



James Stewart  
**Calculus**  
Early Transcendentals

# Degrees and Certificates

## 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, corporate 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 61- 62 credit hours as outlined. Students desiring a less comprehensive program should consider one of the accounting certificate programs also listed below.

Accounting Advanced Technical Certificate-CPA Exam Preparation: The Texas State Board of Public Accountancy (TSBPA) awarded Lone Star College System (LSCS) the designation to offer "Qualifying Educational Credit for the CPA Examination." Twelve of the LSCS 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 should be enrolled in the Accounting Advanced Technical Certificate-CPA Exam Preparation and take no less than 24 semester hours of accounting from LSCS toward meeting the 30 semester hours. Contact the accounting department at LSC-CyFair, Montgomery, North Harris or Tomball 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 advisor at any college for specific information and to obtain the recommended sequencing of courses.

## TAXATION CERTIFICATE MARKETABLE SKILLS AWARD

(MSC\_TAXC certificate offered at LSC-CyFair, Kingwood, Montgomery, North Harris and Tomball)

FIRST YEAR	Credit
ACNT 1331 Federal Income Tax: Individual	3
ACCT 2401 Principles of Accounting I	4
ACNT 1347 Federal Income Tax for Partnerships and Corporations	3
ACNT 1393 Special Topics in Taxation	3
<b>TOTAL Credits for Taxation Certificate Marketable Skills Award</b>	<b>13</b>

## ACCOUNTING CERTIFICATE

(C1\_ACC1 certificate offered at LSC-CyFair, Montgomery, North Harris and Tomball)

FIRST YEAR	Credit
ACCT 2401 Principles of Accounting I	4
ACNT 1331 Fed. Income Tax: Individual	3
ITSC 1401 Introduction to Computers	4
ACCT 2402 Principles of Accounting II	4
ACNT 2303 Intermediate Accounting I	3
Elective <sup>1</sup> Department Approved	3-4
ACNT 2304 Intermediate Accounting II	3
ACNT 2309 Cost Accounting	3
ACNT <sup>2</sup> 2331 Internal Control and Auditing	3
<b>TOTAL Credits for Accounting Certificate</b>	<b>30-31</b>

<sup>1</sup> Electives to be selected from ACNT 1340, 1347, 1391, 1393, 2330, 2332, 2333, 2371, 2380, 2381; BUSI 1301, 2301, 2304; ITSW 1404, 1407. Other electives may be chosen with Accounting department approval.

<sup>2</sup> Capstone course

## ACCOUNTING

### Associate of Applied Science degree

(AAS\_ACCS degree offered at LSC-CyFair, Montgomery, North Harris and Tomball)

FIRST YEAR		Credit
ACCT 2401	Principles of Accounting I	4
ACNT 1331	Federal Income Tax: Individual	3
HRPO 1311	Human Relations <b>OR</b>	3
PSYC 2301	General Psychology	
ITSC 1401	Introduction to Computers	4
KINE	Any physical activity course	1
ACCT 2402	Principles of Accounting II	4
ACNT 1347	Federal Income Tax for Partnerships & Corp.	3
BMGT 1327	Principles of Management	3
BUSI 2301	Business Law	3
ENGL 1301	Composition & Rhetoric I	3

SECOND YEAR		Credit
ACNT 2303	Intermediate Accounting I	3
ACNT 2309	Cost Accounting	3
ECON 2301	Macroeconomics <b>OR</b>	
ECON 2302	Microeconomics	3
MATH 1314	College Algebra	3
SPCH 1315	Public Speaking <b>OR</b>	3
SPCH 1321	Business and Professional Communication	
ACNT 2304	Intermediate Accounting II	3
ACNT <sup>1</sup> 2331	Internal Control & Auditing	3
Elective <sup>2</sup>	Humanities/Fine Arts	3
Elective <sup>3</sup>	Department approved	3-4
Elective	Outside Area of Specialization	3

**TOTAL Credits for AAS Degree 61-62**

<sup>1</sup> Capstone course

<sup>2</sup> Must meet multicultural requirement

<sup>3</sup> Electives to be selected from ACNT 1340, 1391, 1393, 2330, 2332, 2333, 2371, 2380, 2381; HRPO 2301; BMGT 1331; BUSI 1307, 2304; ITSW 1404, 1407. Other electives may be chosen with Accounting department approval.

## ACCOUNTING ADVANCED TECHNICAL CERTIFICATE-CPA EXAM PREPARATION

(C4\_ACC4 certificate offered at LSC-CyFair, Montgomery, North Harris and Tomball)

Prerequisite: Bachelor's degree that includes the equivalent of ACCT 2401, ACCT 2402, ECON 2301, ECON 2302 and BUSI 2301. If these courses are not included in the bachelor's degree, they must be completed in order to be admitted into the certificate program.

FIRST YEAR		Credit
ACNT	2303 Intermediate Accounting I	3
Elective <sup>1</sup>	Business Elective	3
ACNT 1331	Federal Income Tax: Individual	3
ACNT <sup>2</sup> 2374	Technical Writing for Accountants	3
ACNT 2304	Intermediate Accounting II	3
ACNT 1347	Federal Income Tax for Partnerships/Corporations	3
Elective <sup>1</sup>	Business Elective	3
Elective <sup>1</sup>	Business Elective	3

SECOND YEAR		Credit
ACNT 2309	Cost Accounting	3
ACNT <sup>3</sup> 2333	Advanced Accounting	3
ACNT 2330	Governmental and Not-for-Profit Accounting	3
ACNT <sup>4</sup> 1393	Federal Income Tax: Advanced	3
Elective <sup>5</sup>	Accounting Elective	3
ACNT 1340	Accounting and Business Ethics	3
ACNT <sup>6</sup> 2331	Internal Control and Auditing	3
Elective <sup>1</sup>	Business Elective	3

**TOTAL Credits for Accounting Advanced Technical Certificate 48**

<sup>1</sup> Choose business electives from the following: BMGT 1327, BMGT 1331, HRPO 2307, MRKG 2348, MRKG 1311, and BUSI 2372. Other electives may be chosen with accounting department approval.

<sup>2</sup> Meets the TSBPA's requirements for a discrete (stand-alone) course in accounting communications or business communications.

<sup>3</sup> Meets 1 semester hour out of a 2 semester hour TSBPA's requirement for accounting research and analysis.

<sup>4</sup> Meets the TSBPA's requirements for a discrete (stand-alone) course in accounting research and analysis.

<sup>5</sup> Choose accounting electives from the following: ACNT 1391, 1393, 2332, 2371<sup>3</sup>

<sup>6</sup> Capstone course

## ADVANCED TECHNOLOGY

Men and women working as Field Service, Petroleum Field Service and Automated Manufacturing Technicians complete highly technical tasks that require advanced training and knowledge. Due to the advancements in electro-mechanical systems, interdisciplinary fields are rapidly developing to address the design, operation and maintenance of products and systems that require a working knowledge of both mechanical and electronic components.

A field service technician installs and maintains oil field service equipment, instrumentation, controls, and electro-mechanical systems. After completing the Field Service technician certificate, a student can

choose to enter one of two certificate/degree tracks. The Petroleum Field Service Technician certificate and degree prepares a student for entry into the Upstream Development side of the Oil and Gas industry with an emphasis in drilling and the supporting systems needed for the completion of Oil and Gas wells. The Automated Manufacturing Technician Certificate and degree prepares a student to enter the industrial automation industry with an emphasis in robotics, programmable logic controls and automatic electro-mechanical systems. A fast track program is also available with the Oil Field Service Technician MSA (Marketable Skills Award) that allows students to enter the workforce in as little as one semester. It provides training in Hydraulics/Pneumatics, DC/AC Circuits and Petroleum Instrumentation. This certificate prepares a student to enter the industry as a technician in support of electro-mechanical, petroleum and manufacturing technologies.

### OIL FIELD SERVICE TECHNICIAN-MARKETABLE SKILLS AWARD

(MSC\_OFST award offered at LSC-CyFair and North Harris)

FIRST YEAR		Credit
PTRT	1301 Petroleum Industry	3
HYDR	1345 Hydraulics and Pneumatics	3
CETT	1409 DC-AC Circuits	4
PTRT	1424 Petroleum Instrumentation	4
<b>TOTAL Credits for Oil Field Service Technician Marketable Skills Award</b>		<b>14</b>

### FIELD SERVICE TECHNICIAN

(C1\_ETA1 certificate offered at LSC-CyFair and North Harris)

FIRST YEAR		Credit
CETT	1409 DC-AC Circuits	4
TECM	1303 Technical Calculations <b>OR</b>	3
MCHN	1343 Machine Shop Math	
DFTG	1325 Blueprint Reading & Sketching	3
HYDR	1345 Hydraulics and Pneumatics	3
PTRT	1191 Special Topics-Petroleum Technology	1
IEIR	1310 Motor Controls	3
INMT	2303 Pumps, Compressors & Mechanical Drives	3
RBTC	1401 Programmable Controllers	4
OSHT	1316 Material Handling	3
INTC <sup>1</sup>	1341 Principles of Automatic Control	3
<b>TOTAL Credits for Field Service Technician Certificate</b>		<b>30</b>

<sup>1</sup> Capstone course

### ENGINEERING TECHNICIAN CERTIFICATE

(certificate offered at LSC-CyFair and North Harris)

FIRST YEAR		Credit
CETT	1409 DC-AC Circuits	4
TECM	1303 Technical Calculations <b>OR</b>	3
MCHN	1343 Machine Shop Math	
DFTG	1325 Blueprint Reading & Sketching	3
HYDR	1345 Hydraulics and Pneumatics	3
PTRT	1191 Special Topics-Petroleum Technology	1
IEIR	1310 Motor Controls	3
INMT	2303 Pumps, Compressors & Mechanical Drives	3
RBTC	1401 Programmable Controllers	4
OSHT	1316 Material Handling	3
INTC	1341 Principles of Automatic Control	3
SECOND YEAR		Credit
ITSC	1401 Intro to Computers	4
KINE	Any physical activity course	1
Elective <sup>1</sup>	Technical	3
Elective <sup>1</sup>	Technical	3
POFI	1270 Field Reports and Data Transfer	2
Elective <sup>1</sup>	Technical	3
Elective <sup>1</sup>	Technical	3
Elective <sup>1</sup>	Technical	4
SPCH	1311 Intro to Speech Communication	3

#### TOTAL Credits for Engineering Technician Certificate 56

<sup>1</sup> Students must choose all technical electives from either track A-Automated Manufacturing Technician or track B-Petroleum Field Service Technician listed below.

Track A-Automated Manufacturing Technician (C2\_AMT2):  
MCHN 1319, ELMT 2341, RBTC 1305, INMT 1417 and INMT 2388 (capstone experience)

Track B-Petroleum Field Service Technician (C2\_PFT2):  
PTRT 1301, PTRT 1391, PTRT 1312, PTRT 1424, and PTRT 2380 (capstone experience)

**ENGINEERING TECHNICIAN****Associate of Applied Science degree**

(degree offered at LSC-CyFair and North Harris)

FIRST YEAR			Credit
CETT	1409	DC-AC Circuits	4
TECM	1303	Technical Calculations <b>OR</b>	3
MCHN	1343	Machine Shop Math	
DFTG	1325	Blueprint Reading & Sketching	3
HYDR	1345	Hydraulics and Pneumatics	3
PTRT	1191	Special Topics-Petroleum Technology	1
IEIR	1310	Motor Controls	3
INMT	2303	Pumps, Compressors & Mechanical Drives	3
RBTC	1401	Programmable Controllers	4
OSHT	1316	Material Handling	3
INTC	1341	Principles of Automatic Control	3

SECOND YEAR			Credit
ITSC	1401	Intro to Computers	4
KINE		Any physical activity course	1
Elective <sup>1</sup>		Technical	3
Elective <sup>1</sup>		Technical	3
POFI	1270	Field Reports and Data Transfer	2
Elective <sup>1</sup>		Technical	3
Elective <sup>1</sup>		Technical	3
Elective <sup>1</sup>		Technical	4
SPCH	1311	Intro to Speech Communication	3
MATH	1314	College Algebra	3
SOCI	1301	Principles of Sociology	3
Elective		Humanities/Fine Arts	3
Elective <sup>1</sup>		Technical	3-4
ENGL	1301	Composition & Rhetoric	3

**TOTAL Credits for Engineering Technician AAS 71-72**

<sup>1</sup> Students must choose all technical electives from either track A-Automated Manufacturing Technician or track B-Petroleum Field Service Technician listed below.

Track A-Automated Manufacturing Technician(AAS\_ETMT):  
MCHN 1319, ELMT 2341, RBTC 1305, INMT 1417, INMT 2388, and ELMT 2433 (capstone experience)

Track B-Petroleum Field Service Technician (AAS\_ETPT):  
PTRT 1301, PTRT 1391, PTRT 1312, PTRT 1424, PTRT 2380, and PTRT 1303 (capstone experience)

**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 General Service Technician certificate prepares the individual for basic, entry-level employment in the automotive service industry. The program provides course work specializing in brakes, under car mechanical, and the steering and suspension of the contemporary automobile and light truck that affect vehicle control and safety.

The Chassis and Electrical Technician Specialization certificate 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.

The Power Train and Driveability Technician Specialization certificate 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.

Courses completed in the certificate programs may be applied toward the Associate of Applied Science degree in Automotive Technology.

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.

## GENERAL SERVICE TECHNICIAN CERTIFICATE

(C1\_GST1 certificate offered at LSC-Montgomery  
and North Harris)

FIRST YEAR	Credit
AUMT 1405 Intro to Automotive Technology	4
AUMT 1407 Automotive Electrical Systems	4
AUMT 1410 Automotive Brake Systems	4
AUMT 1416 Suspension and Steering	4
AUMT <sup>1</sup> 2380 Cooperative Education <b>OR</b>	3
AUMT <sup>1</sup> 2328 Automotive Service	

**TOTAL Credits for General Service  
Technician Certificate** 19

<sup>1</sup> Capstone course

## CHASSIS AND ELECTRICAL TECHNICIAN SPECIALIZATION CERTIFICATE

(C1\_CET1 certificate offered at LSC-North Harris)

FIRST YEAR	Credit
AUMT 1405 Intro to Automotive Technology	4
AUMT 1407 Automotive Electrical Systems	4
AUMT 1410 Automotive Brake Systems	4
AUMT 2425 Auto Transmission & Transaxle	4
AUMT <sup>1</sup> 2381 Cooperative Education <b>OR</b>	3
AUMT <sup>1</sup> 2328 Automotive Service	
AUMT 1416 Suspension and Steering	4
AUMT 1445 Auto Heating & Air Conditioning	4
AUMT 2437 Automotive Electronics	4

**TOTAL Credits for Chassis and Electrical  
Technician Specialization Certificate** 31

<sup>1</sup> Capstone course

Note: It is strongly suggested that the following A.S.E. exams be taken by the student: The Electrical exam and one elective exam.

