. Emphasis on collaborative clinical decision-making, nursing leadership skills, and client management. Topics include the significance of professional development, trends in nursing and health care, and applicable knowledge, judgment, skills, and professional values within a legal/ethical framework. Human needs and nursing role development continue as a focus, with long-term health problems in diverse individuals. Students use the nursing process for making nursing judgments and setting priorities. Discussion of current issues affecting health care and additional legal/ethical aspects enhance the student’s personal and professional growth. Course includes management of chronic health problems, delegation, utilization of resources, and case management. Prerequisite: RNSG 2173, 2361, 2514; Corequisite: RNSG 2230 and 2362

RNSG 2660 - CLINICAL - RN TRAINING

6 Credits (18 hrs. ext.) A health related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional. Prerequisite: SPCH 1318, RNSG 2162, 2260, 2261; Corequisite: RNSG 2207 and 2231

RSPT 1160 - CLINICAL RESPIRATORY CARE THERAPY/THERAPIST

1 Credit (6 hrs. ext.) A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional. Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

RSPT 1166 - PRACTICUM RESPIRATORY CARE THERAPY/THERAPIST

1 Credit (7 hrs. ext.) Practical, general workplace training supported by an individualized learning plan developed by the employer, college, and student. Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing; Corequisite: RSPT 1201, 1325, and 1429

RSPT 1167 - PRACTICUM RESPIRATORY CARE THERAPY/THERAPIST

1 Credit (7 hrs. ext.) Practical, general workplace training supported by an individualized learning plan developed by the employer, college, and student. Prerequisite: None; Corequisite: RSPT 1431

RSPT 1201 - INTRODUCTION TO RESPIRATORY CARE

2 Credits (1 hr. lec., 4 hrs. lab.) An introduction to the field of respiratory care. Topics include the history
DESCRIPTION OF COURSES

of respiratory care, hospital organization, medical malpractice, ethics, vital signs, body mechanics, basic cardiopulmonary assessment, infection control, and cardiopulmonary resuscitation (CPR). This course may be offered only by a college with a program approved by the Commission on Accreditation of Allied Health Education Programs (CAAHEP), Committee on Accreditation for Respiratory Care Education (CoARC) or successor organizations. Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing; Corequisite: RSPT 1166

RSPT 1207 - CARDIOPULMONARY ANATOMY AND PHYSIOLOGY

2 Credits (1 hr. lec., 4 hrs. lab.) An introduction to the anatomy and physiology of the cardiovascular and pulmonary systems. This course may be offered only by a college with a program approved by the Commission on Accreditation of Allied Health Education Programs (CAAHEP), Committee on Accreditation for Respiratory Care Education (CoARC) or successor organizations. Prerequisite: None

RSPT 1213 - BASIC RESPIRATORY CARE PHARMACOLOGY

2 Credits (2 hrs. lec) A study of basic pharmacological principles/practices of respiratory care drugs. Emphasis on classification, routes of administration, dosages/calculation, and interaction of the autonomic nervous system and physiological interaction. This course may be offered only by a college with a program approved by the Commission on Accreditation of Allied Health Education Programs (CAAHEP), Committee on Accreditation for Respiratory Care Education (CoARC) or successor organizations. Prerequisite: None

RSPT 1241 - RESPIRATORY HOME CARE/REHABILITATION

2 Credits (2 hrs. lec.) Respiratory home care/rehabilitation equipment, procedures, and patient education. Emphasizes treatment of patients in home care and alternate settings. This course may be offered only by a college with a program approved by the Commission on Accreditation of Allied Health Education Programs (CAAHEP), Committee on Accreditation for Respiratory Care Education (CoARC) or successor organizations. Prerequisite: None

RSPT 1266 - PRACTICUM RESPIRATORY THERAPY TECHNICIAN

2 Credits (16 hrs. ext.) Practical, general workplace training supported by an individualized learning plan developed by the employer, college, and student. This course may be offered only by a college with a program approved by the Commission on Accreditation of Allied Health Education Programs (CAAHEP), Committee on Accreditation for Respiratory Care Education (CoARC) or successor organizations. Prerequisite: None; Corequisite: RSPT 2314

RSPT 1325 - RESPIRATORY CARE SCIENCES

3 Credits (2 hrs. lec., 4 hrs. lab.) Physics, mathematics, and chemistry as related to respiratory care. This course may be offered only by a college with a program approved by the Commission on Accreditation of Allied Health Education Programs (CAAHEP), Committee on Accreditation for Respiratory Care Education (CoARC) or successor organizations. Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

RSPT 1429 - RESPIRATORY CARE FUNDAMENTALS

4 Credits (2 hrs. lec., 4 hrs. lab.) Provides a foundation for the development of knowledge and skills for respiratory care including history, medical terms/symbols, medical/legal, infection control, vital signs, physical assessment, chest x-ray interpretation, medical gas therapy, oxygen analyzers, and humidity/aerosol therapy. This course may be offered only by a college with a program approved by the Commission on Accreditation of Allied Health Education Programs (CAAHEP), Committee on Accreditation for Respiratory Care Education (CoARC) or successor organizations. Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing; Corequisite: RSPT 1166

RSPT 1431 - RESPIRATORY CARE FUNDAMENTALS II

4 Credits (2 hrs. lec., 4 hrs. lab.) Provides a foundation for the development of knowledge and skills for respiratory care including lung expansion therapy, postural drainage and percussion, artificial airways, manual resuscitation devices, suctioning, pulse oximetry, bedside spirometry, arterial sampling techniques and blood gas analysis and interpretation. This course may be offered only by a college with a program approved by the Commission on Accreditation of Allied Health Education Programs (CAAHEP), Committee on Accreditation for Respiratory Care Education (CoARC) or
successor organizations. Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

**RSPT 2139 - ADVANCED CARDIAC LIFE SUPPORT**

1 Credit (1 hr. lec., 2 hrs. lab) A comprehensive course designed to develop the cognitive and psychomotor skills necessary for resuscitation of the adult. Includes strategies for managing and stabilizing the cardiopulmonary arrested patient. May include certification. This course may be offered only by a college with a program approved by the Commission on Accreditation of Allied Health Education Programs (CAAHEP), Committee on Accreditation for Respiratory Care Education (CoARC) or successor organizations. Prerequisite: None

**RSPT 2160 - CLINICAL RESPIRATORY CARE THERAPY/THERAPIST**

1 Credit (6 hrs. ext.) A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional. This course may be offered only by a college with a program approved by the Commission on Accreditation of Allied Health Education Programs (CAAHEP), Committee on Accreditation for Respiratory Care Education (CoARC) or successor organizations. Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

**RSPT 2166 - PRACTICUM RESPIRATORY CARE THERAPY/THERAPIST**

1 Credit (7 hrs. ext.) Practical, general workplace training supported by an individualized learning plan developed by the employer, college, and student. This course may be offered only by a college with a program approved by the Commission on Accreditation of Allied Health Education Programs (CAAHEP), Committee on Accreditation for Respiratory Care Education (CoARC) or successor organizations. Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

**RSPT 2210 - CARDIOPULMONARY DISEASE**

2 Credits (1 hr. lec., 4 hrs. lab) A discussion of pathogenesis, pathology, diagnosis, history, prognosis, manifestations, treatment and detection of cardiopulmonary diseases. This course may be offered only by a college with a program approved by the Commission on Accreditation of Allied Health Education Programs (CAAHEP), Committee on Accreditation for Respiratory Care Education (CoARC) or successor organizations. Prerequisite: None

**RSPT 2230 - EXAMINATION PREPARATION**

2 Credits (1 hr. lec., 4 hrs. lab) Comprehensive review for selected respiratory care credentialing examinations. Test matrices and exam content areas for selected exams will be presented. This course may be offered only by a college with a program approved by the Commission on Accreditation of Allied Health Education Programs (CAAHEP), Committee on Accreditation for Respiratory Care Education (CoARC) or successor organizations. Prerequisite: None