## POWER TRAIN AND DRIVEABILITY TECHNICIAN SPECIALIZATION CERTIFICATE

(C1\_PTD1 certificate offered at LSC-North Harris)

FIRST YEAR	Credit
AUMT 1405 Intro to Automotive Technology	4
AUMT 1407 Automotive Electrical Systems	4
AUMT 2413 Manual Drive Train and Axles	4
AUMT 2417 Engine Performance Analysis I	4
AUMT 2425 Auto Transmissions & Transaxle	4
AUMT 1419 Automotive Engine Repair	4
AUMT 2434 Engine Performance Analysis II	4

AUMT 2437 Automotive Electronics	4
AUMT <sup>1</sup> 2381 Cooperative Education <b>OR</b>	3
AUMT <sup>1</sup> 2328 Automotive Service	

**TOTAL Credits for Power Train and Driveability  
Technician Specialization Certificate** 35

<sup>1</sup> Capstone course

Note: 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

(AAS\_AUTO degree offered at LSC-North Harris)

FIRST YEAR	Credit
AUMT 1405 Intro. to Automotive Technology	4
AUMT 1407 Automotive Electrical Systems	4
ENGL 1301 Composition and Rhetoric I	3
Elective <sup>1</sup> Social/Behavioral Science	3
AUMT 1410 Automotive Brake Systems	4
AUMT 1419 Automotive Engine Repair	4
SPCH 1318 Interpersonal Communication	3
TECM 1303 Technical Calculations	3
AUMT 2417 Engine Performance Analysis I	4
HUMA <sup>2</sup> 1301 Introduction to the Humanities I	3
ITSC 1401 Introduction to Computers	4
KINE Any physical activity course	1

SECOND YEAR	Credit
AUMT <sup>3</sup> Elective	4
AUMT 2434 Engine Performance Analysis II	4
CHEM 1405 Introductory Chemistry	4
AUMT <sup>3</sup> Elective	4
AUMT 1445 Auto Heating & Air Conditioning	4
AUMT 2381 Cooperative Education	3
AUMT 2437 Automotive Electronics	4
AUMT <sup>4</sup> 2380 Cooperative Education <b>OR</b>	3
AUMT <sup>4</sup> 2328 Automotive Service	

**TOTAL Credits for Automotive  
Technology Specialization** 70

<sup>1</sup> See core requirements for AAS degree for options.

<sup>2</sup> Meets multicultural requirement

<sup>3</sup> Automotive electives to be selected from AUMT 1416, 2413, 2425

<sup>4</sup> Capstone

It is strongly suggested that the following A.S.E. exams be taken by the student: the Engine Repair exam, Engine Performance exam, Electrical exam and one elective exam.

Note: Students must meet TSI requirements. See LoneStar.edu/TSI for details.

## AVIATION MANAGEMENT

The aviation management program provides students with the opportunity to prepare for management careers within the aviation industry. Through the collaboration of educators and experts in these fields, the program includes courses in airport, and airline management, meteorology, operations, safety, and human factors. Students will gain knowledge and experience through classes focused on management skills, knowledge of the aviation industry, general education and cooperative education. Employment opportunities are available at airports, private and commercial airlines, government agencies and aviation service companies. For more information, contact counseling or a faculty member.

### AVIATION MARKETABLE SKILLS AWARD

(MSA\_AVIM award offered at LSC-North Harris)

FIRST YEAR	Credit
HMSY 1337 Introduction to Homeland Security	3
HMSY 1340 Homeland Security Intelligence Systems	3
HMSY 1371 Transportation and Border Security	3
<b>TOTAL Credits for Aviation MSA</b>	<b>9</b>

### AVIATION MANAGEMENT

#### Associate of Applied Science degree

(AAS\_AVIM degree offered at LSC-North Harris)

Prerequisite	Credit
COSC 1401 Introduction to Computers	4

FIRST YEAR	Credit
AIRP 1313 Introduction to Aviation	3
AIRP <sup>1</sup> 1317 Private Pilot Ground School <b>OR</b>	3
HMSY <sup>2</sup> 1337 Introduction to Homeland Security	3
ENGL 1301 Composition and Rhetoric I	3
BMGT 1309 Information and Project Mgmt.	3
MATH 1314 College Algebra	3
Elective <sup>3</sup> Speech Elective	3
BMGT 1327 Principles of Management	3
AIRP <sup>1</sup> 1307 Aviation Meteorology <b>OR</b>	3
HMSY <sup>2</sup> 1340 Homeland Security Intelligence Systems	4
ACCT 2401 Principles of Accounting I	4
KINE Any physical activity course	1
AIRP 1347 Human Factors in Aviation	3

SECOND YEAR	Credit
AVIM <sup>1</sup> 2331 Airline Management <b>OR</b>	3
HMSY <sup>2</sup> 1371 Transportation and Border Security	4
ACCT 2402 Principles of Accounting II	3
HRPO 2307 Organizational Behavior	3
AVIM 2337 Aviation Law	3
AVIM 2371 Aviation Communication	3
ECON 2302 Microeconomics	3
AVIM 2335 Airport Management	3
Elective <sup>4</sup> Humanities/Fine Arts	3
GEOL 1405 Environmental Geology	4
AVIM <sup>5</sup> 1380 Cooperative Education - Aviation/ Airway Mgmt & Ops	3

**TOTAL Credits for Aviation  
Management AAS Degree** **68**

<sup>1</sup> Aviation Management Track

<sup>2</sup> Transportation Security Track

<sup>3</sup> Choose from SPCH 1311, 1318, 1321 or BUSI 2304

<sup>4</sup> Must meet multicultural requirement

<sup>5</sup> Capstone course

## BIOTECHNOLOGY

Biotechnology is a continually evolving field offering solutions to problems in fields such as forensics, pharmaceutical, medical research, alternative fuels, and agriculture. LSC-Montgomery offers the skills necessary for entry-level work in the bioscience industry. The Biotechnology Associate of Applied Science (AAS) degree offers experiences in cell culture, laboratory methods, molecular biology, and laboratory instrumentation. Additionally, the program includes a sequence of biology, chemistry, and microbiology. In the final semester of the program, students work as interns in area biotechnology companies or medical center research labs to complete their training. The LSC-Montgomery biotechnology program is the top-ranked program in Texas and the only one to be rated as "Exemplary" by the Texas Higher Education Coordinating Board. In addition, the biotechnology associate degree program is rated as a recognized biotechnology program by the Texas Skill Standards Board (TSSB) as it has integrated the state's biotechnology and biomedical skill standards into its program.

After completing the AAS degree, students may choose to transfer to a neighboring university and enroll in a "2+2" program leading to a bachelor's degree in biotechnology or related fields. Currently, such a program exists with the UH-Downtown and the University of Texas, Medical Branch. The courses for several of these bachelor degree programs are offered at the LSC-University Center, located on the LSC-Montgomery campus.

For students with an AS or BS degree in the natural sciences, LSC-Montgomery offers an Advanced Technical

Certificate (ATC) in Biotechnology. Students who have taken the prerequisite courses in chemistry and biology can complete the Biotechnology ATC in one year. The program requires only seven courses, including an internship, and thus allows students rapid entry into the biotech workforce.

Students with the appropriate level of prior training may elect to take individual courses within the biotechnology core, with the exception of the internship course. A student, for example, may take the Molecular Biology Techniques course (BITC 2441) to gain skills in that area.

The LSC-Montgomery Biotechnology Institute (MCBI) was created to establish a point of contact for all biotechnology training inquiries. The Institute's goal is to prepare students for all levels of entry into the biotechnology industry. The MCBI functions to identify and meet biotechnology industry training needs, recruit students using a variety of outreach programs, help retrain workers changing careers through the Biotechnology ATC, and partner with four-year programs. Please e-mail [mcbiotech@LoneStar.edu](mailto:mcbiotech@LoneStar.edu), call 936.273.7060, or visit our website at [montgomery.LoneStar.edu/biotech](http://montgomery.LoneStar.edu/biotech) for more information about the MCBI.

## BIOTECHNOLOGY

### Associate of Applied Science degree

(AAS\_BIOT degree offered at LSC-Montgomery)

FIRST YEAR		Credit
BIOL	1406 Biology I	4
BITC <sup>1</sup>	1411 Intro. to Biotechnology	4
CHEM	1405 Introductory Chemistry <b>OR</b>	4
CHEM	1411 General Chemistry I	
ENGL	1301 Composition & Rhetoric I	3
MATH	1314 College Algebra	3
BIOL	2420 Medical Microbiology <b>OR</b>	4
BIOL	2421 General Microbiology	
BITC <sup>1</sup>	1402 Biotechnology Lab Methods & Techniques	4
CHEM	1419 Intro Organic/Biochemistry <b>OR</b>	4
CHEM	1412 General Chemistry II	
ENGL	1302 Composition & Rhetoric II	3
SECOND YEAR		Credit
BIOL	1407 Biology II	4
BIOL	2416 Genetics	4
BITC <sup>1</sup>	2411 Biotechnology Lab Instrumentation	4
PHIL	2306 Introduction to Ethics	3
KINE	Any physical activity course	1
BITC	1191 Special Topics in Biotechnology	1
BITC <sup>1</sup>	2441 Molecular Biology Techniques	4
BITC	2431 Cell Culture Techniques	4
SPCH	1311 Intro to Speech Communication <b>OR</b>	3
SPCH	1315 Public Speaking <b>OR</b>	

SPCH	1321 Business and Professional Communication	
SOCI <sup>2</sup>	1301 Principles of Sociology <b>OR</b>	3
SOCI <sup>2</sup>	2319 Minority Studies	
BITC	1191 Special Topics in Biotechnology	1
BITC <sup>3</sup>	2486 Internship	4

### TOTAL Credits for Biotechnology AAS Degree

69

- <sup>1</sup> Meets computer competency  
<sup>2</sup> Meets multicultural requirement  
<sup>3</sup> Capstone course

## BIOTECHNOLOGY ADVANCED TECHNICAL CERTIFICATE

(C4\_BIO4 certificate offered at LSC-Montgomery)

FIRST YEAR		Credit
BITC	1402 Biotechnology Lab Methods & Techniques	4
BITC	2411 Biotechnology Lab Instrumentation	4
BIOL	2416 Genetics	4
BITC	1191 Special Topics in Biotechnology	1
BITC	2431 Cell Culture Techniques	4
BITC	2441 Molecular Biology Techniques	4
BITC	1191 Special Topics in Biotechnology	1
BITC	2486 Internship	4

### TOTAL Credits for Biotechnology Advanced Technical Certificate

26

## 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 updated skills

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.



## DEGREES AND CERTIFICATES

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

- PC Desktop or PC Support
- Computer Networking
- Cisco Internetworking
- E-Business Web Developer

Some of the job market titles addressed by these certificates are:

- PC Desktop Support Technician
- Network Technician
- Integrated Technology Specialist
- 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

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 in areas such as Visual Basic, NET, C, RPG programming, and Network Security.

Students will find coursework, taught by certified instructors, in our certificate and degree programs that lead to professional certification from vendors such as Microsoft, Cisco and Oracle.

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 a counselor or advisor at any college for specific information and to obtain the recommended sequencing of courses.

Students interested in transferring to a bachelor's program in computer science should consider completing the Associate of Arts degree with a Field of Study in Computer Science. See the academic transfer section of this catalog for details.

## INFORMATION TECHNOLOGY CERTIFICATE

(C1\_CIT1 certificate offered at LSC-CyFair, Kingwood, Montgomery, North Harris and Tomball)

FIRST YEAR		Credit
ITSC	1401 Introduction to Computers <b>OR</b>	4
COSC	1401 Introduction to Computers	
BMGT	1309 Information & Project Management	3
ITSC	1405 Intro to PC Operating Systems	4
ITNW <sup>1</sup>	1425 Fundmntls of Networking Technlgs	4
POFT	1301 Business English	3

**TOTAL Credits for Information Technology Certificate** **18**

<sup>1</sup> Capstone course

## MICROSOFT OFFICE SPECIALIST CERTIFICATE

(C1\_MSO1 certificate offered at LSC-CyFair, Kingwood, Montgomery, North Harris and Tomball)

FIRST YEAR		Credit
ITSC	1401 Introduction to Computers <b>OR</b>	4
COSC	1401 Introduction to Computers	
ITSW	1301 Introduction to Word Processing	3
POFT	1301 Business English	3
ITSC <sup>1</sup>	2331 Integrated Software Appl. III <b>OR</b>	3
ITSC <sup>1</sup>	2380 Cooperative Education	
ITSW	1404 Introduction to Spreadsheets	4
ITSW	1407 Introduction to Databases	4

**TOTAL Credits for Microsoft Office Specialist Certificate** **21**

<sup>1</sup> Capstone course

## INTEGRATED TECHNOLOGY BASIC CERTIFICATE

(C1\_ITB1 certificate offered at LSC-North Harris)

Prerequisite	Credit
ITSC 1401 Introduction to Computers <b>OR</b>	4
COSC 1401 Introduction to Computers	

FIRST YEAR		Credit
ITSC	1405 Intro to PC Operating Systems	4
ITSC	1425 Personal Computer Hardware	4
ENGL	1301 Composition & Rhetoric I	3
ITCC	1401 Cisco Exploration 1-Network Fundamentals	4
ITCC	1404 Cisco Exploration 2-Routing Protocols and Concepts	4
SPCH	1321 Business and Professional Communication	3

**TOTAL Credits for Integrated Technology Basic Certificate** **26**

## INTEGRATED TECHNOLOGY ADVANCED CERTIFICATE

(C2\_ITA2 certificate offered at LSC-North Harris)

Prerequisite		Credit
ITSC 1401	Introduction to Computers <b>OR</b>	4
COSC 1401	Introduction to Computers	

FIRST YEAR		Credit
ITSC 1405	Intro to PC Operating Systems	4
ITSC 1425	Personal Computer Hardware	4
ENGL 1301	Composition & Rhetoric I	3
ITCC 1401	Cisco Exploration 1-Network Fundamentals	4
ITCC 1404	Cisco Exploration 2-Routing Protocols and Concepts	4
SPCH 1321	Business and Professional Communication	3
ITCC 2408	Cisco Exploration 3-LAN Switching and Wireless	4
ITCC 2410	Cisco Exploration 4-Accessing the WAN	4
MATH 1314	College Algebra	3

SECOND YEAR		Credit
ITMT 1470	Windows 7 Client Configuration 70-680	4
ITMT 1471	Windows Server 2008	4
Elective <sup>1</sup>	Technical Elective	3-4
ITSY 1442	Information Technology Security <b>OR</b>	
ITSC 1407	UNIX Operating System I	4

**TOTAL Credits for Integrated Technology  
Advanced Certificate** **52-53**

<sup>1</sup> Choose from ITCC 2441, ITSE 1445, ITNW 2452, ITSY 2400, ITSY 2401, EECT 1371, EECT 1307, ITMT 1472, ITMT 2470

## INTEGRATED TECHNOLOGY

### Associate of Applied Science degree

(AAS\_ITEC degree offered at LSC-North Harris)

Prerequisite		Credit
ITSC 1401	Introduction to Computers <b>OR</b>	4
COSC 1401	Introduction to Computers	

FIRST YEAR		Credit
ITSC 1405	Intro to PC Operating Systems	4
ITSC 1425	Personal Computer Hardware	4
ENGL 1301	Composition & Rhetoric I	3
ITCC 1401	Cisco Exploration 1-Network Fundamentals	4
ITCC 1404	Cisco Exploration 2-Routing Protocols and Concepts	4
SPCH 1321	Business and Professional Communication	3

ITCC 2408	Cisco Exploration 3-LAN Switching and Wireless	4
ITCC 2410	Cisco Exploration 4-Accessing the WAN	4
MATH 1314	College Algebra	3

SECOND YEAR		Credit
ITMT 1470	Windows 7 Client Configuration 70-680	4
ITMT 1471	Windows Server 2008	4
Elective <sup>1</sup>	Technical Elective	3-4
ITSY 1442	Information Technology Security <b>OR</b>	
ITSC 1407	UNIX Operating System I	4
Elective <sup>1</sup>	Technical Elective	3-4
Elective <sup>2</sup>	Capstone Course	3-4
SOCI <sup>3</sup> 1301	Principles of Sociology	3
KINE	Any physical activity course	1
HUMA <sup>3</sup> 1301	Introduction to the Humanities I	3

**TOTAL Credits for  
Integrated Technology AAS** **65-68**

<sup>1</sup> Choose from ITCC 2441, ITSE 1445, ITNW 2452, ITSY 2400, ITSY 2401, EECT 1371, EECT 1307, ITMT 1472, ITMT 2470.