**RSPT 2243 - RESEARCH IN RESPIRATORY CARE**

2 Credits (1 hr. lec., 2 hrs. lab) Analysis of current respiratory care research material and determination of scientific validity. May include active clinical research. This course may be offered only by a college with a program approved by the Commission on Accreditation of Allied Health Education Programs (CAAHEP), Committee on Accreditation for Respiratory Care Education (CoARC) or successor organizations. Prerequisite: None

**RSPT 2266 - PRACTICUM RESPIRATORY THERAPY TECHNICIAN**

2 Credits (16 hrs. ext) Practical, general workplace training supported by an individualized learning plan developed by the employer, college, and student. This course may be offered only by a college with a program approved by the Commission on Accreditation of Allied Health Education Programs (CAAHEP), Committee on Accreditation for Respiratory Care Education (CoARC) or successor organizations. Prerequisite: None

**RSPT 2325 - CARDIOPULMONARY DIAGNOSTICS**

3 Credits (2 hrs. lec, 4 hrs. lab.) A study of the physical, radiological, hemodynamic, laboratory, nutritional, and cardiopulmonary diagnostic assessment of the pulmonary patient. This course may be offered only by a college with a program approved by the Commission on Accreditation of Allied Health Education Programs (CAAHEP), Committee on Accreditation for Respiratory Care Education (CoARC) or successor organizations. Prerequisite: None
DESCRIPTION OF COURSES

**RSPT 2353 - NEONATAL/PEDIATRIC CARDIOPULMONARY CARE**

3 Credits (1 hrs. lec, 5 hrs. lab) Advanced concepts of acute care, monitoring, and management as applied to the neonatal and pediatric patient. This course may be offered only by a college with a program approved by the Commission on Accreditation of Allied Health Education Programs (CAAHEP), Committee on Accreditation for Respiratory Care Education (CoARC) or successor organizations. Prerequisite: None

**RSPT 2366 - PRACTICUM RESPIRATORY CARE THERAPY/THERAPIST**

3 Credits (24 hrs. ext) Practical, general workplace training supported by an individualized learning plan developed by the employer, college, and student. This course may be offered only by a college with a program approved by the Commission on Accreditation of Allied Health Education Programs (CAAHEP), Committee on Accreditation for Respiratory Care Education (CoARC) or successor organizations. Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

**RSPT 2414 - MECHANICAL VENTILATION**

4 Credits (1 hr. lec, 7 hrs. lab) In-depth coverage and application of therapeutic procedures to achieve adequate, spontaneous, and artificial ventilation with emphasis on ventilator classification, methods, principles, and operational characteristics. Includes indications, complications, and physiologic effects/principles of mechanical ventilation. Emphasizes initiation, management and weaning of ventilatory support. This course may be offered only by a college with a program approved by the Commission on Accreditation of Allied Health Education Programs (CAAHEP), Committee on Accreditation for Respiratory Care Education (CoARC) or successor organizations. Prerequisite: ME 2100, or ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

**RSTO 1313 - HOSPITALITY SUPERVISION**

3 Credits (3 hrs. lec.) Fundamentals of recruiting, selection, and training of food service and hospitality personnel. Topics include job descriptions, schedules, work improvement, motivation, and applicable personnel laws and regulations. Emphasis on leadership development. Prerequisite: HAMG 1308; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

**RSTO 1325 - PURCHASING FOR HOSPITALITY OPERATIONS**

3 Credits (3 hrs. lec.) Study of purchasing and inventory management of foods and other supplies to include development of purchase specifications, determination of order quantities, formal and informal price comparisons, proper receiving procedures, storage management, and issue procedures. Emphasis on product cost analysis, yields, pricing formulas, controls, and record keeping at each stage of the purchasing cycle. Prerequisite: HAMG 1308; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

**RTVB 1321 - TV FIELD PRODUCTION**

3 Credits (2 hrs. lec., 4 hrs. lab) Pre-production, production, and post-production process involved in field television production. Topics include field camera setup and operation, field audio, television directing, and in-camera or basic continuity editing with an emphasis on underlying principles of video technology. Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

**RTVB 1325 - TV STUDIO PRODUCTION**

3 Credits (2 hrs. lec., 4 hrs. lab) Basic television production including live and taped studio programming, studio camera operation, television audio, and television directing with an emphasis on underlying principles of video technology. Prerequisite: None

**RTVB 2381 - COOPERATIVE EDUCATION - RADIO/TELEVISION BROADCASTING**

3 Credits (1 hr. lec., 20 hrs. ext) Career-related activities encountered in the student's area of specialization offered through an individualized agreement among the college, employer, and student. Under the supervision of the college and the employer, the student combines classroom learning with work experience. Includes a lecture component. Prerequisite: Meets final semester requirements

**SCWK 2186 - INTERNSHIP - SOCIAL WORK**

1 Credit (6 hrs. ext.) A work-based learning experience that enables the student to apply specialized occupational theory, skills and concepts. A learning plan is developed by the college and the employer. Prerequisite: CMSW 1301 and DAAC 1317
SCWK 2286 - INTERNSHIP - SOCIAL WORK
2 Credits (1 hr. lec., 11 hrs. ext.) A work-based learning experience that enables the student to apply specialized occupational theory, skills and concepts. A learning plan is developed by the college and the employer. Prerequisite: CMSW 1301 and DAAC 1317

SCWK 2386 - INTERNSHIP - SOCIAL WORK
3 Credits (1 hr. lec., 17 hrs. ext.) A work-based learning experience that enables the student to apply specialized occupational theory, skills and concepts. A learning plan is developed by the college and the employer. Prerequisite: CMSW 1301 and DAAC 1317

SGNL 1401 - BEGINNING AMERICAN SIGN LANGUAGE I
4 Credits (3 hrs. lec., 2 hrs. lab.) Manual and receptive proficiency on a basic level. Signed conversation, use of CD-ROM for visual training, basic principles of grammar, simple exercises, easy reading which includes cultural material. (5102055116) Prerequisite: None

SGNL 1402 - BEGINNING AMERICAN SIGN LANGUAGE II
4 Credits (3 hrs. lec., 2 hrs. lab.) Continuation of SGNL 1401 with increased emphasis on comprehension, signing and receptive skills. Intensive drills to increase vocabulary and knowledge of ASL structure. (5102055116) Prerequisite: SGNL 1401 and instructor approval

SGNL 2301 - INTERMEDIATE AMERICAN SIGN LANGUAGE I
3 Credits (2 hrs. lec., 3 hrs. lab.) Review and application of conversational skills in American Sign Language. Introduction to American Sign Language literature and folklore. (5102055216) Prerequisite: SGNL 1402 and instructor approval

SGNL 2302 - INTERMEDIATE AMERICAN SIGN LANGUAGE II
3 Credits (2 hrs. lec., 3 hrs. lab.) Continuation of SGNL 2301 with increased emphasis on conversational skills. (5102055216) Prerequisite: SGNL 2301 and instructor approval

SLNG 1211 - FINGERSPELLING
2 Credits (2 hrs. lec., 2 hrs. lab.) Develops expressive and receptive fingerspelling skills. Receptive skills focus on whole word and phrase recognition as well as reading fingerspelling in context. Expressive skills focus on the development of speed, clarity, and fluency. Additionally, this course develops expressive skills in signing numbers and skills in receptively interpreting numbers in a variety of areas including sports, mathematics, weights, and measures. Prerequisite: None

SLNG 1215 - VISUAL/GESTURAL COMMUNICATION
2 Credits (2 hrs. lec.) A course in the development of skills in nonverbal communications. Emphasizes the use and understanding of facial expression, gestures, pantomime, and body language. Creation and/or performance of stories using these elements. Prerequisite: None