<sup>2</sup> Capstone choose from ITSC 2381, ITSY 2443, ITSE 2433 or ITSE 2456

<sup>3</sup> Meets multicultural requirement

## COMPUTER NETWORKING SPECIALIZATION

### Associate of Applied Science degree

(specializations offered at LSC-CyFair, Kingwood, North Harris and Tomball)

Prerequisite		Credit
ITSC 1401	Introduction to Computers <b>OR</b>	4
COSC 1401	Introduction to Computers <b>OR</b>	
CPMT 1403	Intro. to Computer Technology	

FIRST YEAR		Credit
BMGT 1309	Information & Project Management	3
Elective <sup>1</sup>	Social/Behavioral Science	3
ITSC 1405	Intro to PC Operating Systems	4
ITNW 1425	Fundamentals of Netwkg Technlgs	4
ENGL 1301	Composition & Rhetoric I	3
Elective <sup>1</sup>	Humanities/Fine Arts	3
Tech. Track <sup>2</sup>	Technical Networking Core	4
Tech. Track <sup>2</sup>	Technical Networking Core	4
KINE	Any physical activity course	1
POFT 1301	Business English <b>OR</b>	3
BUSI <sup>3</sup> 2304	Business Communications	3

## DEGREES AND CERTIFICATES

SECOND YEAR		Credit
Elective <sup>4,7</sup>	Math/Natural Science	3-4
ITSC 1425	Personal Computer Hardware	4
Tech. Track <sup>2</sup>	Technical Networking	4
Tech. Track <sup>2</sup>	Technical Networking	4
Elective <sup>4</sup>	General Education	3
Elective <sup>5</sup>	Technical Elective	3-4
Elective <sup>5</sup>	Technical Elective	3-4
ITSC <sup>6</sup> 2439	Personal Computer Help Desk Support <b>OR</b>	3-4
ITSC <sup>6</sup> 2380	Cooperative Education	

**TOTAL Credits for Computer Networking Specialization AAS 63-67**

- <sup>1</sup> To meet multicultural requirement, choose an approved course from either social/behavioral science or humanities/fine arts elective
- <sup>2</sup> All Technical Networking courses must be chosen from the same track:  
**Microsoft Track (AAS\_CNMS):** ITMT 1470, ITMT 1471, ITMT 1472 or ITMT 1473, ITMT 2470  
**Cisco Track (AAS\_CNCI):** ITCC 1401, ITCC 1404, ITCC 2408, ITCC 2410
- <sup>3</sup> Course meets speech competency
- <sup>4</sup> Choose elective from general education requirements
- <sup>5</sup> Choose Technical Elective from ITMT 1xxx, ITMT 2xxx, ITCC 2xxx, ITSC, ITSW, ITSY, ITNW, IMED, GRPH, or CPMT
- <sup>6</sup> Capstone course
- <sup>7</sup> Students must meet TSI requirements. See LoneStar.edu/TSI for details.

## NETWORK ADMINISTRATOR CERTIFICATE - MS LEVEL 1/CCNA

(certificate offered at LSC-CyFair, Kingwood, North Harris and Tomball)

Prerequisite	Credit
ITNW <sup>1</sup> 1425	Fundamentals of Netwkg Technlgs 4
ITSC 1401	Introduction to Computers <b>OR</b> 4
COSC 1401	Introduction to Computers

FIRST YEAR		Credit
Tech. Track <sup>2</sup>	Technical Networking (1 <sup>st</sup> 8 weeks)	4
Tech. Track <sup>2</sup>	Technical Networking (2 <sup>nd</sup> 8 weeks)	4
Tech. Track <sup>2</sup>	Technical Networking (1 <sup>st</sup> 8 weeks)	4
Tech. Track <sup>2</sup>	Technical Networking (2 <sup>nd</sup> 8 weeks)	4

**TOTAL Credits for Network Administrator MCSA/CCNA Certificate 20-24**

- <sup>1</sup> ITNW 1425 Fundamentals of Networking Technologies is required for Microsoft track only. Students in the Microsoft track will complete 24 hours, and students in the Cisco track will complete 20 hours.
- <sup>2</sup> All technical networking courses must be chosen from the same track:  
**Microsoft Track (C1\_MCSA):** ITMT 1470, ITMT 1471, ITMT 1472 or 1473, ITMT 2470  
**Cisco Track (C1\_CCNA):** ITCC 1401, ITCC 1404, ITCC 2408, ITCC 2410

## NETWORK ENGINEER CERTIFICATE-MS LEVEL II/CCNP

(certificate offered at LSC-CyFair, Kingwood, North Harris and Tomball)

Prerequisite	Credit
ITNW <sup>1</sup> 1425	Fundmntls of Networking Technlgs 4
ITSC 1401	Introduction to Computers <b>OR</b> 4
COSC 1401	Introduction to Computers

FIRST YEAR		Credit
Tech. Track <sup>2</sup>	Technical Networking (1 <sup>st</sup> 8 weeks)	4
Tech. Track <sup>2</sup>	Technical Networking (2 <sup>nd</sup> 8 weeks)	4
Tech. Track <sup>2</sup>	Technical Networking (1 <sup>st</sup> 8 weeks)	4
Tech. Track <sup>2</sup>	Technical Networking (2 <sup>nd</sup> 8 weeks)	4

SECOND YEAR		Credit
Tech. Track <sup>2</sup>	Technical Networking (1 <sup>st</sup> 8 weeks)	4
Tech. Track <sup>2</sup>	Technical Networking (2 <sup>nd</sup> 8 weeks)	4
Tech. Track <sup>2</sup>	Technical Networking	4
Elective <sup>3</sup>	Technical Networking Elective	4

**TOTAL Credits for Network Engineer MCSE/CCNP Certificate 36-40**

- <sup>1</sup> ITNW 1425 Fundamentals of Networking Technologies is required for Microsoft track only. Students in the Microsoft track will complete 40 hours. Students in the Cisco track will complete 36 hours.
- <sup>2</sup> All technical networking courses must be chosen from the same track:  
**Microsoft Track (C1\_MCSE):** ITMT 1470, ITMT 1471, ITMT 1472 or ITMT 1473, ITMT 2470, ITMT 24xx, ITNW 24xx or departmental approval.  
**Cisco Track (C1\_CCNP):** ITCC 1401, ITCC 1404, ITCC 2408, ITCC 2410, ITCC 2454, ITCC 2455, ITCC 2456
- <sup>3</sup> Select technical networking elective from ITNW, ITMT ITSC, ITCC

## PC DESKTOP SPECIALIST CERTIFICATE

(C1\_PCDS certificate offered at LSC-CyFair, Kingwood, Montgomery, North Harris and Tomball)

FIRST YEAR		Credit
ITSC 1401	Introduction to Computers <b>OR</b>	4
COSC 1401	Introduction to Computers	
BMGT 1309	Information & Project Management	3
ITNW 1425	Fundamentals of Netwkg Technlgs <b>OR</b>	
ITCC 1401	Cisco Exploration I-Network Fundamentals	4
ITSC 1405	Intro to PC Operating Systems	4
POFT 1301	Business English	3
ITSW 1301	Intro to Word Processing	3
ITSW 1404	Introduction to Spreadsheets	4
POFT 1325	Bus Math & Machine Applications	3
POFT <sup>1</sup> 2331	Administrative Systems	3
IMED 1316	Web Design I	3

**TOTAL Credits for PC Desktop Specialist Certificate 34**

- <sup>1</sup> Capstone course

**PC SUPPORT SPECIALIST CERTIFICATE**

(C2\_PCSS certificate offered at LSC-CyFair, Kingwood, Montgomery, North Harris and Tomball)

FIRST YEAR		Credit
ITSC	1401 Introduction to Computers <b>OR</b>	4
COSC	1401 Introduction to Computers	
BMGT	1309 Information & Project Mgmt	3
ITNW	1425 Fundamentals of Netwkg Technlgs <b>OR</b>	
ITCC	1401 Cisco Exploration I-Network Fundamentals	4
ITSC	1405 Intro to PC Operating Systems	4
POFT	1301 Business English	3
IMED	1316 Web Design I	3
ITSW	1404 Introduction to Spreadsheets	4
ITSW	1301 Intro to Word Processing	3
POFT	1325 Bus Math/Machine Applications	3
POFT	2331 Administrative Systems	3

SECOND YEAR		Credit
Elective <sup>1</sup>	Technical <b>OR</b>	3-4
ACNT	1303 Introduction to Accounting I	
ENGL	1301 Composition & Rhetoric I	3
ITSC	1425 Personal Computer Hardware	4
ITSC <sup>2</sup>	2439 Personal Computer Help Desk Support <b>OR</b>	3-4
ITSC <sup>2</sup>	2380 Cooperative Education	
ITSW	1407 Introduction to Database	4
<b>TOTAL Credits for PC Support Specialist Certificate</b>		<b>51-53</b>

<sup>1</sup> Select from ITCC, ITSC, ITSE, ITSW, ITNW, ITMT, IMED, GRPH or CPMT

<sup>2</sup> Capstone course

Note: Students must meet TSI requirements. See LoneStar.edu/TSI for details.

**PROGRAMMING SPECIALIST CERTIFICATE**

(C1\_CPS1 certificate offered at LSC-CyFair, Kingwood, Montgomery, North Harris and Tomball)

FIRST YEAR		Credit
ITSC	1401 Introduction to Computers <b>OR</b>	4
COSC	1401 Introduction to Computers	
ITSE	1402 Computer Programming <b>OR</b>	3-4
COSC	1309 Logic Design	
SPCH	1318 Interpersonal Communications	3
Elective <sup>1</sup>	Programming Language	3-4
Elective <sup>1</sup>	Programming Language	4
ITNW	1425 Fundamentals of Netwkg Technlgs <b>OR</b>	
ITCC	1401 Cisco Exploration I-Network Fundamentals	4
ITSC	1405 Intro to PC Operating Systems	4

SECOND YEAR		Credit
Elective <sup>2</sup>	Programming Language (sequence course)	4
Elective <sup>2</sup>	Programming Language (sequence course)	4
ITSE	1450 System Analysis and Design	4
ITSE <sup>3</sup>	2459 Adv. Computer Programming <b>OR</b>	3-4
ITSE <sup>3</sup>	2380 Cooperative Education	

**TOTAL Credits for Programming Specialist Certificate** **40-43**

<sup>1</sup> ITSE 1356, 1430, 1432, 1407, 1418, 2417

<sup>2</sup> ITSE 2449, 2431, 1492 or INEW 2438

<sup>3</sup> Capstone course

**PROGRAMMING SPECIALIST SPECIALIZATION**

**Associate of Applied Science degree**

(AAS\_CSPS degree offered at LSC-CyFair, Kingwood, Montgomery, North Harris and Tomball)

FIRST YEAR		Credit
Elective <sup>1</sup>	General Education	3
ENGL	1301 Composition & Rhetoric I	3
ITSC	1401 Introduction to Computers <b>OR</b>	4
COSC	1401 Introduction to Computers	
ITSE	1402 Computer Programming <b>OR</b>	3-4
COSC	1309 Logic Design	
MATH <sup>2</sup>	Elective	3-4
ACNT	1303 Introduction to Accounting I <b>OR</b>	3-4
ACCT	2401 Principles of Accounting I	
Elective <sup>3</sup>	Programming Language	3-4
Elective <sup>3</sup>	Programming Language	4
ITSC	1405 Intro to PC Operating Systems	4

SECOND YEAR		Credit
Elective <sup>4</sup>	Social/Behavioral Science	3
Elective <sup>5</sup>	Programming Language (sequence course)	4
Elective <sup>5</sup>	Programming Language (sequence course)	4
KINE	Any physical activity course	1
SPCH	1318 Interpersonal Communications	3
Elective <sup>6</sup>	Technical	3-4
Elective <sup>4</sup>	Humanities/Fine Arts	3
ITNW	1425 Fundamentals of Netwkg Technlgs <b>OR</b>	
ITCC	1401 Cisco Exploration I-Network Fundamentals	4
ITSE	1450 System Analysis and Design	4
ITSE <sup>7</sup>	2459 Adv. Computer Programming <b>OR</b>	3-4
ITSE <sup>7</sup>	2380 Cooperative Education	

**TOTAL Credits for Programming Specialist Specialization** **62-68**

<sup>1</sup> Choose from general education courses

<sup>2</sup> Choose from MATH 1314 or higher level course

<sup>3</sup> ITSE 1356, 1407, 1430, 1432, 1418, or 2417

<sup>4</sup> To meet multicultural requirement, choose an approved course from either social/behavioral science or humanities/fine art elective.

## DEGREES AND CERTIFICATES

<sup>5</sup> ITSE 1492, 2449, 2431, or INEW 2438

<sup>6</sup> Choose from ITSE, ITSW, ITSY, ITNW, ITSC, IMED, GRPH

<sup>7</sup> Capstone course

### C++ PROGRAMMING

#### Enhanced Skills Certificate

(C3\_CCP3 certificate offered at LSC-CyFair, Kingwood, North Harris and Tomball)

FIRST YEAR	Credit
ITSE <sup>1</sup> 1407 Intro to C++ Programming	4
ITSE <sup>1</sup> 2431 Adv. C++ Programming	4
ITSE <sup>1</sup> 2459 Adv. Computer Programming	4

**TOTAL Credits for Enhanced Skills Certificate** 12

**GRAND TOTAL for AAS Degree with Enhanced Skills Certificate** 74-80

<sup>1</sup> Courses used to meet requirements in AAS cannot be used toward requirements in enhanced skills certificate.

### VISUAL BASIC

#### Enhanced Skills Certificate

(C3\_CVB3 certificate offered at LSC-CyFair, Kingwood, North Harris and Tomball)

FIRST YEAR	Credit
ITSE <sup>1</sup> 1432 Introduction to Visual Basic.Net Programming	4
ITSE <sup>1</sup> 2449 Adv. Visual BASIC Programming	4
ITSE <sup>1</sup> 2459 Adv. Computer Programming	4

**TOTAL Credits for Enhanced Skills Certificate** 12

**GRAND TOTAL for AAS Degree with Enhanced Skills Certificate** 74-80

<sup>1</sup> Courses used to meet AAS requirements cannot be used to meet requirements in enhanced skills certificate.