SLNG 1317 - INTRODUCTION TO THE DEAF COMMUNITY
3 Credits (3 hrs. lec.) An overview of the physical, educational, social, and cultural implications of deafness and hearing loss within the context of the individual’s personal life, family, and community in today’s multicultural world. Emphasis on current educational and vocational programs, legislation, technology, and other issues. Prerequisite: None

SLNG 1321 - INTRODUCTION TO THE INTERPRETING PROFESSION
3 Credits (3 hrs. lec.) An overview of the field of sign language interpretation. Provides a historical framework for the principles, ethics, roles, responsibilities, and standard practices of the interpreting profession. This course will also include identification of professional interpreting organizations and journal/publications that provide information on sign systems and other interpreting methods. Prerequisite: SGNL 1401 and SLNG 1317; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

SLNG 1347 - DEAF CULTURE
3 Credits (3 hrs. lec.) Provides a historical and contemporary perspective of American deaf culture using a sociocultural model. Includes cultural identity, values, group norms, communication, language, and significant contributions made by deaf people to the world. This course will also identify organizations of the deaf and will explore implications of deafness on family dynamics. Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing
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SLNG 2315 - INTERPRETING IN EDUCATIONAL SETTINGS

3 Credits (2 hrs. lec., 4 hrs. lab.) Increases awareness of current techniques, issues, and ethics in mainstreaming and bilingual/bicultural education practices. Includes a survey of technical signs and signed English systems currently in use. This course will also include the use of computer laboratories, multimedia equipment and video equipment to assess and enhance sign-to-voice and voice-to-sign skill development. Prerequisite: SLNG 2401, ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing.

SLNG 2401 - INTERPRETING I

4 Credits (3 hrs. lec., 3 hrs. lab.) An overview of the interpreting process and current models. Introduces the skills necessary to achieve message equivalency in interpreting and transliterating. This course will also include the use of computer laboratories, multimedia equipment and video equipment to assess and enhance sign-to-voice and voice-to-sign skill development. Prerequisite: SGNL 1402; SLNG 1211, 1321 or permission of instructor; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing.

SLNG 2402 - INTERPRETING II

4 Credits (3 hrs. lec., 4 hrs. lab.) Enhancement of interpreting skills and discourse analysis to increasingly complex tasks utilizing simulated interpreting experiences via multimedia materials. Emphasis on skill analysis and peer evaluation and additional development of transliterating skills in increasingly complex tasks. This course includes a study of current business practice and the use of computer laboratories, multimedia equipment and video equipment to assess and enhance sign-to-voice and voice-to-sign skill development. Prerequisite: SLNG 2401 and 1347; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing.

SLNG 2431 - INTERPRETING III

4 Credits (3 hrs. lec., 4 hrs. lab.) A practice oriented course to strengthen skills in the integration and application of processing more complex selections. Continued exposure to simulated interpreting experience through the use of multimedia material. This course will also include the use of computer laboratories, multimedia equipment and video equipment to assess and enhance sign-to-voice and voice-to-sign skill development. Prerequisite: SLNG 2402; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing.

SLNG 2589 - INTERNSHIP: SIGN LANGUAGE INTERPRETER

5 Credits (20 hrs. ext.) A work-based learning experience that enables the student to apply specialized occupational theory, skills and concepts. A learning plan is developed by the college and the employer. Prerequisite: Successful completion of all SLNG courses within the AAS degree plan; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing.

SOCI 1301 - PRINCIPLES OF SOCIOLOGY

3 Credits (3 hrs. lec.) This course is an introduction to the basic elements of society. In looking at human behavior, this course includes an introduction to dynamics of society, culture, social groups, social institutions, socialization, social processes and social structure. (4511015125) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing.

SOCI 1306 - SOCIAL PROBLEMS

3 Credits (3 hrs. lec.) The emphasis in this course is on the identification and analysis of contemporary social problems. An analysis of the problems of social planning and of the conventional solutions to these problems is included in the course. (4511015225) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing.

SOCI 2301 - MARRIAGE AND FAMILY

3 Credits (3 hrs. lec.) This course has been developed to examine two phases of marriage and the family experience. First, it examines the structure of family life and the variance of this structure in different cultures and subcultures. Second, this course examines some of the problems and possible solutions that have developed in courtship, marriage and parenthood in a society undergoing rapid social change. (4511015425) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing.
SOCI 2319 - MINORITY STUDIES
3 Credits (3 hrs. lec.) A sociological description, analysis and interpretation of racial and ethnic relations in America and other areas of the world is the focus of this course. Special emphasis is given to cultural development and inter-group relations of groups such as African Americans, Hispanics, Asian-Americans and Native Americans. (4511015325) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing.

SOCI 2326 - SOCIAL PSYCHOLOGY
3 Credits (3 hrs. lec.) The course focuses on individual behavior as affected by cultural and social stimuli. Social behavior, interpersonal influence, group membership and the relations between persons and social systems are emphasized. (4216015125) Prerequisite: SOCI 1301 or PSYC 2301 or departmental approval; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing.

SPAN 1300 - SPANISH CONVERSATION I
3 Credits (3 hrs. lec.) This is a conversational Spanish course for beginners. It includes extensive comprehension, oral practice, and use of multimedia materials. It is intended to develop basic communication skills for the student to apply these skills to everyday life and work situation. It is an alternate track for the student who needs immediate communicative experience in Spanish. (1609055413) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing.

SPAN 1310 - SPANISH CONVERSATION II
3 Credits (3 hrs. lec.) This course is a continuation of Conversational Spanish I. It includes extensive comprehension, oral practice, and use of multimedia materials. It is intended to develop communication skills for the student to apply these skills to everyday life and work situations. It is an alternate track for the student who needs immediate communicative experience in Spanish. (1609055413) Prerequisite: SPAN 1412; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing.

SPAN 2306 - INTERMEDIATE SPANISH CONVERSATION
3 Credits (3 hrs. lec.) Intensive oral practice in small and large group context for students who have learned Spanish as a foreign language and have mastered speaking, reading and writing competencies in the language. (1609055413) Prerequisite: SPAN 1412; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing.

SPAN 2311 - INTERMEDIATE SPANISH I
3 Credits (3 hrs. lec.) This course stresses both oral and written exercises to increase vocabulary, expansion of grammatical principles and short themes written on a variety of topics. Selected readings are included to improve comprehension in Spanish. Students with prior language experience should take a placement exam to advance to the next level and receive credit. (1609055213) Prerequisite: SPAN 1412 or placement by exam; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing.

SPAN 2312 - INTERMEDIATE SPANISH II
3 Credits (3 hrs. lec.) This course is a continuation of SPAN 2311, with emphasis on works by Spanish-speaking authors. Continued reinforcement of grammatical principles and development of writing skills are stressed. (1609055213) Prerequisite: SPAN 2311 or
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placement by exam; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

SPAN 2316 - SPANISH FOR BUSINESS

3 Credits (3 hrs. lec.) This course will prepare the student for successful communication in the Hispanic business world by building on existing knowledge and emphasizing practical, real-life use of Spanish. This course will also emphasize cultural awareness in doing business in Hispanic countries or with Hispanics in the United States. (1609055413) Prerequisite: SPAN 2311; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

SPAN 2321 - INTRODUCTION TO SPANISH LITERATURE I (IBERIAN)

3 Credits (3 hrs. lec.) A survey of literature of Spain from the 16th Century to the beginning of the 20th Century. This course is taught in Spanish. (1609055313) Prerequisite: SPAN 2311 and SPAN 2312; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

SPAN 2322 - INTRODUCTION TO SPANISH LITERATURE II (IBERIAN)