### E-BUSINESS WEB DEVELOPER CERTIFICATE

(C1\_WEB1 certificate offered at LSC-CyFair, Kingwood, Montgomery and North Harris)

Prerequisite	Credit
ITSC 1401 Introduction to Computers <b>OR</b>	4
COSC 1401 Introduction to Computers	

FIRST YEAR	Credit
IMED 1316 Web Design I	3
ITSE 1402 Computer Programming	4
ITSW 1407 Introduction to Database	4

POFT 1301 Business English	3
Elective <sup>1</sup> Programming Language	4
ITSC 1405 Intro to PC Operating Systems	4
ITNW 1425 Fundamentals of Netwkg Technlgs <b>OR</b>	4
ITCC 1401 Cisco Exploration I-Network Fundamentals	
Elective <sup>2</sup> Programming Language	4
ITSC 1407 UNIX Operating System I	4
IMED <sup>3</sup> 2349 Internet Server Management	3

**TOTAL Credits for E-Business Web Developer Certificate** 41

<sup>1</sup> ITSE 1432, 1407, 1445, 1492

<sup>2</sup> ITSE 2449, 2431, 2454, 2417, 1492

<sup>3</sup> Capstone course

### E-BUSINESS WEB DEVELOPER SPECIALIZATION

#### Associate of Applied Science degree

(AAS\_EBUS specialization offered at LSC-CyFair, Kingwood and North Harris)

Prerequisite	Credit
ITSC 1401 Introduction to Computers <b>OR</b>	4
COSC 1401 Introduction to Computers	

FIRST YEAR	Credit
BMGT 1309 Information & Project Management	3
ITNW 1425 Fundamentals of Netwkg Technlgs <b>OR</b>	
ITCC 1401 Cisco Exploration I-Network Fundamentals	4
ITSC 1405 Intro to PC Operating Systems	4
ITSE 1402 Computer Programming	4
POFT <sup>1</sup> 1301 Business English	3
Elective <sup>2</sup> Programming Language	4
IMED 1316 Web Design I	3
ITSC 1407 UNIX Operating System I	4
ITSW 1407 Introduction to Database	4
MRKG 1311 Principles of Marketing	3

SECOND YEAR	Credit
Elective <sup>3</sup> Advanced Databases (SQL)	4
Elective <sup>4</sup> Humanities/Fine Arts	3
Elective <sup>4</sup> Social/Behavioral Science	3
Elective <sup>5</sup> Programming Language (sequence course)	4
ENGL 1301 Composition & Rhetoric I	3
Elective <sup>6</sup> General Education	3
MATH <sup>7</sup> Elective	3-4
ITSE 2472 Web Application Development	4
ITSE <sup>8</sup> 2380 Cooperative Education <b>OR</b>	3
IMED <sup>8</sup> 2309 Internet Commerce <b>OR</b>	
ITSC <sup>8</sup> 2335 Application Software Problem Solving	
KINE Any physical activity course	1

**TOTAL Credits for E-Business Web Developer Specialization** 71-72

- <sup>1</sup> Course meets communication competency
- <sup>2</sup> Choose from ITSE 1432, 1407, 1445, 1492
- <sup>3</sup> ITSE 2433, 2456, or ITSW 2437 depending on concentration
- <sup>4</sup> To meet the multicultural component for the AAS degree, 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
- <sup>5</sup> Choose from ITSE 2449, 2431, 2454, 2417, 1492
- <sup>6</sup> Choose from general education electives
- <sup>7</sup> Choose MATH 1314 or higher level course
- <sup>8</sup> Capstone course

## COSMETOLOGY

The program offers certificates for the facial specialist, instructor license and operator license. The certificate program is a full-time, 12-month program for Cosmetology Operator certificate and full-time, 8-month program for Facial Specialist certificate and Cosmetology Instructor certificate. All three certificate programs are approved by the Texas Department of Licensing and Regulations. Upon successful completion of the program requirements, graduates are eligible to take their state exam. Upon passing their state exam, program graduates become licensed to practice in the State of Texas.

Graduates of the cosmetology certificate programs have many employment opportunities including becoming a hair dresser, skin care specialist, and make-up artist. 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.

Three Associate of Applied Science degrees are available in this program. The general education core courses will transfer to a variety of universities. Contact the counselor or advisor at any college for specific information and to obtain the recommended sequencing of courses.

### Admission criteria for Facial Specialist and Operator Certificate, Cosmetology Facial AAS degree, and Cosmetology AAS degree

In addition to the system admission requirements, the following are requirements for admission to the cosmetology program.

1. High school diploma or GED.
2. Completed ENGL 0304 and ENGL 0306 or (ESOL) equivalent, or higher level ENGL course or placement by testing.

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 must have the registration form approved by the cosmetology academic counselor. Applicants who have completed hours in cosmetology in other educational programs may apply for placement by examination for CSME 1254, 1310, 1501, and 1505. Official verification of the hours completed is required.

### Admission criteria for Cosmetology Instructor Certificate and Cosmetology Instructor AAS degree

In addition to the system 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.
5. Minimum age of 18 years.
6. Must pass comprehensive cosmetology placement examination before taking any cosmetology instructor classes.

### Progression Requirements

Once admitted to the cosmetology program, a student must attain a grade of "C" or better in each cosmetology course as well as satisfactory attendance record (refer to Cosmetology Student Handbook) in order to progress in the program.

### Readmission Policy

A student who withdraws from the cosmetology program may be re-admitted only once with the recommendation of the department faculty.

## DEGREES AND CERTIFICATES

### COSMETOLOGY INSTRUCTOR CERTIFICATE

(C1\_CIN1 certificate offered at LSC-Kingwood  
and North Harris)

Prerequisite	Credit
ENGL 1301 Composition & Rhetoric I	3
Electives <sup>1</sup> General Education	9

FIRST YEAR	Credit
CSME 1434 Cosmetology Instructor I	4
CSME 1435 Orientation to the Instruction of Cosmetology	4
CSME 2414 Cosmetology Instructor II	4
CSME 2415 Cosmetology Instructor III	4
CSME 2444 Cosmetology Instructor IV	4
CSME 2445 Instructional Theory & Clinical Oper	4

**TOTAL Credits for Cosmetology  
Instructor Certificate 36**

<sup>1</sup> Suggested general education electives are those that appear in the Cosmetology AAS degree plans  
Note: Capstone experience is completed by taking a departmental exam.

### COSMETOLOGY INSTRUCTOR

**Associate of Applied Science degree**

(AAS\_COSI degree offered at LSC-Kingwood  
and North Harris)

FIRST YEAR	Credit
ENGL 1301 Composition & Rhetoric I	3
SPCH 1315 Public Speaking <b>OR</b>	3
SPCH 1318 Interpersonal Communication	
PSYC 2301 General Psychology	3
KINE 1304 Personal Health	3
Elective <sup>1</sup> Math/Natural Science	3-4
CSME 1434 Cosmetology Instructor	4
CSME 1435 Orientation to the Instruction of Cosmetology	4
CSME 2414 Cosmetology Instructor II	4
ITSC 1401 Introduction to Computers <b>OR</b>	
COSC 1401 Introduction to Computers	4

SECOND YEAR	Credit
CSME 2415 Cosmetology Instructor III	4
CSME 2444 Cosmetology Instructor IV	4
CSME 2445 Instruction Theory & Clinic Operation	4
GOVT 2301 American Government	3
BUSG 2309 Small Business Management/Entrepreneurship	3
HRPO 1311 Human Relations	3
ENGL 1302 Composition & Rhetoric II	3
MRKG 2333 Principles of Selling <b>OR</b>	3
Elective <sup>2</sup> Business course	
KINE Any physical activity course	1
Elective <sup>3</sup> Humanities/Fine Arts	3

**TOTAL Credits for Cosmetology  
Instructor AAS degree 62-63**

<sup>1</sup> See core requirements for AAS degree for options. Students must meet TSI requirements. See LoneStar.edu/TSI for details.

<sup>2</sup> Choose one course from MRKG, BUSG, or HRPO with departmental approval

<sup>3</sup> Must meet multicultural requirement  
Note: Capstone experience is completed by taking a departmental exam

### COSMETOLOGY OPERATOR CERTIFICATE

(C1\_COP1 certificate offered at LSC-Kingwood  
and North Harris)

FIRST YEAR	Credit
CSME 1254 Artistry of Hair Design I	2
CSME 1310 Intro to Haircutting & Related Theory	3
CSME 1501 Orientation to Cosmetology	5
CSME 1505 Fundamentals of Cosmetology	5
CSME 1553 Chemical Reformation and Related Theory	5
CSME 2310 Intermediate Haircutting and Related Theory	3
CSME 2337 Advanced Cosmetology Techniques	3
CSME 2501 Principles of Hair Coloring and Related Theory	5
CSME 2539 Advanced Hair Design	5
CSME 2541 Prep. for the State Licensing Exam	5

**TOTAL Credits for Cosmetology  
Operator Certificate 41**

Note: Capstone experience is completed by taking a departmental exam.

### FACIAL SPECIALIST CERTIFICATE

(C1\_FCL1 certificate offered at LSC-Kingwood  
and North Harris)

FIRST YEAR	Credit
CSME 1420 Orientation to Facial Specialist	4
CSME 1421 Principles of Facial and Skin Care Technology I	4
CSME 1248 Principles of Skin Care	2
CSME 1447 Principles of Skin Care/Facials and Related Theory	4
CSME 1445 Principles of Facial and Skin Care Technology II	4
CSME 2431 Principles of Facials and Skin Care Technology III	4

**TOTAL Credits for Facial Specialist  
Certificate 22**

Note: Capstone experience is completed by taking a departmental exam

**COSMETOLOGY FACIAL****Associate of Applied Science degree**

(AAS\_COSF degree offered at LSC-Kingwood and North Harris)

FIRST YEAR		Credit
ENGL	1301 Composition & Rhetoric I	3
SPCH	1315 Public Speaking <b>OR</b>	3
SPCH	1318 Interpersonal Communication	
PSYC	2301 General Psychology	3
KINE	1304 Personal Health	3
Elective <sup>1</sup>	Math/Natural Science	3-4
CSME	1420 Orientation to Facial Specialist	4
CSME	1248 Principles of Skin Care	2
CSME	1421 Principles of Facial and Skin Care Technology I	4
ITSC	1401 Introduction to Computers <b>OR</b>	4
COSC	1401 Introduction to Computers	

SECOND YEAR		Credit
CSME	1445 Principles of Facial and Skin Care Technology II	4
CSME	1447 Skin Care and Facial Theory Prin.	4
CSME	2431 Principles of Facials and Skin Care Technology III	4
GOVT	2301 American Government	3
BUSG	2309 Small Business Management/Entrepreneurship	3
HRPO	1311 Human Relations	3
ENGL	1302 Composition & Rhetoric II	3
MRKG	2333 Principles of Selling <b>OR</b>	3
Elective <sup>2</sup>	Business course	
KINE	Any physical activity course	1
Elective <sup>3</sup>	Humanities/Fine Arts	3

**TOTAL Credits for Cosmetology Facial AAS Degree** **60-61**

<sup>1</sup> See core requirements for AAS degree for options. Students must meet TSI requirements. See LoneStar.edu/TSI for details.

<sup>2</sup> Choose one course from MRKG, BUSG, or HRPO with departmental approval

<sup>3</sup> Must meet multicultural requirement  
Note: Capstone experience is completed by taking a departmental exam.

**COSMETOLOGY****Associate of Applied Science degree**

(AAS\_COSM degree offered at LSC-Kingwood and North Harris)

FIRST YEAR		Credit
ENGL	1301 Composition and Rhetoric I	3
KINE	Any physical activity course	1
SPCH <sup>1</sup>	Elective	3
Elective <sup>2</sup>	Math/Natural Science	3-4
PSYC	2301 General Psychology	3

CSME	1254 Artistry of Hair Design I	2
CSME	1310 Intro to Haircutting & Related Theory	3
CSME	1501 Orientation to Cosmetology	5
CSME	1505 Fundamentals of Cosmetology	5

SECOND YEAR		Credit
CSME	1553 Chemical Reformation & Related Theory	5
CSME	2310 Intermediate Haircutting & Related Theory	3
CSME	2337 Advanced Cosmetology Techniques	3
CSME	2501 Principles of Hair Coloring & Related Theory	5
CSME	2539 Advanced Hair Design	5
CSME	2541 Prep. for the State Licensing Exam	5
Elective <sup>3</sup>	Humanities/Fine Arts	3
ITSC	1401 Introduction to Computers	4

**TOTAL Credits for Cosmetology AAS Degree** **61-62**

<sup>1</sup> Choose from SPCH 1311, 1315, 1318, or 1321.

<sup>2</sup> See core requirements for AAS degree for options. Students must meet TSI requirements. See LoneStar.edu/TSI for details.

<sup>3</sup> Must meet the multicultural requirement.  
Note: Capstone experience is completed by taking a departmental exam.

**DENTAL HYGIENE**

The Lone Star College System (LSCS) offers an Associate of Applied Science in Dental Hygiene at LSC-Kingwood. This program is designed for those interested in becoming a registered dental hygienist. The dental hygiene curriculum offered at LSC-Kingwood is a structured intense program with didactic and clinical practice taking place in the health science building on the LSC-Kingwood campus. External rotations are integrated into the curriculum for experiences outside of the school setting. 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 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.

The dental hygiene program is a competitive entrance admissions program. Go to LoneStar.edu/dental-hygiene-requirements for information about admission requirements, selection criteria and application process for the program.

Students are required to successfully pass a background check. 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

(AAS\_DNHY degree offered at LSC-Kingwood)

Prerequisite		Credit
CHEM	1405 Introduction to Chemistry	4
ENGL	1301 Composition and Rhetoric I	3
BIOL	2401 Human Anatomy and Physiology I	4
SOCI <sup>1</sup>	1301 Principles of Sociology	3
FIRST YEAR		Credit
BIOL	2402 Human Anatomy and Physiology II	4
DHYG	1301 Orofacial Anatomy, Histology & Embryology	3
DHYG	1431 Preclinical Dental Hygiene Care	4
DHYG	1203 Preventive Dental Hygiene I	2
DHYG	1304 Dental Radiology	3
BIOL	2420 Medical Microbiology	4
BIOL	2305 Pathophysiology	3
DHYG	1260 Clinical - Dental Hygiene/Hygienist I	2
DHYG	1211 Periodontology	2
DHYG <sup>2,3</sup>	1207 General and Dental Nutrition	2
DHYG <sup>3</sup>	2201 Contemporary Dental Hygiene Care I	2
PSYC	2301 General Psychology	3
DHYG	1219 Dental Materials	2
DHYG	1160 Clinical - Dental Hygiene/Hygienist II	1
SECOND YEAR		Credit
SPCH	1318 Interpersonal Communication	3
DHYG	1235 Pharmacology for the Dental Hygienist	2
DHYG	2231 Contemporary Dental Hygiene Care II	2
DHYG <sup>3</sup>	2362 Clinical - Dental Hygiene/Hygienist III	3
DHYG	1239 General and Oral Pathology	2
PHIL	2306 Introduction to Ethics	3
DHYG	1215 Community Dentistry	2
DHYG	2153 Dental Hygiene Practice	1
DHYG <sup>3,4</sup>	2363 Clinical - Dental Hygiene/Hygienist IV	3
<b>TOTAL Credits for AAS Degree</b>		<b>72</b>

<sup>1</sup> Meets multicultural requirement<sup>2</sup> Meets wellness competency<sup>3</sup> Meets computer competency<sup>4</sup> Capstone course

Note: Students must meet TSI requirements. See LoneStar.edu/TSI for details.

## DIAGNOSTIC MEDICAL SONOGRAPHY

The Associate of Applied Science degree in Diagnostic Medical Sonography, the Associate of Applied Science degree in Echocardiography and the Advanced Technical certificate in Diagnostic Medical Sonography are designed to prepare graduates for employment in the healthcare industry in the sonography profession. The program is also designed to provide opportunities for job advancement and retention for currently employed radiologic technologists.

Students must complete all appropriate developmental coursework or retake the section of ASSET, ACCUPLACER, COMPASS, or THEA and score high enough to place into college-level courses. To determine your Student Success Initiative (SSI) status, see a college advisor. Students must complete ENGL 1301, MATH 1314, PHYS 1401 or 1410, BIOL 2401 and 2402 prior to the first DMSO/DSAE course in the AAS degree. RADR 1313 and RADR 2305 may be substituted for the PHYS course requirement. Interested students should visit the website, [cyfair.LoneStar.edu/sonography](http://cyfair.LoneStar.edu/sonography) for information regarding technical standards for the profession, applications, and admission criteria for the program.