3 Credits (3 hrs. lec.) A survey of literature of Spain from the Beginning of the 20th Century to the present. This course is taught in Spanish. (1609055313) Prerequisites: SPAN 2311 and SPAN 2312; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

SPAN 2323 - INTRODUCTION TO LATIN AMERICAN LITERATURE

3 Credits (3 hrs. lec.) A survey of literature of Latin American Literature. This course is taught in Spanish. (1609055313) Prerequisite: SPAN 2311 and SPAN 2312; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

SPAN 2324 - SPANISH CULTURE

3 Credits (3 hrs. lec.) This course will prepare the student for successful communication in the Hispanic world by building on existing knowledge and emphasizing practical, real-life use of Spanish and cultural awareness towards Hispanic countries or with Hispanics in the United States. (1609055313) Prerequisite: SPAN 2311; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

SPCH 1144, 1145, 2144, 2145 - FORENSIC ACTIVITIES

1 Credit (4 hrs. lab.) Laboratory course for students who participate extensively in forensic activities. Participation in intercollegiate forensic meets each semester is required. A maximum of four credit hours may be earned. (2310016012) Prerequisite: Approval of instructor; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

SPCH 1311 - INTRODUCTION TO SPEECH COMMUNICATION

3 Credits (3 hrs. lec.) Through the delivery of a variety of speeches, the observation of mass media and participation in an assortment of group activities, this course is meant to familiarize the student with those motivational elements which affect the delivery and reception of oral communication. (2310015112) Prerequisite: ENGL 0305/0307 or ENGL 0316 and ENGL 0326/0335 or placement by testing

SPCH 1315 - PUBLIC SPEAKING

3 Credits (3 hrs. lec.) Public Speaking provides the student with practical tools and skills necessary to communicate ideas. Selection of topic, organization of data, exercises in vocal awareness, evaluation of audience and situation and techniques of delivery are discussed and put into action. Through oral presentations in class, students will enhance their competence in oral communication. (2310015312) Prerequisite: ENGL 0305/0307 or ENGL 0316 and ENGL 0326/0335 or placement by testing

SPCH 1318 - INTERPERSONAL COMMUNICATION

3 Credits (3 hrs. lec.) Interpersonal Communication focuses on the complex process of person-to-person communication. The course is designed to facilitate the student’s conscious awareness of the impact of messages, verbal and nonverbal, sent and received by him/her. (2310015412) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

SPCH 1321 - BUSINESS SPEECH

3 Credits (3 hrs. lec.) Business Speech is devoted to the study of communication in a business setting. Topics discussed and placed in practical application
are interviewing, evaluation of communications in business, problem-and-solution exercises, and sales presentations and reports. Where applicable, examples, exercises and assignments are made in a real-life circumstance. (2310015212) Prerequisite: ENGL 0305/0307 or ENGL 0316 and ENGL 0326/0335 or placement by testing

**SPCH 1342 - VOICE AND DICTION**

3 Credits (3 hrs. lec.) Development and establishment of a good voice habit through a study of the principles and a practice of the techniques involved in excellence of voice and diction. Includes proper breathing techniques, sound production, kinesics, general speech standards, common voice problems, and methods to overcome problems. (2310015812) Prerequisite: ENGL 0305/0307 or ENGL 0316 and ENGL 0326/0335 or placement by testing

**SPCH 2333 - DISCUSSION AND SMALL GROUP COMMUNICATION**

3 Credits (3 hrs. lec.) Designed to promote a better understanding of how communication is used in the small group. More specifically, it will focus on both the theoretical principles and practical application of skills appropriate to effective small group interaction. Such a focus will entail active participation in groups, both in and out of class. (2310015612) Prerequisite: ENGL 0305 or ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

**SPCH 2335 - ARGUMENTATION AND DEBATE**

3 Credits (3 hrs. lec.) A study and practice of the theories in argumentation and debate, including instruction in reasoning, analysis, organization, evidence, refutation, and presentation of critical decision making. (2310015912) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

**SPCH 2341 - ORAL INTERPRETATION**

3 Credits (3 hrs. lec.) This course consists of the interpretation of literature; preparation and reading of poetry and prose; storytelling for children; exercises in arranging and adapting stories; choral speaking; practice in phrasing, vocal quality, rhythm, and bodily responses. Recommended for majors in speech, radio-television, English, elementary education. (2310015712) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

**TECA 1303 - FAMILIES, SCHOOL AND COMMUNITY**

3 Credits (3 hrs. lec.) A study of the child, family, community and schools; including parent education and involvement; family and community lifestyles, child abuse, and current family life issues. Course content is aligned with State Board for Educator Certification Pedagogy and Professional Responsibilities standards. Requires students to participate in a minimum of 15 hours field experience with children, infancy through age 12 in a variety of settings with varied and diverse populations. (1301015209) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

**TECA 1311 - EDUCATING YOUNG CHILDREN**

3 Credits (2 hrs. lec., 2 hrs. lab.) An introduction to the education of the young child, including developmentally appropriate practices and programs, theoretical and historical perspectives, ethical and professional responsibilities, and current issues. Course content is aligned with State Board for Educator Certification Pedagogy and Professional Responsibilities standards. Requires students to participate in a minimum of 15 hours of field experience with children from infancy through age 12 in a variety of settings with varied and diverse populations. (1312025109) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

**TECA 1318 - WELLNESS OF THE YOUNG CHILD**

3 Credits (2 hrs. lec., 3 hrs. lab.) A study of the factors that impact the well-being of the young child including healthy behavior, food, nutrition, fitness and safety practices. Focus on local and national standards and legal implications of relevant policies and regulations. Course content is aligned with State Board of Educator Certification Pedagogy and Professional Responsibilities standards. Requires students to participate in a minimum of 15 hours of field experience with children from infancy through age 12 in a variety of settings with varied and diverse populations. (1301015309) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

**TECA 1354 - CHILD GROWTH AND DEVELOPMENT**

3 Credits (3 hrs. lec.) A study of the physical, emotional, social, and cognitive factors impacting growth and development of children through adolescence. (1312025209) Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing
DESCRIPTION OF COURSES

TECM 1303 - TECHNICAL MATHEMATICS
3 Credits (3 hrs. lec.) A review of mathematical functions including fractions, decimals, proportions, perimeters, areas, volumes of geometric figures, and certain algebraic/trigonometric functions, as required by specific businesses and industries for successful on-the-job performance. Topics to be presented include factoring, quadratic equations, rational expressions/equations, roots, radicals, exponents, graphing, systems of linear equations, and complex numbers. Prerequisite: MATH 0306 or placement by testing.

VNSG 1116 - NUTRITION
1 Credit (1 hr. lec) Introduction to nutrients and diet therapy and the role of each in proper growth and development and the maintenance of health. Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing.

VNSG 1122 - VOCATIONAL NURSING CONCEPTS
1 Credit (1 hr. lec) Introduction to the nursing profession and its responsibilities and the legal and ethical issues in nursing practice. Concepts related to the physical, emotional, and psychosocial self-care of the learner/professional. This course is an elective for students enrolled in the ADN program. Prerequisite: RNSG 1144, 1362, 2504; BIOL 2420; PSYC 2314; SOCI 1301; ENGL 1301 and 1 credit hour of KINE; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing; Corequisite: VNSG 2362.

VNSG 1160 - CLINICAL - BASICS
1 Credit (4 hrs. ext.) A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional. This course involves direct patient interaction for mastery of entry level nursing skills and competencies performed in a variety of health care settings with a focus on the care of the well and the ill child. Prerequisite: VNSG 1160, 1260, 1304, 1323, 1400 and 1405; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing; Corequisite: VNSG 1307.

VNSG 1219 - PROFESSIONAL DEVELOPMENT
2 Credits (2 hrs. lec.) Study of the importance of professional growth. Topics include the role of the licensed vocational nurse in the multi-disciplinary health care team, professional organizations, and continuing education. Emphasis on application and preparation for the licensing examination and the workforce. Prerequisite: VNSG 1163, 1231, 1262 and 1409; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing.

VNSG 1226 - GERONTOLOGY
2 Credits (2 hrs. lec.) Overview of the normal physical, psychological, and cultural aspects of the aging process. Addresses common disease processes of aging. Exploration of attitudes toward care of the elderly. Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing.

VNSG 1231 - PHARMACOLOGY
2 Credits (2 hrs. lec., 1 hr. lab.) This course provides instruction in fundamentals of medications and their diagnostic, therapeutic, and curative effects. Includes nursing interventions utilizing the nursing process. Prerequisite: VNSG 1160, 1260, 1304, 1323, 1400; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing; Corequisite: VNSG 1262 and 1409.

VNSG 1238 - MENTAL ILLNESS
2 Credits (2 hrs. lec.) Study of human behavior with emphasis on emotional and mental abnormalities and modes of treatment incorporating the nursing process. Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

VNSG 1260 - CLINICAL I
2 Credits (8 hrs. ext.) A health-related work-based learning experience that enables the student to apply
specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional. This course involves direct patient interaction for mastery of nursing skills and competencies performed in a variety of health care settings with a focus on acute care. Prerequisite: VNSG 1160; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing; Corequisite: VNSG 1400

VNSG 1262 - CLINICAL II
2 Credits (8 hrs. ext.) A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional. This course involves direct patient interaction for mastery of nursing skills and competencies performed in a variety of health care settings with a focus on acute care. Prerequisite: VNSG 1160, 1260, 1304, 1323, 1400; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing; Corequisite: VNSG 1409

VNSG 1304 - FOUNDATIONS OF NURSING
3 Credits (3 hrs. lec.) This course provides an introduction to the nursing profession including history, standards of practice, legal and ethical issues, and role of the vocational nurse. Topics include mental health, therapeutic communication, cultural and spiritual diversity, nursing process, and holistic awareness. Prerequisite: Program Admission; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing.

VNSG 1306 - MATERNAL/NEWBORN NURSING
3 Credits (3 hrs. lec., 1 hr. lab.) This course is a study of the biological, psychological, and sociological concepts applicable to basic needs of the family including childbearing and neonatal care. Topics include physiological changes related to pregnancy, fetal development, and nursing care of the family during labor and delivery and the puerperium. Prerequisite: VNSG 1163, 1231, 1262 and 1409; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing; Corequisite: VNSG 2161

VNSG 1307 - PEDIATRIC NURSING
3 Credits (3 hrs. lec., 1 hr. lab.) Study of the pediatric client and family during health and disease. Emphasis on growth and developmental needs. Prerequisite: VNSG 1160, 1260, 1304, 1323, 1400 and 1405; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing; Corequisite: VNSG 1163

VNSG 1323 - BASIC NURSING SKILLS
3 Credits (2 hrs. lec., 2 hrs. lab.) This course provides instruction toward mastery of entry-level nursing skills and competencies for a variety of health care settings. Utilization of the nursing process as the foundation for all nursing interventions. Prerequisite: Program Admission; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing; Corequisite: VNSG 1160

VNSG 1400 - NURSING IN HEALTH AND ILLNESS I
4 Credits (4 hrs. lec., 1 hr. lab) Introduction to general principles of growth and development, primary health care needs of the client across the life span and therapeutic nursing interventions. Prerequisite: Program Admission; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing; Corequisite: VNSG 1260

VNSG 1409 - NURSING IN HEALTH AND ILLNESS II
4 Credits (4 hrs. lec., 1 hr. lab.) This course provides an introduction to common health problems of the adult requiring medical and surgical interventions. Prerequisite: VNSG 1160, 1260, 1304, 1323, and 1400; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing; Corequisite: VNSG 1262

VNSG 1410 - NURSING IN HEALTH AND ILLNESS III
4 Credits (4 hrs. lec., 1 hr. lab.) This course is a continuation of Nursing in Health & Illness II. Further study of common medical-surgical health problems of the adult including concepts of mental illness. Incorporates knowledge necessary to make the transition from student to graduate vocational nurse. Prerequisite: VNSG 1163, 1231, 1262 and 1409; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing; Corequisite: VNSG 2361

VNSG 2161 - MATERNAL/NEWBORN CLINICAL
1 Credit (6 hrs. ext.) A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional. This course involves direct patient interaction for mastery of nursing skills and competencies
DESCRIPTION OF COURSES

performed in a variety of health care settings with a focus on maternal/newborn care. Prerequisite: VNSG 1163, 1231, 1262 and 1509; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing; Corequisite: VNSG 1306

VNSG 2361 - CLINICAL III

3 Credits (12 hrs. ext.) A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional. This course involves direct patient interaction for mastery of nursing skills and competencies performed in a variety of health care settings with a focus on acute care. Prerequisite: VNSG 1163, 1231, 1262 and 1409; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing; Corequisite: VNSG 1410

VNSG 2362 - CLINICAL: PRACTICAL NURSE I

3 Credits (12 hrs. ext.) A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional. This course is an elective for students enrolled in the ADN program. Prerequisite: RNSG 1144, 1362, and 2504; BIOL 2420; PSYC 2314; SOC1 1301; ENGL 1301 and 1 credit hour of KINE; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing; Corequisite: VNSG 1122

VNSG 2363 - CLINICAL: PRACTICAL NURSE II

3 Credits (12 hrs. ext.) A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional. This course is an elective for students enrolled in the ADN program. Prerequisite: VNSG 2362 with a “C” or better; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing; Corequisite: VNSG 1122

VTHT 1191 - SPECIAL TOPICS IN VETERINARIAN ASSISTANT/ANIMAL HEALTH TECHNICIAN

1 Credit (1 hr. lec.) Topics address recently identified current events, skills, knowledge’s, and/or attitudes and behaviors pertinent to the technology or occupation and relevant to the professional development of the student. This course is designed to inform veterinary technology students about the interpretation of the laws and regulations governing the profession. Topics include recent changes and comprehension of the Veterinary Licensing Act, Veterinary Rules of Professional Conduct, and the RVT Program Standard Operating Procedures. Prerequisite: VTHT 2421; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

VTHT 1205 - VETERINARY MEDICAL TERMINOLOGY

2 Credits (2 hrs. lec.) Introduction to word parts, directional terminology, and analysis of common veterinary terms. Students will master the common terminology associated with the numerous systems covered in subsequent veterinary technology courses. Prerequisite: Departmental approval; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

VTHT 1209 - VETERINARY NUTRITION

2 Credits (2 hrs. lec.) Fundamentals of energy and non-energy producing nutrients and their sources and functions. Integration of concepts including digestion, absorption, and metabolism with application to normal and therapeutic nutritional needs. Prerequisite: VTHT 1205 and 1401

VTHT 1217 - VETERINARY OFFICE MANAGEMENT

2 Credits (1 hr. lec., 2 hrs. lab.) Practical experience in management of the veterinary hospital. Emphasis on client relations, record keeping, inventory, employment skills, and computer skills in the veterinary environment. Prerequisite: VTHT 1209 and 1413 and departmental approval

VTHT 1225 - PHARMACOLOGICAL CALCULATIONS

2 Credits (2 hrs. lec.) Skill development in calculating oral and parenteral drug dosages. Instructions on reading drug orders and labels, calculating intravenous flow rates and a study into the various systems of measurement. Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing
VTHT 1345 - VETERINARY RADIOLOGY
3 Credits (2 hrs. lec., 2 hrs. lab.) Presentation of theory and principles and practical application of radiology within the field of veterinary medicine. Preparation of technique charts, implementation of safety measures, radiographic processing, care of equipment, use of ultrasonography equipment, and performing contrast media studies. Prerequisite: VTHT 1413 and departmental approval; Corequisite: VTHT 1191, 1441, and 2431