Students who currently hold a two-year degree in a patient care health program are eligible for admission to the certificate program. Students who do not hold a two-year degree in a patient care health program would apply for the AAS in DMS or Echocardiography. Students who currently hold an AAS in Sonography/Echocardiography are eligible for admission to the Non-Invasive Vascular Technology Enhanced Skills certificate.

## Admission Criteria

Clinical space is limited, so students are admitted on a competitive basis. In addition to the general admission requirements of the LSCS, the following requirements must be met in order to apply for admission to the Diagnostic Medical Sonography AAS programs.

1. College entry-level ability in mathematics and English (reading/writing) as defined by LSCS. For further information, contact any of the student development offices.
2. Completion of Anatomy and Physiology I and II (BIOL 2401 & BIOL 2402) with a "C" or better within the previous five years and prior to submission of an application for the diagnostic medical sonography programs. Refresher anatomy & physiology courses are available through continuing education for students whose biology is older than five years and

who do not desire to repeat the courses for credit. The grades earned from the older credit biology courses will be used for grade point calculation where applicable.

- Complete the following courses with a "C" or better: ENGL 1301, MATH 1314 (or other approved MATH courses), PHYS 1401 or 1410
- A cumulative grade point average (GPA) of at least 2.0 in college.
- Students must register for and take the PSB Health Occupations Aptitude Test.
- Must complete Hepatitis B immunization series and all required immunizations prior to the first clinical course (this may take 3 to 6 months to complete). Applicants must provide written documentation of all immunizations or titers received and a satisfactory physical exam on a college-approved form found on the website. Students must complete the healthcare provider CPR training prior to attending clinicals.
- Prospective students are required to attend an information session and obtain an information session certificate.
- Final acceptance into the program is contingent upon a satisfactory background check (as required by clinical facilities) that is completed by a college approved agency at the student's expense. Clinical facilities may also require completion of satisfactory drug screening and verification of medical insurance.

### Readmission Guidelines

Applicants who have failed or withdrawn from any LSCS sonography program will be considered on an individual basis. Readmission is not automatic. It is based on remediation of an identified problem area and space availability. Students who wish to be readmitted must interview with the program's Readmission Committee and follow current readmission guidelines. At this interview, the student will be asked to describe what steps have been taken in the intervening months to improve the chance of success and an action plan for improvement of academic and/or clinical performance. In addition, students seeking readmission must submit three letters of their standing from the prior sonography program. One letter should be a "report of status" from the former program director. Readmission into the sonography program must occur within one year of non-completion. A student may be readmitted into the sonography one time only.

### Transfer Guidelines

An individual's request to transfer into any LSCS sonography program will be reviewed on an individual basis

by the program director. Class placement is based on previous achievement and space availability. Admission is considered only if prior program enrollment has been within one (1) year.

- Completion of official transfer application.
- Written statement from the student describing his/her reasons for originally leaving the program.
- Submit current official transcripts from any colleges or universities that the student has attended.
- Submit three letters of his/her standing from the prior sonography program. One letter should be a "report of status" from the former program director.

## DIAGNOSTIC MEDICAL SONOGRAPHY

### Associate of Applied Science degree

(AAS\_SONO degree offered at LSC-CyFair)

Prerequisite	Credit
BIOL 2401 Human Anatomy and Physiology I	4
MATH 1314 College Algebra	3
BIOL 2402 Human Anatomy and Physiology II	4
PHYS <sup>1</sup> 1401 General Physics I <b>OR</b>	4
PHYS <sup>1</sup> 1410 Elementary Physics	
ENGL 1301 Composition and Rhetoric I	3

FIRST YEAR	Credit
DMSO <sup>2</sup> 1210 Introduction to Sonography	2
DMSO <sup>2</sup> 1360 Clinical	3
DMSO 1405 Sonography of Abdominopelvic Cavity	4
DMSO 1302 Basic Ultrasound Physics	3
DMSO 1351 Sonographic Sectional Anatomy	3
DMSO 1366 Practicum I	3
DMSO 2253 Sonography of Superficial Structures	2
SOCI <sup>3</sup> 1301 Introduction to Sociology	3
DMSO 2405 Sonography of Obstetrics/Gynecology	4
DMSO 1342 Intermediate Ultrasound Physics	3
DMSO 2342 Sonography of High Risk Obstetrics (12 weeks)	3
DMSO 2351 Doppler Physics (12 weeks)	3
DMSO 1367 Practicum II (13 weeks)	3
ITSC 1401 Introduction to Computers <b>OR</b>	4
COSC 1401 Introduction to Computers	

SECOND YEAR	Credit
DMSO 2245 Advanced Sonography Practices	2
DMSO 2130 Advanced Ultrasound Review	1
Elective Humanities/Fine Arts	3
DMSO <sup>4</sup> 2366 Practicum III	3
DSVT 2200 Vascular Technology Applications	2

**TOTAL Credits for Diagnostic Medical Sonography AAS Degree**

**72**

**DEGREES AND CERTIFICATES**

- <sup>1</sup> RADR 1313 AND RADR 2305 may be substituted for the PHYS course requirement.
- <sup>2</sup> Meets communication competency; DMSO 1210 meets wellness competency
- <sup>3</sup> Meets multicultural course requirement
- <sup>4</sup> 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 1401 OR 1410, ENGL 1301, MATH 1314, BIOL 2401 and 2402 prior to the first DMSO course.

**ECHOCARDIOGRAPHY**

**Associate of Applied Science degree**  
(AAS\_ECHO degree offered at LSC-CyFair)

Prerequisite	Credit
BIOL 2401 Human Anatomy and Physiology I	4
BIOL 2402 Human Anatomy and Physiology II	4
ENGL 1301 Composition and Rhetoric I	3
MATH 1314 College Algebra	3
PHYS <sup>1</sup> 1401 General Physics I <b>OR</b>	4
PHYS <sup>1</sup> 1410 Elementary Physics	4

FIRST YEAR	Credit
ITSC 1401 Introduction to Computers <b>OR</b>	4
COSC 1401 Introduction to Computers	4
DMSO <sup>2</sup> 1210 Introduction to Sonography	2
DMSO 1302 Basic Ultrasound Physics	3
DSAE 1415 Principles-Adult Echocardiography	4
DSAE <sup>2</sup> 1360 Clinical	3
DSAE 2403 Cardiovascular Concepts	4
DMSO 1342 Intermediate Ultrasound Physics	3
DSAE 2404 Echocardiographic Evaluation of Pathology I	4
DSAE <sup>2</sup> 1364 Practicum I	3
DSAE 2437 Echocardiographic Evaluation of Pathology II	4
DMSO 2351 Doppler Physics	3
SOCI <sup>3</sup> 1301 Introduction to Sociology	3
DSAE <sup>2</sup> 2364 Practicum II	3

SECOND YEAR	Credit
DSAE 2235 Advanced Echocardiography	2
DSVT 2200 Vascular Technology Applications	2
DMSO <sup>4</sup> 2130 Advanced Ultrasound Review	1
Elective Humanities/Fine Arts	3
DSAE <sup>2</sup> 2365 Practicum III	3

**TOTAL Credits for Echocardiography AAS Degree** **72**

- <sup>1</sup> RADR 1313 AND RADR 2305 may be substituted for the PHYS course requirement.
- <sup>2</sup> Meets communication competency; DMSO 1210 meets wellness competency
- <sup>3</sup> Meets multicultural course requirement
- <sup>4</sup> Capstone course

Note: Students must pass the THEA test and place into college level reading, writing and math prior to entering program. Students must complete PHYS 1401 OR 1410, ENGL 1301, MATH 1314, BIOL 2401 and 2402 prior to the first DSAE course.

**SONOGRAPHY NON-INVASIVE VASCULAR TECHNOLOGY ENHANCED SKILLS CERTIFICATE**

(C3\_NIV3 certificate offered at LSC-CyFair)

FIRST YEAR	Credit
DSVT 2330 Non-Invasive Cerebral Vascular Evaluation	3
DSVT 2418 Non-Invasive Peripheral Vascular Evaluation	4
DSVT 1364 Practicum I	3
DSVT <sup>1</sup> 1265 Practicum II	2
DSVT 2335 Advanced Non-Invasive Vascular Technology	3

**TOTAL Credits for Sonography Enhanced Skills Certificate** **15**

- <sup>1</sup> Capstone course

**SONOGRAPHY ADVANCED TECHNICAL CERTIFICATE**

(C4\_SON4 certificate offered at LSC-CyFair)

FIRST YEAR	Credit
DMSO 1210 Introduction to Sonography	2
DMSO 1351 Sonographic Sectional Anatomy	3
DMSO 1405 Sonography of Abdominopelvic Cavity	4
DMSO 1302 Basic Ultrasound Physics	3
DMSO 1360 Clinical	3
DMSO 1366 Practicum I	3
DMSO 1342 Intermediate Ultrasound Physics	3
DMSO 2405 Sonography of Obstetrics/Gynecology	4
DMSO 2253 Sonography of Superficial Structures	2
DMSO 1367 Practicum II (13 weeks)	3
DMSO 2342 Sonography of High Risk Obstetrics (12 weeks)	3
DMSO 2351 Doppler Physics (12 weeks)	3

SECOND YEAR	Credit
DSVT 2200 Vascular Technology Applications	2
DMSO <sup>1</sup> 2366 Practicum III	3
DMSO 2130 Advanced Ultrasound Review	1
DMSO 2245 Advanced Sonography Practices	2

**TOTAL Credits for Sonography Advanced Technical Certificate** **44**

- <sup>1</sup> 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 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.

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, fixing and upgrading 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 electrical interfaces.

At LSC-Tomball, specialized electrician courses are offered that emphasize application more than theoretical development. The courses complement 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 ensure that the class focus meets their needs and on 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 advisor for specific information or to obtain the recommended sequencing of courses.

### SOLAR PHOTOVOLTAIC SYSTEM ELECTRICIAN MARKETABLE SKILLS AWARD

(MSC\_SPSE award offered at LSC-Tomball)

FIRST YEAR		Credit
ELPT	1325 National Electrical Code I	3
DFTG	2307 Electrical Drafting	3
ELPT	1429 Residential Wiring <b>OR</b>	4
ELPT	1445 Commercial Wiring	
ELMT	1302 Solar Photovoltaic Systems	3
<b>TOTAL Credits for Solar Photovoltaic System Electrician Marketable Skills Award</b>		<b>13</b>

### FUEL CELL SYSTEMS ELECTRICIAN MARKETABLE SKILLS AWARD

(MSC\_FCSE award offered at LSC-Tomball)

FIRST YEAR		Credit
ELPT	1325 National Electrical Code I	3
FCEL	1302 Introduction to Fuel Cell Technology	3
FCEL	2330 Fuel Cell Installation, Start-Up, and Maintenance	3
ELPT	1429 Residential Wiring <b>OR</b>	4
ELPT	1445 Commercial Wiring	
<b>TOTAL Credits for Fuel Cell Systems Electrician Marketable Skills Award</b>		<b>13</b>

### WIND TURBINE SYSTEM ELECTRICIAN MARKETABLE SKILLS AWARD

(MSC\_WTSE award offered at LSC-Tomball)

FIRST YEAR		Credit
ELPT	1325 National Electrical Code I	3
WIND	1300 Introduction to Wind Energy	3
WIND	2359 Wind Power Delivery System	3
ELPT	1429 Residential Wiring <b>OR</b>	4
ELPT	1445 Commercial Wiring	
<b>TOTAL Credits for Wind Turbine System Electrician Marketable Skills Award</b>		<b>13</b>

### RESIDENTIAL/COMMERCIAL ELECTRICIAN CERTIFICATE

(C1\_REC1 certificate offered at LSC-Tomball)

FIRST YEAR		Credit
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
ELPT	2325 National Electrical Code II	3
DFTG	2307 Electrical Drafting	3
ELPT <sup>1</sup>	1429 Residential Wiring	4
ELPT	1445 Commercial Wiring	4
<b>TOTAL Credits for Residential/Commercial Electrician Certificate</b>		<b>26</b>

<sup>1</sup> Capstone course

## EMERGENCY MEDICAL SERVICES PROFESSIONS

The Emergency Medical Services Professions Associate of Applied Science degree includes knowledge, skills and behaviors 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 National Registry exams. Advanced placement is available for EMT's, EMT-I's and paramedics who are currently certified in the State of Texas 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.

### Selection Criteria for all Programs

There are different admission deadlines for the EMS programs at each campus. Please contact the program director for campus specific admission deadlines. 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.

### Programs Offered

EMT is offered at LSC-CyFair, LSC-Montgomery, LSC-North Harris and LSC-Kingwood. The EMSP Intermediate Certificate is offered at LSC-CyFair, LSC-Montgomery, and LSC-North Harris. The EMSP Paramedic Certificate is offered at LSC-CyFair over three semesters and at LSC-North Harris over five semesters. The EMSP AAS degree is offered at LSC-CyFair and LSC-North Harris.

### General Admission Criteria

1. Students must meet the basic requirements for admission to the Lone Star College System (LSCS) and apply to LSCS.
2. Admission to LSCS does not constitute automatic acceptance into the EMSP program.
3. Admission to the EMSP program does not guarantee eligibility for the National Registry of Emergency Medical Technicians or certification by Texas Department of State Health Services.

- Criminal background checks are part of the screening process conducted by the Texas Department of State Health Services. As a result, some candidates may be ineligible for certification.
  - Candidates with concerns about their background check should contact the Texas Department of State Health Services in Austin with their specific concerns. LSCS personnel are unable to make any determinations as to a potential candidate's eligibility for certification.
4. Clinical facilities require students to successfully pass a background check, possibly a drug screen, and additional immunizations not required by the Texas Department of State Health Services.
    - Additional immunizations may be required to satisfy clinical agency requirements. Some of these may include, but are not limited to:
      - a. the annual seasonal flu vaccination
      - b. pneumococcal ("pneumonia") vaccine
      - c. the H1N1 influenza vaccine
    - Applicants may also show proof of medical insurance as required by clinical agencies. Student medical insurance is available through LSCS.
    - Background checks are done through LSCS approved background check vendors.
    - Applicants must cover the costs of the background check, drug screen, medical insurance and immunizations.
    - Additional program costs to be assumed by the student include uniforms, malpractice insurance, and skills examination fees.
  5. If at any time during enrollment in any LSCS emergency medical services program a student is convicted of a felony or misdemeanor, the student must inform the director and clinical coordinator in writing and submit a current background check.

### EMT (EMSP 1501/1160) Admission Requirements

1. Apply for and be admitted to LSCS.
2. Completion of the following prerequisites is required for admission into the program. ENGL 0304 or ENGL 0364 AND ENGL 0306 or 0374, OR higher level course (ENGL 1301) OR placement by testing. Completion of MATH 0306 OR placement by testing.