VTHT 1401 - INTRODUCTION TO VETERINARY TECHNOLOGY
4 Credits (3 hrs. lec., 3 hrs. lab.) Survey of the profession of veterinary technology with emphasis on basic techniques, handling and care of domestic animals, and ethical and professional requirements. This course will also include the topics of general animal breeds, standard clinical values, and an introduction to basic laboratory and office techniques and procedures. Prerequisite: Departmental approval; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

VTHT 1413 - VETERINARY ANATOMY AND PHYSIOLOGY
4 Credits (2 hrs. lec., 4 hrs. lab.) Gross anatomy of domestic animals including physiological explanations of how each organ system functions. Studies are to develop a practical application of knowledge and its relationship to the diagnoses and treatment of certain pathological problems and surgical conditions. Prerequisite: VTHT 1205 and 1401 and departmental approval

VTHT 1441 - ANESTHESIA AND SURGICAL ASSISTANCE
4 Credits (2 hrs. lec., 4 hrs. lab.) In-depth application of surgical, obstetrical, and anesthesia techniques including identification and use of instruments and equipment. A major portion of the course will include detailed instruction in the principles of pharmacology with a practical application in determining anesthetic dosages and after care treatments for patients. Necropsy techniques will be demonstrated with active participation by students. Prerequisite: VTHT 1413 & departmental approval; Corequisite: VTHT 1191, 1345, and 2431

VTHT 2201 - CANINE AND FELINE CLINICAL MANAGEMENT
2 Credits (1 hr. lec., 2 hrs. lab.) Survey of feeding, common management practices, and care of canines and felines in a clinical setting. Review of common diseases of canines and felines encountered in the practice of veterinary medicine. Prerequisite: VTHT 1205 and 1401

VTHT 2205 - EQUINE CLINICAL MANAGEMENT
2 Credits (1 hr. lec., 2 hrs. lab.) Survey of feeding, common management practices, and care of equines encountered in the practice of veterinary medicine. Corequisite: VTHT 1205 and 1401

VTHT 2209 - FOOD ANIMAL CLINICAL MANAGEMENT
2 Credits (1 hr. lec., 2 hrs. lab.) Survey of feeding, common management practices, and care of food producing animals in a clinical setting. Review of common diseases of food producing animals encountered in the practice of veterinary medicine. Prerequisite: VTHT 1205 and 1401

VTHT 2213 - LAB ANIMAL CLINICAL MANAGEMENT
3 Credits (2 hrs. lec., 3 hrs. lab.) Survey of feeding, common management practices, and care of laboratory animals in a clinical setting. Review of common diseases of laboratory animals encountered in the practice of veterinary medicine. Prerequisite: VTHT 1205 and 1401

VTHT 2231 - VETERINARY CLINICAL PATHOLOGY I
3 Credits (2 hrs. lec., 2 hrs. lab.) In-depth study of hematology and related chemistries with emphasis on lab procedures. This course is designed to introduce the student to the theory of hematology and urology. Hematology evaluation and urinalysis will be stressed to determine chemical and physical properties of all the diagnostic fluids. Prerequisite: VTHT 2421 or permission from the program director

VTHT 2360 - CLINICAL
3 Credits (14 hrs. ext.) A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional. Prerequisite: VTHT 1345, 1441, 1191, 2323 and 2431
DESCRIPTION OF COURSES

VTHT 2421 - VETERINARY PARASITOLOGY
4 Credits (3 hrs. lec., 3 hrs. lab.) Study of parasites common to domestic animals including zoonotic diseases. This course will include the study of both ectoparasites and endoparasites with discussions on control measures of public health importance and the pharmaceuticals appropriate for the parasite’s elimination. Prerequisite: VTHT 1209 and 1413

VTHT 2431 - VETERINARY CLINICAL PATHOLOGY II
4 Credits (3 hrs. lec., 3 hrs. lab.) In-depth study of urinalysis and cytology. Survey of microbiological techniques. Emphasis of laboratory procedures. A continuation of VTHT 2323 with a more technologically oriented evaluation of body fluids including blood chemistry and cytology. Microbiology, bacteriology and virology are also presented in detail. Prerequisite: VTHT 2323; Corequisite: VTHT 1191, 1345, and 1441

WLDG 1405 - ART METALS
4 Credits (3 hrs. lec., 3 hrs. lab.) Fundamentals of conceptualizing and producing utilitarian items on ferrous and non-ferrous metals. Skill development through the techniques of sinking, raising, repousse, and piercing to create objects from flat sheet. Topics include brazing, soldering, tinning, polishing, and tool making. Prerequisites: ENGL 0305, 0313 or ENGL 0314; ENGL 0307 or ENGL 0326; or placement by testing

WLDG 1413 - INTRODUCTION TO BLUEPRINT READING FOR WELDERS
4 Credits (3 hrs. lec., 3 hrs. lab.) A study of industrial blueprints. Emphasis placed on terminology, symbols, graphic description and welding processes, including systems of measurement and industry standards. Interpretation of plans and drawings used by industry. Prerequisite: None

WLDG 1417 - INTRODUCTION TO LAYOUT AND FABRICATION
4 Credits (3 hrs. lec., 3 hrs. lab.) A fundamental course in layout and fabrication related to the welding industry. Major emphasis on structural shapes and use in construction. Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

WLDG 1421 - INTRODUCTION TO WELDING FUNDAMENTALS
4 Credits (3 hrs. lec., 3 hrs. lab.) An introduction to the fundamentals of equipment used in oxyacetylene and arcwelding, including welding and cutting safety, basic oxyacetylene welding and cutting, basic arc welding processes and basic metallurgy. Prerequisite: ENGL 0304, 0306, MATH 0306

WLDG 1428 - INTRODUCTION TO SHIELDED METAL ARC WELDING (SMAW)
4 Credits (3 hrs. lec., 3 hrs. lab.) An introduction to shielded metal arc welding process. Emphasis placed on power sources, electrode selection, oxy-fuel cutting, and various joint designs. Instruction provided in SMAW fillet welds in various positions. Prerequisite: None

WLDG 1430 - INTRODUCTION TO GAS METAL ARC WELDING (MIG)
4 Credits (3 hrs. lec., 3 hrs. lab.) A study of the principles of gas metal arc welding, setup and use of GMAW equipment, and safe use of tools/equipment. Instruction in various joint designs. Prerequisite: None

WLDG 1434 - INTRODUCTION TO GAS TUNGSTEN ARC WELDING (TIG)
4 Credits (3 hrs. lec., 3 hrs. lab.) An introduction to the principles of gas tungsten arc welding (GTAW), setup/use of GTAW equipment, and safe use of tools and equipment. Welding instruction in various positions on joint designs. Prerequisite: None

WLDG 1435 - INTRODUCTION TO PIPE WELDING
4 Credits (3 hrs. lec., 3 hrs. lab.) An introduction to welding of pipe using the shielded metal arc welding process, including electrode selection, equipment setup, and safe shop practices. Emphasis on weld positions 1G and 2G using various electrodes. Corequisite: WLDG 1457

WLDG 1437 - INTRODUCTION TO METALLURGY
4 Credits (3 hrs. lec., 3 hrs. lab.) A study of ferrous and nonferrous metals from the ore to the finished product. Emphasis on metal alloys, heat treating, hard surfacing, welding techniques, forging, foundry processes, and mechanical properties of metal including hardness, machinability, and ductility. Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326,
DESCRIPTION OF COURSES

OR higher level course (ENGL 1301), OR placement by testing

WLDG 1442 - METAL SCULPTURE
4 Credits (3 hrs. lec., 3 hrs. lab.) Instruction in the techniques and methods of art metals and metalsmithing. Skill development in welding, brazing, and finishing techniques. Topics address work ethics, artistic styles, and professionalism. Prerequisite: ARTS 1316 and WLDG 1421; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

WLDG 1457 - INTERMEDIATE SHIELDED METAL ARC WELDING (SMAW)
4 Credits (3 hrs. lec., 3 hrs. lab.) The student will identify principles of arc welding; describe arc welding operations of fillet and groove joints; explain heat treatments of low alloy steels; and explain weld size and profiles. The student will prepare test plates; perform fillet welds in the overhead position; perform air carbon arc weld removal; perform bevel groove welds with backing plates in various positions; and demonstrate use of tools and equipment. Prerequisite: WLDG 1428

WLDG 2380 - COOPERATIVE EDUCATION - WELDER/WELDING
3 Credits (1 hr. lec., 20 hrs. ext.) Career-related activities encountered in the student’s area of specialization offered through an individualized agreement among the college, employer, and student. Under the supervision of the college and the employer, the student combines classroom learning with work experience. Includes a lecture component. Prerequisite: Departmental approval

WLDG 2413 - INTERMEDIATE WELDING USING MULTIPLE PROCESSES
4 Credits (3 hrs. lec., 3 hrs. lab.) Instruction using layout tools and blueprint reading with demonstration and guided practices with some of the following welding processes: oxy-fuel gas cutting and welding, shield metal arc welding (SMAW), gas metal arc welding (GMAW), flux-cored arc welding (FCAW), gas tungsten arc welding (GTAW), or any other approved welding process. Prerequisites: WLDG 1421; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

WLDG 2433 - METALSMITHING
4 Credits (3 hrs. lec., 3 hrs. lab.) A study of welding techniques for ferrous and non-ferrous metals. Skill development in brazing, forging, and welding in all processes to include coal and gas forges. Emphasis on combining metals and processes to demonstrate technique versatility. Prerequisite: ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

WLDG 2440 - ADVANCED ART METAL (STUDIO PROBLEMS)
4 Credits (3 hrs. lec., 3 hrs. lab.) Project development in an open-studio atmosphere. Individualized instruction to encourage skill combinations and experimentation. Topics include portfolio preparation and presentation. Prerequisite: WLDG 1405; ENGL 0305 or ENGL 0316 AND ENGL 0307 or 0326, OR higher level course (ENGL 1301), OR placement by testing

WLDG 2447 - ADVANCED METAL ARC WELDING (MIG)
4 Credits (3 hrs. lec., 3 hrs. lab.) The student will exhibit expertise in various welding positions on pipe; describe safety rules and equipment used; and describe the effects of welding parameters in GMAW. The student will weld various joint designs and diagnose welding problems and perform visual inspection. Prerequisite: WLDG 1430

WLDG 2451 - ADVANCED GAS TUNGSTEN ARC WELDING (TIG)
4 Credits (3 hrs. lec., 3 hrs. lab.) The student will exhibit expertise in various welding positions; describe safety rules and equipment used; and describe the effects of welding parameters in GTAW. The student will weld various joint designs; diagnose welding problems; and perform visual inspection. Prerequisite: WLDG 1434

WLDG 2453 - ADVANCED PIPE WELDING
4 Credits (3 hrs. lec., 3 hrs. lab.) Advanced topics involving welding of pipe using the shielded metal arc welding process. Topics include electrode selection, equipment setup, and safe shop practices. Emphasis on weld positions 5G and 6G using various electrodes. Prerequisite: WLDG 1435
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Allan Lester, Grounds Maintenance

Barbara A. Lewis, Parkway Center  
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B.S., Truman State University

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B.A.T., Sam Houston State University

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B.A., Shepherd College

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B.S., Boston College

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A.A., College of the Mainland

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# FACULTY – NORTH HARRIS COLLEGE