3. Present proof of successful completion of the American Heart Association's Basic Life Support for Health Care Providers within the previous two years, or an equivalent course approved by the program director.
  4. Document immunization or laboratory report of immune serum antibody titer against tetanus, diphtheria, pertussis, mumps, measles, rubella, varicella and Hepatitis B.
  5. Completed Physical Examination/Medical History form.
  6. Document negative results from a yearly tuberculosis test (Mantoux). If the test is positive a chest x-ray is required and performed within the time limit established by the facility. Submit the radiology report with the immunization form. Gold Test results will be accepted.
  7. Enrollment into the EMT clinical course is contingent upon a satisfactory background check (as required by clinical facilities) that is completed by a college approved agency at the student's expense. Clinical facilities may also require completion of satisfactory drug screening, personal medical insurance, and additional immunizations.
- c. A resume or curriculum vitae showing work history with emphasis on EMS or other health care experience.
  - d. Documentation of EMT certification. Students who currently are enrolled in an EMT course or who have completed EMT course work and are engaged in the credentialing process should provide a statement to this effect.
  - e. Document immunization or laboratory report of immune serum antibody titer against tetanus, diphtheria, pertussis, mumps, measles, rubella, varicella and Hepatitis B.
  - f. Document negative results from a tuberculosis test (Mantoux). If the test is positive a chest x-ray should be performed within the time limit established by the facility. Submit the radiology report with the immunization form. If a positive test was obtained, a screening questionnaire should be completed prior to the second year of the program. Gold Test results will be accepted.
  - g. Proof of successful completion of the American Heart Association's Basic Life Support for Health Care Providers within the previous two years, or an equivalent course approved by the program director.
  - h. Completed Physical Examination/Medical History form.

#### **EMSP Intermediate Certificate, EMSP Paramedic Certificate, and AAS Requirements**

1. Apply for and be admitted to LSCS.
2. Students must make formal application to the EMSP department to pursue course work beyond EMSP 1501/1160.
3. Applicants who are currently certified at the EMT or EMT-Intermediate level or have completed EMSP 1501 (EMT) and EMSP 1160 (EMT Clinical) but who do not hold EMT certification may be provisionally accepted.
4. Students are only accepted for advance coursework in the fall at LSC-CyFair, LSC-Montgomery, and LSC-North Harris. Transfer students should contact the program director for start dates. LSC-CyFair has an accelerated one year program that begins in the fall.
5. An application portfolio must be submitted according to the deadlines established by the EMSP department of each college program. The following should be included in the portfolio.
  - a. Documentation of high school diploma or GED.
  - b. Copies of all relevant academic transcripts: high school, college or university, military service schools, and other (proprietary schools).
6. Final acceptance into the program is contingent upon a satisfactory background check (as required by clinical facilities) that is completed by a college approved agency at the student's expense. Clinical facilities may also require completion of satisfactory drug screening, personal medical insurance, and additional immunizations.
7. Completion of the following prerequisites is required for admission into the program. ENGL 0304 or ENGL 0364 AND ENGL 0306 or 0374, OR higher level course (ENGL 1301) OR placement by testing. Completion of MATH 0306 OR placement by testing.
8. Letters regarding admission status will be mailed out at the conclusion of the application process.

**DEGREES AND CERTIFICATES**

**EMERGENCY MEDICAL SERVICES  
PROFESSIONS INTERMEDIATE  
CERTIFICATE**

(C1\_EMI1 certificate offered at LSC-CyFair,  
Montgomery and North Harris)

LSC-CyFair offers this certificate in an accelerated schedule. Contact the faculty for more information.

Prerequisite	Credit
EMSP 1160 Clinical - EMT	1
EMSP 1501 Emergency Medical Technician	5

FIRST YEAR	Credit
EMSP 1161 Clinical - Paramedic I	1
EMSP 1338 Introduction to Advanced Practice	3
EMSP 1356 Pt. Assessment & Airway Mgmt	3
EMSP 2348 Emergency Pharmacology	3
EMSP 1162 Clinical - Paramedic II	1
EMSP 1355 Trauma Management	3
EMSP 2338 EMS Operation	3

**TOTAL Credits for Emergency Medical  
Services Professions Intermediate Certificate 23**

Note: It is recommended that students complete BIOL 2401 prior to beginning paramedic coursework. Students will be prepared to take The National Registry Exam after completion of certificate. Contact the faculty for more information.

**EMERGENCY MEDICAL SERVICES  
PROFESSIONS PARAMEDIC  
CERTIFICATE**

(C1\_EMP1 certificate offered at LSC-CyFair  
and North Harris)

LSC-CyFair offers this certificate in an accelerated schedule. Contact the faculty for more information.

Prerequisite	Credit
EMSP 1160 Clinical - EMT	1
EMSP 1501 Emergency Medical Technician	5

FIRST YEAR	Credit
EMSP 1161 Clinical - Paramedic I	1
EMSP 1338 Introduction to Advanced Practice	3
EMSP 1356 Pt. Assessment & Airway Mgmt	3
EMSP 2348 Emergency Pharmacology	3
EMSP 1162 Clinical - Paramedic II	1
EMSP 1355 Trauma Management	3
EMSP 2338 EMS Operation	3
EMSP 2444 Cardiology	4

SECOND YEAR	Credit
EMSP 2160 Clinical - Paramedic III	1
EMSP 2330 Special Populations	3
EMSP 2434 Medical Emergencies	4
EMSP <sup>1</sup> 2143 Assessment Based Management	1
EMSP 2361 Clinical - EMS	3

**TOTAL Credits for Emergency Medical  
Services Professions Paramedic Certificate 39**

<sup>1</sup> Capstone experience course  
Note: It is recommended that students complete BIOL 2401 prior to beginning paramedic coursework.

**EMERGENCY MEDICAL SERVICES  
PROFESSIONS**

**Associate of Applied Science degree**

(AAS\_EMST degree offered at  
LSC-CyFair and North Harris)

LSC-CyFair offers the Associate of Applied Science degree in an accelerated schedule. Contact the faculty for more information.

Prerequisite	Credit
EMSP 1160 Clinical - EMT	1
EMSP 1501 Emergency Medical Technician	5

FIRST YEAR	Credit
BIOL 2401 Human Anatomy & Physiology I	4
EMSP <sup>1</sup> 1161 Clinical - Paramedic I	1
EMSP <sup>1,2</sup> 1338 Intro of Advanced Practice	3
EMSP <sup>2</sup> 1356 Pt. Assessment & Airway Mgmt	3
EMSP 2348 Emergency Pharmacology	3
KINE Any physical activity course	1
BIOL 2402 Human Anat. & Physiology II	4
EMSP <sup>1</sup> 1162 Clinical - Paramedic II	1
EMSP 1355 Trauma Management	3
EMSP 2338 EMS Operations	3
ENGL 1301 Composition and Rhetoric I	3
KINE Any physical activity course	1
EMSP <sup>2</sup> 2444 Cardiology	4
EMSP <sup>3</sup> Elective	3
Elective <sup>4</sup> Humanities/Fine Arts	3

SECOND YEAR	Credit
EMSP <sup>1</sup> 2160 Clinical - Paramedic III	1
EMSP <sup>1</sup> 2330 Special Populations	3
EMSP 2434 Medical Emergencies	4
PSYC 2301 General Psychology	3
EMSP <sup>1,5</sup> 2143 Assessment Based Management	1
EMSP <sup>1</sup> 2361 Clinical - EMS	3
GOVT 2301 American Government	3
SOCI <sup>6</sup> 1301 Principles of Sociology	3

**TOTAL Credits for AAS Degree 67**

<sup>1</sup> Meets communication competency  
<sup>2</sup> Meets computer competency  
<sup>3</sup> Choose from EMSP 2300, 2352 or 2359

**DEGREES AND  
CERTIFICATES**

- <sup>4</sup> See the catalog for appropriate choices and requirements for the Associate of Applied Science degree
- <sup>5</sup> Capstone course
- <sup>6</sup> Meets multicultural requirements  
Note: Students must meet TSI requirements. See LoneStar.edu/TSI for details. 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 62-69 semester credit hours required in degree plans. Students may specialize in architectural engineering technology, mechanical engineering technology 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 30 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.

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.

## COMPUTER-AIDED DESIGN OPERATOR/DRAFTING CERTIFICATE

(C1, EDD1 certificate offered at  
LSC-CyFair and North Harris)

FIRST YEAR	Credit
DFTG 1305 Technical Drafting	3
DFTG 1309 Basic Computer-Aided Drafting	3
Elective <sup>1</sup> Discipline Track	3
TECM 1303 Technical Calculations <b>OR</b>	3
MATH <sup>2</sup> 1314 College Algebra	
Elective <sup>1</sup> Discipline Track	3
Elective <sup>1</sup> Discipline Track	3
DFTG 2319 Intern. Computer-Aided Drafting	3
DFTG 2340 Solid Modeling/Design	3
Elective <sup>1</sup> Discipline Track	3
Elective <sup>1</sup> Discipline Track	3

**TOTAL Credits for Computer-Aided  
Design Operator/Drafting Certificate** **30**

- <sup>1</sup> Students must select one of the two tracks below and may not deviate from them as they progress through the certificate.

#### Discipline Track Courses

**Track 1: Architectural, Civil/Structural** - CNBT 1311, DFTG 2331, DFTG 1317, ARCE 1352, DFTG 2328

**Track 2: Mechanical, Manufacturing, Product Design** - MCHN 1319, DFTG 2302, DFTG 2323, METL 1301, INMT 1311, DFTG 2335 OR CETT 1409

- <sup>2</sup> Students planning to complete the AAS degree in architectural engineering technology, pre-engineered metal building drafting and design, or mechanical engineering should take MATH 1314-College Algebra.

Note: A capstone certification exam is required of all certificate students completing the certificate program. The certificate will not be awarded without completion and passing with a minimum grade of 75 percent. Courses should be taken sequentially, in the order shown, considering individual published course prerequisites.



## ARCHITECTURAL ENGINEERING TECHNOLOGY SPECIALIZATION

### Associate of Applied Science degree

(AAS\_EDAE specialization offered at  
LSC-CyFair and North Harris)

FIRST YEAR		Credit
ENGL	1301 Composition and Rhetoric I	3
DFTG	1305 Technical Drafting	3
MATH	1314 College Algebra	3
CNBT	1311 Construction Methods & Materials I	3
DFTG <sup>1</sup>	1309 Basic Computer-Aided Drafting	3
ARCE	1352 Structural Drafting	3
MATH	1316 Trigonometry	3
CNBT	1342 Building Codes & Inspection	3
DFTG	2331 Adv Technologies Architectural Design and Drafting	3
DFTG <sup>1</sup>	2319 Intermediate Computer-Aided Drafting	3
DFTG	2328 Architectural Drafting-Commercial	3
ENGL	2311 Technical Communications <b>OR</b>	3
ENGL	1302 Composition and Rhetoric II	
KINE	Any physical activity course	1

SECOND YEAR		Credit
ARTS <sup>2</sup>	1304 Art History Survey II	3
ENTC	1343 Statics	3
DFTG	1371 Metal Building Systems I	3
PHYS	1401 General Physics I	4
DFTG	1317 Architectural Drafting - Residential	3
ARCE	1315 Structural Steel Detailing	3
Elective <sup>3</sup>	Social/Behavioral Science	3
SPCH <sup>4</sup>	Speech Elective	3
ENTC	1423 Strength of Materials	4
ENTC <sup>5</sup>	2380 Cooperative Education <b>OR</b>	3
DFTG <sup>5</sup>	2338 Final Project - Advanced Drafting	

**TOTAL Credits for Architectural  
Engineering Technology Specialization** **69**

<sup>1</sup> Meets computer competency

<sup>2</sup> Meets multicultural requirement.

<sup>3</sup> See college catalog for Associate of Applied Science degree graduation requirements for a listing of electives.

<sup>4</sup> Choose elective from SPCH 1311, 1315, or 1321

<sup>5</sup> Capstone course

## MECHANICAL ENGINEERING TECHNOLOGY SPECIALIZATION

### Associate of Applied Science degree

(AAS\_EDME specialization offered at  
LSC-CyFair and North Harris)

FIRST YEAR		Credit
MATH	1314 College Algebra	3
ENGL	1301 Composition and Rhetoric I	3
DFTG	1305 Technical Drafting	3
MCHN	1319 Manufacturing Mat. & Processes	3
DFTG <sup>1</sup>	1309 Basic Computer-Aided Drafting	3
DFTG	2340 Solid Modeling/Design	3
METL	1301 Introduction to Metallurgy	3
MATH	1316 Trigonometry	3
DFTG	2302 Machine Drafting	3
DFTG <sup>1</sup>	2319 Intermediate Computer-Aided Drafting	3
CETT	1409 DC-AC Circuits	4
ENGL	2311 Technical Communications <b>OR</b>	3
ENGL	1302 Composition and Rhetoric II	
Elective <sup>2</sup>	Humanities/Fine Arts	3
KINE	Any physical activity course	1

SECOND YEAR		Credit
ENTC	1343 Statics	3
PHYS	1401 General Physics I	4
DFTG	2335 Advanced Technologies in Mechanical Design & Drafting	3
IEIR <sup>3</sup>	1310 Motor Controls <b>OR</b>	3
QCTC <sup>4</sup>	1303 Quality Control	
ENTC	1423 Strength of Materials	4
Elective <sup>2</sup>	Social/Behavioral Science	3
DFTG <sup>3</sup>	2336 CAD Programming <b>OR</b>	3
INMT <sup>4</sup>	1311 Computer Integrated Manufacturing <b>OR</b>	
DFTG <sup>5</sup>	2323 Pipe Drafting	
ENTC <sup>6</sup>	2380 Cooperative Education <b>OR</b>	3
DFTG <sup>6</sup>	2338 Final Project - Advanced Drafting	
SPCH <sup>7</sup>	Elective	3

**TOTAL Credits for Mechanical  
Engineering Technology Specialization** **70**

<sup>1</sup> Meets computer competency

<sup>2</sup> 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.

<sup>3</sup> 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.

<sup>4</sup> QCTC 1303 and INMT 1311 are intended for students wanting to focus their employment within a production and manufacturing environment.

<sup>5</sup> DFTG 2323 is intended for students wanting to focus on being mechanical designers in oil field and process related industries.

<sup>6</sup> Capstone course

<sup>7</sup> Choose from SPCH 1311, SPCH 1315 or SPCH 1321

## PRE-ENGINEERED METAL BUILDING DRAFTING & DESIGN SPECIALIZATION

### Associate of Applied Science degree

(AAS\_EDMB specialization offered at LSC-CyFair and North Harris)

FIRST YEAR	Credit
ENGL 1301 Composition & Rhetoric I	3
CNBT 1311 Construction Methods & Materials I	3
DFTG 1305 Technical Drafting	3
MATH 1314 College Algebra	3
SPCH 1318 Interpersonal Communication	3
DFTG <sup>1</sup> 1309 Basic CAD	3
MATH 1316 Trigonometry	3
ARCE 1352 Structural Drafting	3
DFTG 2331 Adv Technologies Architectural Design and Drafting	3
DFTG 2319 Intern. Computer-Aided Drafting	3
ENGL 2311 Technical Communications <b>OR</b>	3
ENGL 1302 Composition & Rhetoric II	

SECOND YEAR	Credit
ARCE 1315 Structural Steel Detailing	3
DFTG 2328 Architectural Drafting - Commercial	3
ENTC 1343 Statics	3
DFTG 1371 Metal Building Systems I	3
Elective <sup>2</sup> Humanities/Fine Arts	3
DFTG 2371 Metal Building Systems II	3
ENTC 1423 Strength of Materials	4
Elective <sup>2</sup> Social/Behavioral Science	3
ENTC <sup>3</sup> 2380 Cooperative Education <b>OR</b>	3
DFTG <sup>3</sup> 2338 Final Project - Advanced Drafting	
KINE Any Activity Course	1

**TOTAL Credits for Pre-Engineered Metal Building Drafting & Design Specialization 62**

- <sup>1</sup> Meets computer competency  
<sup>2</sup> 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  
<sup>3</sup> Capstone course

## ELECTRONICS TECHNOLOGY

If you are interested in an exciting and rewarding career where people and technology come together, electronics technology may be for you. Specialized courses in electronics 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.