<table>
<thead>
<tr>
<th>Name</th>
<th>Department</th>
<th>Education</th>
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<tbody>
<tr>
<td>Michael Harman</td>
<td>Biology</td>
<td>M.S., Edinboro University of Pennsylvania</td>
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<td>B.S., Edinboro University of Pennsylvania</td>
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<tr>
<td>Cecil Harper</td>
<td>History</td>
<td>Ph.D., University of North Texas</td>
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<td>M.A., Midwestern State University</td>
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<td>B.A., Midwestern State University</td>
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<tr>
<td>Janice Hartgrove-Freile</td>
<td>Psychology</td>
<td>M.A., University of Houston</td>
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<td>B.A., Rice University</td>
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<tr>
<td>Pamela Heard</td>
<td>Dance</td>
<td>M.F.A., University of Michigan at Dearborn</td>
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<td>B.A., Misericordia College</td>
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<tr>
<td>Janice Hemphill</td>
<td>Associate Degree Nursing</td>
<td>M.S., Texas Woman's University</td>
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<td>B.S., Baylor University</td>
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<tr>
<td>Nancy Henderson</td>
<td>Professional Office Technology</td>
<td>M.S., University of Houston</td>
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<td>B.A., Michigan State University</td>
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<tr>
<td>Jack Hernandez</td>
<td>Counseling</td>
<td>M.A., Sam Houston State University</td>
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<td>B.A., Texas A&amp;M University at College Station</td>
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<tr>
<td>Wade Hescht</td>
<td>Speech</td>
<td>M.A., University of Houston</td>
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<td>B.A., University of Saint Thomas</td>
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<tr>
<td>Melanie Hilburn</td>
<td>Center for Teaching and Learning</td>
<td>M.S.Ed., Prairie View A&amp;M University</td>
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<td></td>
<td>B.S.N., Prairie View A&amp;M University</td>
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<tr>
<td>Grace Hively</td>
<td>Child Development &amp; Family Studies</td>
<td>B.A., Our Lady of the Lake University</td>
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<tr>
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<td>at San Antonio</td>
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<td>A.A.S., North Harris Montgomery Community College District</td>
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<tr>
<td>Thomas Hobbs</td>
<td>Geology</td>
<td>M.S., University of Texas at El Paso</td>
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<td>B.A., Boston University</td>
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<tr>
<td>Peter Horton</td>
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<td>M.S., Texas A&amp;M University at College Station</td>
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<td>B.S., Texas A&amp;M University at College Station</td>
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<tr>
<td>Timothy Howard</td>
<td>Political Science</td>
<td>M.A., University of Nebraska at Lincoln</td>
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<td>Margaret Huron</td>
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<tr>
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<tr>
<td>Mary Hurter</td>
<td>English As a Second Language</td>
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<tr>
<td>Carolyn Jacobs</td>
<td>Library</td>
<td>Ph.D., Rice University</td>
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<td>M.L.I.S., University of Texas at Austin</td>
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<td>B.A., Bowling Green State University</td>
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<tr>
<td>Lane Johnson</td>
<td>Center for Teaching and Learning</td>
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<tr>
<td>Julie Kendall</td>
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<td>B.S.N., University of Wisconsin at Oshkosh</td>
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<tr>
<td>Brian Kilpatrick</td>
<td>American Sign Language</td>
<td>M.Ed., McDaniel College</td>
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<td>(Formerly Western Maryland College)</td>
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<tr>
<td>Elizabeth King</td>
<td>Associate Degree Nursing</td>
<td>Ph.D., Texas Woman's University</td>
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<tr>
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<td>M.S.N., University of Texas Health Science Center at Houston</td>
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<td>B.S.N., University of Texas Health Science Center at Houston</td>
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<tr>
<td>Judith King</td>
<td>Associate Degree Nursing</td>
<td>M.S., Texas Woman's University</td>
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<td>B.S., North Park University</td>
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<tr>
<td>Stephen King</td>
<td>Developmental Studies</td>
<td>M.A., University of Houston</td>
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<tr>
<td>Barbara Knott</td>
<td>Associate Degree Nursing</td>
<td>B.S.N., Prairie View A&amp;M University</td>
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B.S., University of Houston
<table>
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<th>Name</th>
<th>Title</th>
<th>Institution(s)</th>
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<tr>
<td>Raymond Hawkins</td>
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<td>Ph.D., University of Texas at Austin</td>
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<td>M.A., Stephen F. Austin State University</td>
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<tr>
<td>E. Edward Albracht</td>
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<td>Karen Baird</td>
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<td>B.S., University of Wisconsin at Milwaukee</td>
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<td>D. Ryan Carstens</td>
<td>Dean, Technology</td>
<td>M.S., Oklahoma State University</td>
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<td>B.A., Oklahoma State University</td>
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<td>Michael Dannenbaum</td>
<td>Director, Facilities</td>
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<tr>
<td>John Fishero</td>
<td>Vice President, Administrative Services</td>
<td>J.D., South Texas College of Law</td>
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<td>M.B.A., University of Houston</td>
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<tr>
<td>Mario Heredia</td>
<td>Director, Research &amp; Planning</td>
<td>M.B.A., University of Houston at Victoria</td>
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<td>B.S., Westfield State College</td>
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<tr>
<td>Daniel Holt</td>
<td>Director, Business &amp; Auxiliary</td>
<td>Ph.D., Texas A&amp;M University at College Station</td>
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<tr>
<td>Robert A. Jones</td>
<td>Dean, Willow Chase/Off-site Locations</td>
<td>Ph.D., Texas A&amp;M University at College Station</td>
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<td>M.Ed., University of Louisiana at Monroe</td>
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<td>B.S., Grambling State University</td>
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<tr>
<td>Katherine Miller</td>
<td>Vice President, Continuing Education</td>
<td>Ph.D., University of North Texas</td>
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<td>M.S., Pace University at New York</td>
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<td>A.A.S., Westchester Community College</td>
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<tr>
<td>Judy Murray</td>
<td>Vice President, Academic &amp; Student</td>
<td>Ph.D., Ohio State University</td>
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<td>M.S., Wright State University</td>
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<td>Larry Rideaux</td>
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<td>Marjo Stach</td>
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<td>A.A.S., Tarrant County Junior College</td>
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<td>B.S., Penn State University</td>
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<td>Robert Teague</td>
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<tr>
<td>Mary Webster</td>
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<td>B.A., Portland State University</td>
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<td>B.A., University of Houston</td>
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<thead>
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<th>Department</th>
<th>Degrees &amp; Universities</th>
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</table>
| Robert Eubank                | Political Science                 | Ph.D., Rice University  
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| Patricia Falbo               | Mathematics                       | M.S., University of Houston  
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B.S., University of Illinois at Urbana |
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<table>
<thead>
<tr>
<th>Name</th>
<th>Department</th>
<th>Degrees</th>
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<tbody>
<tr>
<td>Carlos Landa, Art</td>
<td>Art</td>
<td>M.F.A., Southern Methodist University</td>
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<tr>
<td></td>
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<td>B.F.A., University of North Texas</td>
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<tr>
<td>Renee La Rue, English as a Second Language</td>
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<td>M.A., Michigan State University</td>
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<td>B.S., University of Toledo</td>
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<td>Steve Lewis, Human Services</td>
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<td>B.S., Sam Houston State University</td>
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<td>Craig Livingston, History</td>
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<td>M.A., Brigham Young University</td>
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<td>Gayle LoPiccolo, Biology</td>
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<td>B.S., Western Michigan University</td>
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<td>Maureen Loiacoano, Mathematics</td>
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<td>Ed.D., University of Houston</td>
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<td>M.S., University of Massachusetts at Lowell</td>
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<td>Lawrence Loomis-Price, Biotechnology</td>
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<td>Ph.D., University of California at Berkeley</td>
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<td>B.S. (Biology) Massachusetts Institute of Technology</td>
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<td>Denise Lorenz, Art</td>
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<td>John Magner, Chemistry</td>
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<td>Ph.D., University of California at Los Angeles</td>
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<td>Rajiv Malkan, Computer Information Systems</td>
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<td>M.S., Florida Institute of Technology</td>
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<td>M.S., Maharashtra State - Bombay, India</td>
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<tr>
<td>Cheryl Mansfield-Egans, Library</td>
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<td>M.L.S., Sam Houston State University</td>
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<td>B.S., University of the District of Columbia</td>
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<tr>
<td>Nishi Mathew, Biology</td>
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<td>Ph.D., University of Texas at Austin</td>
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<td>M.A., University of Texas at Austin</td>
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<tr>
<td>Philip McCue, Computer Information Systems</td>
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<td>M.B.A., University of Houston</td>
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<td>Nanette Meyer, Physical Therapy</td>
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<td>M.Ed., University of Houston</td>
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<tr>
<td>Dana Morales, Political Science</td>
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<td>Kiet Nguyen, Accounting</td>
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<td>Monique Olivas, Behavioral Science</td>
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<td>Erik Oslund, Mathematics</td>
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<td>Julie Pauls, Physical Therapy</td>
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<td>Carolyn Poe, Computer Information Systems</td>
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<td>Alice Pollock, Mathematics</td>
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<td>Betsy Powers, History</td>
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<td>Pat Price, English</td>
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<tr>
<td>David Quarles, Mathematics</td>
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<td>B.S., Texas A&amp;M University at College Station</td>
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<tr>
<td>Greg Ristow, Music</td>
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<td>M.A., Eastman School of Music (University of Rochester)</td>
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<td>M.M., Eastman School of Music (University of Rochester)</td>
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<td>B.M., Oberlin College Observatory</td>
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<table>
<thead>
<tr>
<th>Name</th>
<th>Department</th>
<th>Education</th>
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<tbody>
<tr>
<td>Jefferson Edwards</td>
<td>Economics</td>
<td>M.S., University of Arkansas B.S.B.A., University of Arkansas</td>
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<tr>
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<tr>
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<tr>
<td>Marion Goodman</td>
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<tr>
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Building B  (Science Classrooms/Labs)
Building C  (Extended Learning Center, Corporate/Continuing Education, Student Activities, Testing Center, Information Technology, College Relations, Human Resources, Education for Tomorrow Alliance)
Building D  (Center for the Arts, Gallery, Theatre, Art/Music Labs)
Building E  (Student Services, Administrative Offices, Police, Classrooms)
Building F  (Library, Classrooms)
Building G  (Montgomery College Child Care Center)
Building T  (Temporary Classrooms 101-109)
SP     Student Parking
S      Sports & Athletics
1 Library (LIBR)
2 Academic Building (ACAD)
3 Winship Building (WNSP)
4 Industrial Education (INED)
5 Fine Arts (ARTS)
6 Student Center (STSC)
7 Continuing Education (CMED)
8 Health & Physical Education (HPE)
9 College Bookstore (CBST)
10 Energy Training Center (ETRC)
11 Digital Technology Center (DTC)
12 Child Development Center (CDC)
13 Applied Technology Center (ATC)

SP Student Parking
FP Faculty Parking
VP Visitor Parking
A Athletics
P Police
1 North Hall (N)  
2 West Hall (W)  
3 Student Center (C)  
4 East Hall (E)  
5 Beckendorf Conference Center  
6 South Hall (S)  
7 Large Animal Facility (LAF)  
8 Wellness Center  
9 Library

LP Library Parking  
SP Student Parking  
CCP Conference Center Parking  
FSP Faculty/Staff Parking  
T Tennis Courts
THE UNIVERSITY CENTER
NORTH HARRIS MONTGOMERY COMMUNITY COLLEGE DISTRICT

1  The University Center (TUC)  SP  Student Parking

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