Electronics 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
- 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 advisor for specific information.

## BASIC ELECTRONICS CERTIFICATE

(C1\_ELTE certificate offered at LSC-CyFair)

FIRST YEAR	Credit
ITSC 1401 Introduction to Computers <b>OR</b>	4
COSC 1401 Introduction to Computers	
CETT 1403 DC Circuits	4
MATH 1314 College Algebra	3
CETT 1405 AC Circuits	4
CETT <sup>1</sup> 1425 Digital Fundamentals	4
CETT 1429 Solid State Devices <b>OR</b>	3-4
Elective <sup>2</sup> Technical	

**TOTAL Credits for Basic Electronics Certificate 22-23**

- <sup>1</sup> Capstone course  
<sup>2</sup> Approved electives include any CETT, CPMT, EECT, or ITCC course.

## DEGREES AND CERTIFICATES

### COMPUTER ENGINEERING TECHNOLOGY SPECIALIZATION

**Associate of Applied Science degree**  
(AAS\_CETS specialization offered at LSC-CyFair)

Prerequisite		Credit
ITSC 1401	Introduction to Computers <b>OR</b>	4
COSC 1401	Introduction to Computers <b>OR</b>	
CPMT 1403	Introduction to Computer Technology	

FIRST YEAR		Credit
CETT 1403	DC Circuits	4
Elective <sup>1</sup>	Humanities/Fine Arts	3
Elective <sup>1</sup>	Social/Behavioral Sciences	3
ITSE 1402	Computer Programming	4
MATH 1314	College Algebra	3
CETT 1405	AC Circuits	4
SPCH 1318	Interpersonal Communications	3
CETT 1425	Digital Fundamentals	4
Elective <sup>2</sup>	Technical	4
ENGL 1301	Composition & Rhetoric I	3

SECOND YEAR		Credit
CETT 1429	Solid State Devices	4
CETT 1445	Microprocessor	4
CPMT 1445	Computer Systems Maintenance	4
MATH 1316	Trigonometry	3
ITSY 1442	Information Technology Security	4
CPMT 2433	Computer Integration	4
Elective <sup>3</sup>	Technical (Capstone Course)	3-4
KINE	Any physical activity course	1

**TOTAL Credits for Computer  
Engineering Technology Specialization 66-67**

- <sup>1</sup> To meet multicultural requirement, choose either SOCI 1301 or any foreign language
- <sup>2</sup> Choose technical elective from CPMT 1449, EECT 2439, ELMT 2433, or departmental approval
- <sup>3</sup> Capstone course. Choose from CETT 2449, EECT 2380 or ELMT 2433

### FIRE SCIENCE TECHNOLOGY

The Basic Structural Firefighter certificate is for students wanting to pursue entry level opportunities as fire fighters. Interested students should contact fire science technology faculty for information regarding application and admission to the program. The Associate of Applied Science degree in Fire Science Technology is designed to enhance firefighters' knowledge base and help students obtain advancement opportunities in the fire service field.

### BASIC STRUCTURAL FIREFIGHTER CERTIFICATE

(C1\_BFF1 certificate offered at LSC-CyFair,  
Kingwood and Montgomery)

FIRST YEAR		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
FIRT/FIRS	Elective	3
FIRT 2171	Firefighter Agility & Fitness Prep II	1
FIRS 1423	Fire Certification V	4
FIRS 1329	Fire Certification VI	3
FIRS <sup>1</sup> 1433	Fire Certification VII	4

**TOTAL Credits for Basic Structural  
Fire Fighter Certificate 29**

<sup>1</sup> Capstone course

### FIRE SCIENCE TECHNOLOGY

**Associate of Applied Science degree**  
(AAS\_FSCT degree offered at  
LSC-CyFair and Montgomery)

FIRST YEAR		Credit
FIRS 1301	Firefighter Certification I	3
FIRS 1407	Firefighter Certification II	4
FIRS 1313	Basic Firefighter Certification III	3
FIRS 1319	Firefighter Certification IV	3
FIRT <sup>1</sup> 1171	Firefighter Agility & Fitness Prep	1
FIRS 1423	Fire Certification V	4
FIRS 1329	Fire Certification VI	3
FIRS 1433	Fire Certification VII	4
FIRT 2171	Firefighter Agility & Fitness II	1
FIRT/FIRS <sup>2</sup>	Elective	3
FIRT <sup>3</sup>	Elective <b>OR</b>	3-5
EMSP <sup>3</sup> 1501	Emergency Medical Technician	
FIRT <sup>3</sup>	Elective <b>OR</b>	1-3
EMSP <sup>3</sup> 1160	Clinical-Based EMT	
SPCH	Elective	3
Elective <sup>4</sup>	Core Elective	3

SECOND YEAR		Credit
FIRT 1315	Hazardous Materials I	3
FIRT 1319	Firefighter Health and Safety	3
ENGL 1301	Composition and Rhetoric I	3
MATH 1314	College Algebra	3
COSC 1401	Introduction to Computers	4
Elective <sup>5</sup>	Humanities/Fine Arts	3
Elective <sup>5</sup>	Social/Behavioral Science	3
FIRT 1327	Building Construction in the Fire Service	3
FIRT	Elective	3
FIRT <sup>6</sup> 2380	Cooperative Education	3

**TOTAL Credits for Fire Science  
AAS Degree 72**

- <sup>1</sup> Course meets wellness competency  
<sup>2</sup> Select from FIRT 1303, 1305, 1307, 1338, 1342, 1343, 1345, 2305, 2307, 2309, 2333, 2345 or FIRS 2344  
<sup>3</sup> EMSP 1501 & 1160 must be taken as corequisites for a total of 6 credits or 6 hours of FIRT electives may be taken.  
<sup>4</sup> Course must be selected from the AAS core requirements.  
<sup>5</sup> One course must meet multicultural requirement.  
<sup>6</sup> Capstone course

## GAME DESIGN AND SIMULATION

The game design and simulation program will allow students to take their passion for playing games and shape it into the development of games. Upon completion, students will have experienced all aspects of the game design process from concept to completion. They will have studied the function of games and game play, developed interactive projects that address the technical challenges of a game's production. Students will gain valuable experience working on an original game idea through every phase of development, with a completed and playable game at the end of the program to show for it.

The degree and certificate programs are based on two areas of specialization: artist/designer and programmer/developer. Game artists and designers will learn what it takes to create the "who, what, where, and why" behind the stories, characters, artwork, and gameplay needed for great game design. Utilizing industry standard software, artists and designers will also create the assets, characters, and environments called for in their original game idea.

Game programmers and developers will learn what it takes to make the game world and gameplay work properly. They determine the "how," aligning the technical side of gaming with the designer's vision. This includes programming characters, actions and triggered events to how the artificial intelligence runs in the game. Students pursuing game development will graduate with a solid background in programming using C++ and the knowledge of manipulating game engines and level editors.

## GAME DESIGN AND SIMULATION DESIGNER (ARTIST) CERTIFICATE

(C2\_GDA2 certificate offered at LSC-Kingwood and Tomball)

FIRST YEAR		Credit
ENGL	1301 Composition and Rhetoric I	3
GAME	1303 Introduction to Game Design and Development	3
ARTV	1303 Basic Animation	3
ARTC	1302 Digital Imaging I	3
ARTS	1316 Drawing I	3
GAME	1335 Interactive Writing I	3
ARTV	1345 3-D Modeling & Rendering	3
IMED	1345 Interactive Digital Media I	3

SECOND YEAR		Credit
ARTV	1341 3-D Animation I	3
GAME	1304 Level Design	3
IMED	2345 Interactive Digital Media II	3
ITSC	1401 Introduction to Computer <b>OR</b>	4
COSC	1401 Introduction to Computers	
GAME	2332 Project Development I <b>OR</b>	3
GAME	2386 Internship	
GAME	2338 Game Testing	3

**TOTAL Credits for Game Design & Simulation Designer (Artist) Certificate** **43**

- <sup>1</sup> Capstone course  
 Note: Students must meet TSI requirements. See LoneStar.edu/TSI for details.

## GAME DESIGN AND SIMULATION DEVELOPER (PROGRAMMING) CERTIFICATE

(C2\_GDP2 certificate offered at LSC-Kingwood and Tomball)

FIRST YEAR		Credit
ITSC	1401 Introduction to Computer <b>OR</b>	4
COSC	1401 Introduction to Computers	
GAME	1303 Introduction to Game Design and Development	3
ARTV	1303 Basic Animation	3
ENGL	1301 Composition and Rhetoric I	3
ARTS	1316 Drawing I	3
GAME	1335 Interactive Writing I	3
ITSE	1402 Computer Programming <b>OR</b>	3-4
COSC	1309 Logic Design	
MATH	1314 College Algebra	3

**DEGREES AND CERTIFICATES**

SECOND YEAR		Credit
ITSE 1407	Introduction to C++ <b>OR</b>	4
COSC 1420	"C" Language	
GAME 1304	Level Design	3
SOCI 1301	Principles of Sociology <b>OR</b>	3
SPCH 1318	Interpersonal Communications	
KINE	Any physical activity course	1
GAME <sup>1</sup> 2332	Project Development I <b>OR</b>	3
GAME <sup>1</sup> 2386	Internship	
GAME 2338	Game Testing	3
<b>TOTAL Credits for Game Design &amp; Simulation Developer (Programming) Certificate</b>		<b>42-43</b>

<sup>1</sup> Capstone course

**GAME DESIGN AND SIMULATION DESIGNER (ARTIST) SPECIALIZATION**

**Associate of Applied Science degree**

(AAS\_GDSA degree offered at LSC-Kingwood)

FIRST YEAR		Credit
ITSC 1401	Introduction to Computer <b>OR</b>	4
COSC 1401	Introduction to Computers	
GAME 1303	Introduction to Game Design and Development	3
ARTC 1302	Digital Imaging I	3
ARTV 1345	3-D Modeling & Rendering	3
ARTS 1316	Drawing I	3
GAME 1304	Level Design	3
ARTC 1317	Design Communications I	3
ARTV 1303	Basic Animation	3
ARTV 2345	3-D Modeling and Rendering II	3
ENGL 1301	Composition and Rhetoric I	3
KINE	Any physical activity course	1
GAME 2338	Game Testing	3
GAME 1334	Video Game Art I	3

SECOND YEAR		Credit
GAME 2332	Project Development I	3
GAME 1335	Interactive Writing I	3
IMED 1345	Interactive Digital Media	3
ARTV 1341	3-D Animation I	3
MATH 1314	College Algebra	3
SPCH 1318	Interpersonal Communication	3
ARTV 2351	3-D Animation II <b>OR</b>	3
ARTC 2305	Digital Imaging II	
IMED 2345	Interactive Digital Media II	3
SOCI <sup>1</sup> 1301	Principles of Sociology	3
Elective <sup>2</sup>	General Academic Elective	3-4
GAME <sup>3</sup> 2334	Project Development II <b>OR</b>	3
GAME <sup>3</sup> 2386	Internship	

**TOTAL Credits for Gaming Design and Simulation Designer (Artist) AAS** **71-72**

<sup>1</sup> Meets multicultural requirement

<sup>2</sup> Choose from AAS core requirements

<sup>3</sup> Capstone course

**GAME DESIGN AND SIMULATION DEVELOPER (PROGRAMMING) SPECIALIZATION**

**Associate of Applied Science degree**

(AAS\_GDSP degree offered at LSC-Kingwood)

FIRST YEAR		Credit
ITSC 1401	Introduction to Computer <b>OR</b>	4
COSC 1401	Introduction to Computers	
GAME 1303	Introduction to Game Design and Development	3
MATH 1314	College Algebra	3
Elective	Humanities/Fine Arts	3
COSC 1309	Logic Design	3
GAME 1304	Level Design	3
ARTV 1303	Basic Animation	3
ENGL 1301	Composition and Rhetoric I	3
PHYS 1410	Elementary Physics	4
ITSE 1407	Introduction to C++ <b>OR</b>	4
COSC 1420	"C" Language	
KINE	Any physical activity course	1
GAME 2338	Game Testing	3
GAME 1335	Interactive Writing I	3

SECOND YEAR		Credit
ITSE 2431	Advanced C++ Programming	4
GAME 2332	Project Development I	3
GAME 1343	Game & Simulation Programming I	3
GAME 2419	Game Engine	4
GAME 2341	Game Scripting	3
GAME 2303	AI Programming I	3
GAME 1359	Game & Simulation Programming II	3
SOCI <sup>1</sup> 1301	Principles of Sociology	3
SPCH 1318	Interpersonal Communication	3
GAME <sup>2</sup> 2334	Project Development II <b>OR</b>	3
GAME <sup>2</sup> 2386	Internship	

**TOTAL Credits for Gaming Design and Simulation Developer AAS** **72**

<sup>1</sup> Meets multicultural requirement

<sup>2</sup> Capstone course

# 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 Marketable Skills Award is awarded for completion of 12 credit hours of course work focusing on basic concepts of GIS software and data. The GIS Technician certificate is awarded for completion of 23 credit hours of course work focusing on proficiency 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 GIS Associate of Applied Science degree for is awarded for the completion of 66-68 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 GIS, geography or geology faculty for specific information or to obtain the recommended sequencing of courses.

## GEOGRAPHIC INFORMATION SYSTEMS-MARKETABLE SKILLS AWARD

(MSC\_GINS award offered at LSC-CyFair)

FIRST YEAR	Credit
GISC 1411 Intro to Geographic Info Systems	4
GISC 1401 Cartography and Geography in GIS and GPS	4
GISC 1421 Introduction to Raster-Based GIS	4
<b>TOTAL Credits for Geographic Information Systems Marketable Skills Award</b>	<b>12</b>

## GEOGRAPHIC INFORMATION SYSTEMS TECHNICIAN CERTIFICATE

(C1\_GIT1 certificate offered at LSC-CyFair)

FIRST YEAR	Credit
COSC 1401 Introduction to Computers <b>OR</b>	4
ITSC 1401 Introduction to Computers	
GISC 1411 Intro to Geographic Information Systems (GIS)	4
MATH 1314 College Algebra	3
GISC <sup>1</sup> 1401 Cartography and Geography in GIS and GPS	4
GISC 1421 Intro to Raster-Based GIS	4
ITSW <sup>2</sup> 1407 Introduction to Databases	4
<b>TOTAL Credits for Geographic Information Systems Technician Certificate</b>	<b>23</b>

<sup>1</sup> Capstone

<sup>2</sup> ITSE 1402 or ITSE 1432 may substitute for ITSW 1407.

## GEOGRAPHIC INFORMATION SYSTEMS ANALYST CERTIFICATE

(C1\_GIA1 certificate offered at LSC-CyFair)

FIRST YEAR	Credit
COSC 1401 Introduction to Computers <b>OR</b>	4
ITSC 1401 Introduction to Computers	
GISC 1411 Intro to Geographic Information Systems (GIS)	4
MATH 1314 College Algebra	3
GISC 1401 Cartography and Geography in GIS and GPS	4
GISC 1421 Intro to Raster-Based GIS	4
ITSW <sup>1</sup> 1407 Introduction to Databases	4
GISC <sup>2</sup> 2380 Cooperative Education <b>OR</b>	3-4
GISC <sup>2</sup> 1491 Special Topics in Cartography	
GISC 2401 Data Acquisition & Analysis in GIS	4
GISC 2411 GIS Applications	4
<b>TOTAL Credits for Geographic Information Systems Analyst Certificate</b>	<b>34-35</b>

<sup>1</sup> ITSE 1402 or ITSE 1432 may substitute for ITSW 1407.

<sup>2</sup> Capstone

## GEOGRAPHIC INFORMATION SYSTEMS

**Associate of Applied Science degree**  
(AAS\_GINS degree offered at LSC-CyFair)

FIRST YEAR		Credit
COSC	1401 Introduction to Computers <b>OR</b>	4
ITSC	1401 Introduction to Computers	
GISC	1411 Intro to Geographic Information Systems (GIS)	4
MATH	1314 College Algebra	3
GISC	1401 Cartography and Geography in GIS and GPS	4
GISC	1421 Intro to Raster-Based GIS	4
ITSW <sup>1</sup>	1407 Introduction to Databases	4
GISC <sup>2</sup>	2380 Cooperative Education <b>OR</b>	3-4
GISC <sup>2</sup>	1491 Special Topics in Cartography	
GISC	2411 GIS Applications	4
GISC	2401 Data Acquisition & Analysis in GIS	4

SECOND YEAR		Credit
GEOL	1403 Physical Geology	4
DFTG	1305 Technical Drafting	3
GEOG	1300 Principles of Geography	3
ENGL	1301 Composition & Rhetoric I	3
MATH	1316 Trigonometry	3
GISC <sup>2</sup>	2381 Cooperative Education <b>OR</b>	3-4
GISC <sup>2</sup>	1491 Special Topics in Cartography	
SPCH	1315 Public Speaking	3
DFTG	1309 Basic Computer-Aided Drafting	3
KINE	Any physical activity course	1
ENGL	2311 Technical Communications	3
Elective <sup>3</sup>	Humanities/Fine Arts	3
<b>TOTAL Credits for AAS Degree</b>		<b>66-68</b>

<sup>1</sup> ITSE 1402 or ITSE 1432 may substitute for ITSW 1407

<sup>2</sup> Capstone course

<sup>3</sup> Select course to meet multicultural requirement

## HEALTH INFORMATION TECHNOLOGY

The Health Information Technology (HIT) 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 is accredited by the Commission on Accreditation for Health Informatics and Information Management Education. The Hospital-Based Coding certificate is currently approved by the Council on Certification 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). In addition, program accreditation allows hospital-based coding certificate

graduates to apply for certification examination to become a Certified Coding Associate (CCA).

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.

To meet graduation requirements for any of the certificate or degree programs in the health information technology department, students must attain a grade of "C" or better in each major and general education course. Courses with grades less than a "C" must be repeated.

In addition, students must meet the Student Success Initiative requirements as established by Lone Star College System. Students must demonstrate proficiency in MATH 0308 prior to graduation. Even though the prerequisite for the HIT major courses is MATH 0306, other academic courses such as BIOL 2401 require the completion of MATH 0308. Once the prerequisite for BIOL 2401 is met, the student has met this requirement for graduation.

### 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 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. Students must submit an application that can be found on the college's website under the HIT department. Prospective students may submit the form online or download the form and mail or bring to the departmental office in WN5P 170A. 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 COSC or ITSC 1401 Introduction to Computers or HITT 1305 Medical Terminology.

Applicants seeking admission into the Health Information

Technology AAS degree and coding certificate program must successfully pass a criminal background check. A drug screen may also be required based on terms of our clinical affiliation agreement. Information on approved vendors will be provided by the program director. Students may be required to show proof of immunizations such as tetanus and MMR (mumps, measles, rubella). Students may also be required to document negative results from a tuberculosis test. Applicants must cover the cost of the background check, immunizations and drug screen if required by clinical affiliates.

### 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 LSC-North Harris website. Applications are due May 1 for fall entry. Applicants seeking admission into these programs must successfully pass a criminal background check. Students may be required to show proof of immunizations such as tetanus and MMR (mumps, measles, rubella). Students may also be required to document negative results from a tuberculosis test. Applicants must cover the cost of the background check, immunizations and drug screen if required by clinical affiliates. Admission requires the following:

1. college-level reading and writing readiness skill;
2. completion of ENGL 0305 or ENGL 0365 & ENGL 0307 or ENGL 0375 or higher;
3. completion of MATH 0306 or higher.

Hospital-Based Medical Coding certificate prepares the technician to assign a code to a medical diagnosis or procedure. 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 summer semester. Students wishing to begin the certificate program at any other time besides the summer 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 patients, managing office supplies, and handling minor accounting for the office. Students completing this certificate will be certified by the American Association of Professional Coders after one year of experience.

Employment of medical records and health information technicians is expected to increase by 18 percent through 2016 according to the Bureau of Labor Statistics. This is faster than the average for all occupations because of rapid growth in the number of medical tests, treatments, and procedures that will be increasingly scrutinized by health insurance companies, regulators, courts, and consumers. Technicians will be needed to enter patient information into computer databases to comply with Federal legislation mandating the use of electronic medical records.

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 tetanus and MMR (mumps, measles, rubella). Students may also be required to document negative results from a tuberculosis test. These costs are borne by the student.

## HOSPITAL-BASED CODING CERTIFICATE

(C2\_HBC2 certificate offered at LSC-North Harris)

Prerequisite	Credit
BIOL 2401 Human Anatomy & Physiology I	4
HITT 1305 Medical Terminology I	3
COSC 1401 Introduction to Computers	4

FIRST YEAR	Credit
BIOL 2402 Human Anatomy & Physiology II	4
HITT 1401 Health Data Content & Structure	4
HPRS 2301 Pathophysiology	3
HITT 1441 Coding & Classification Systems	4
HITT 1345 Health Care Delivery Systems	3
HITT 1342 Ambulatory Coding	3
HITT 2435 Coding & Reimbursement Methodologies	4
HITT 1211 Health Information Systems	2
HITT <sup>1</sup> 1266 Practicum - Health Information Technology	2
HITT 2346 Advanced Medical Coding	3

**TOTAL Credits for Coding Certificate** **43**

<sup>1</sup> Capstone course

Note: Students must meet TSI requirements. See LoneStar.edu/TSI for details.



## DEGREES AND CERTIFICATES

### PHYSICIAN OFFICE-BASED CODING CERTIFICATE

(C1\_POB1 certificate offered at LSC-North Harris)

Prerequisite		Credit
HITT	1305 Medical Terminology I	3
COSC	1401 Introduction to Computers <b>OR</b>	4
ITSC	1401 Introduction to Computers	

FIRST YEAR		Credit
BIOL	2404 Intro to Anatomy & Physiology	4
POFM	1317 Medical Administrative Support	3
HPRS	2301 Pathophysiology	3
HITT	1213 Insurance Coding	2
HITT	2340 Advanced Medical Billing & Reimbursement	3
HPRS	2300 Pharmacology for Health Professions	3
HITT	1342 Ambulatory Coding	3
HPRS	2321 Medical Law & Ethics for Health Professionals	3
HITT <sup>1</sup>	1280 Cooperative Education	2

**TOTAL Credits for Physician Coding Certificate** **33**

<sup>1</sup> Capstone course

### HEALTH INFORMATION TECHNOLOGY

#### Associate of Applied Science degree

(AAS\_HINT degree offered at LSC-North Harris)

FIRST YEAR		Credit
BIOL	2401 Human Anatomy and Physiology I	4
HITT	1305 Medical Terminology I (TP)	3
HITT	1401 Health Data Content & Structure	4
COSC	1401 Introduction to Computers	4
KINE	Any physical activity course	1
BIOL	2402 Human Anatomy and Physiology II	4
ENGL	1301 Composition & Rhetoric I	3
HITT	1345 Health Care Delivery Systems	3
HITT	1353 Legal & Ethical Aspects of Health Information	3
HITT	1355 Health Care Statistics	3
Elective <sup>1</sup>	Humanities/Fine Arts	3
Elective <sup>1</sup>	Social/Behavioral Sciences	3

SECOND YEAR		Credit
HITT	1166 Practicum	1
HPRS	2301 Pathophysiology	3
HITT	1441 Coding & Classification Systems	4
HITT	1211 Health Information Systems	2
SPCH	Speech Elective	3
HITT	2339 Health Info Org. & Supervision	3
HITT	2343 Quality Assess. & Perf. Improvement	3
HITT	1342 Ambulatory Coding	3
HITT	2435 Coding & Reimbursement Methods	4
HITT	2249 RHIT Competency Review	2
HITT <sup>2</sup>	2460 Clinical	4

**TOTAL Credits for AAS degree** **70**

<sup>1</sup> Either social/behavioral science or humanities/fine arts elective must meet multicultural requirement. See general education requirements for AAS degree listed in the catalog.

<sup>2</sup> Capstone experience course: students meet 38 hrs/week for 5 1/2 weeks (equivalent to 12 hrs/week for 16 weeks)

Note: Students must meet TSI requirements. See LoneStar.edu/TSI for details.

### HEATING, VENTILATION, AIR CONDITIONING AND REFRIGERATION

The Heating, Ventilation, Air Conditioning and Refrigeration (HVAC&R) 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 provide 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 and/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.

### HEATING, VENTILATION AND AIR CONDITIONING OCCUPATIONAL ENTRY CERTIFICATE

(C1\_HOC1 certificate offered at LSC-North Harris)

FIRST YEAR		Credit
HART <sup>1</sup>	1401 Basic Electricity for HVAC	4
HART <sup>1</sup>	1407 Refrigeration Principles	4
HART <sup>1</sup>	1445 Gas and Electric Heating	4
HART <sup>2</sup>	1441 Residential Air Conditioning	4

**TOTAL Credits for HVAC Occupational Entry Certificate** **16**

<sup>1</sup> Course is also available online with weekend labs. Contact the LSC-North Harris HVAC Department (281-618-5737) for details.

<sup>2</sup> Capstone course

## HEATING, VENTILATION, AIR CONDITIONING AND REFRIGERATION RESIDENTIAL SERVICING CERTIFICATE

(C1\_AIR1 certificate offered at LSC-North Harris)

FIRST YEAR	Credit
HART 1401 Basic Electricity for HVAC	4
HART 1407 Refrigeration Principles	4
HART 1441 Residential Air Conditioning	4
HART 1445 Gas and Electric Heating	4
HART 1403 Air Conditioning Control Principles	4
HART 2445 Residential Air Conditioning Systems Design	4
HART 2449 Heat Pumps	4
HART 2442 Commercial Refrigeration	4
HART 2431 Advanced Electricity	4
HART <sup>1</sup> 2380 Cooperative Education - Heating, Air Conditioning and Refrigeration Technology/Technician	3

**TOTAL Credits for HVAC & R Residential Servicing Certificate** **39**

<sup>1</sup> Capstone course

Note: 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.

## HEATING, VENTILATION, AIR CONDITIONING AND REFRIGERATION COMMERCIAL SERVICING CERTIFICATE

(C1\_HCS1 certificate offered at LSC-North Harris)

FIRST YEAR	Credit
HART 1401 Basic Electricity for HVAC	4
HART 1407 Refrigeration Principles	4
HART 1441 Residential Air Conditioning	4
HART 1445 Gas and Electric Heating	4
HART 1403 Air Conditioning Control Principles	4
HART 1491 Special Topics in Heating, Air Conditioning & Refrigeration	4
HART 2434 Advanced A/C Controls	4
HART 2441 Commercial Air Conditioning	4
HART 2443 Industrial Air Conditioning	4
HART 2457 Specialized Commercial Refrigeration	4

**TOTAL Credits for HVAC & R Commercial Servicing Certificate** **40**

Note: Capstone is ICE Commercial Exam.

## HEATING, VENTILATION, AIR CONDITIONING AND REFRIGERATION

Associate of Applied Science degree

(AAS\_AIRC degree offered at LSC-North Harris)

FIRST YEAR	Credit
HART 1401 Basic Electricity for HVAC	4
ENGL 1301 Composition & Rhetoric I	3
HART 1407 Refrigeration Principles	4
HUMA <sup>1</sup> 1301 Introduction to the Humanities I	3
SPCH <sup>2</sup> Elective	3
SOCI 1301 Principles of Sociology	3
HART 1441 Residential Air Conditioning	4
HART 1445 Gas and Electric Heating	4
HART 1403 Air Conditioning Control Principles	4
HART 2445 Residential Air Conditioning Systems Design	4
HART 2380 Cooperative Education	3

SECOND YEAR	Credit
MATH 1314 College Algebra	3
ITSC 1401 Introduction to Computers	4
KINE Any physical activity course	1
HART 2442 Commercial Refrigeration	4
HART 2449 Heat Pumps	4
HART 2431 Advanced Electricity	4
HART <sup>3</sup> 2434 Advanced A/C Controls <b>OR</b>	4
HART 2441 Commercial Air Conditioning	4
HART 1491 Special Topics in Heating, Air Conditioning & Refrigeration	4
HART 2443 Industrial Air Conditioning <b>OR</b>	4
HART <sup>3</sup> 2457 Specialized Commercial Refrigeration	4

**TOTAL Credits for AAS Degree** **71**

<sup>1</sup> Meets multicultural requirement

<sup>2</sup> Choose from SPCH 1311, 1315, or 1321

<sup>3</sup> 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.

## 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

## DEGREES AND CERTIFICATES

program and objectives were designed by experienced faculty and guided by leaders in successful hotel and restaurant establishments. The Hospitality Management Associate of Applied Science degree 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 most universities. Most of the courses offered in hospitality will transfer to the Conrad N. Hilton College of Hotel and Restaurant Management at the University of Houston. Under articulation agreements with several area school districts, students have the potential to earn college credit towards the hospitality management degree while in high school. Contact a counselor or faculty member for additional information or the recommended sequence of courses.

### HOSPITALITY OPERATIONS CERTIFICATE

(C1\_HOP1 certificate offered at LSC-North Harris)

FIRST YEAR		Credit
HAMG 1321	Intro to the Hospitality Industry	3
HAMG 2305	Hospitality Mgmt and Leadership	3
MRKG 1311	Principles of Marketing	3
HRPO 2301	Human Resource Management	3
RSTO 1325	Purchasing for Hospitality Ops	3
HAMG <sup>1</sup> 1380	Cooperative Education	3
CHEF 1305	Sanitation and Safety	3
Elective <sup>2</sup>	Technical Electives	3
<b>TOTAL Credits for Hospitality Operations Certification</b>		<b>24</b>

<sup>1</sup> Capstone course

<sup>2</sup> Choose from HAMG 2301, HAMG 2330, or HAMG 1342

### HOSPITALITY MANAGEMENT

#### Associate of Applied Science degree

(AAS\_HSMG degree offered at LSC-North Harris)

FIRST YEAR		Credit
BMGT 1341	Business Ethics	3
ENGL 1301	Composition and Rhetoric I	3
HAMG 1321	Intro to the Hospitality Industry	3
MRKG 1301	Customer Relationship Mgmt <b>OR</b>	2-3
TVRM 1201	Customer Sales &Service	
KINE 1111	Fitness for Life I	1
MATH <sup>1</sup>	Math Elective <b>OR</b>	3-4
TECM	Technical Calculations	
Elective <sup>1</sup>	Natural Science Elective	3-4
HPRO 2301	Human Resource Management	3
CHEF 1305	Sanitation and Safety	3

ACCT 2401	Principles of Accounting I <b>OR</b>	3-4
ACNT 1303	Introduction to Accounting I	
COSC 1401	Introduction to Computers <b>OR</b>	4
ITSC 1401	Introduction to Computers	

### SECOND YEAR

		Credit
Elective <sup>2</sup>	Hospitality Management	3
MRKG 1311	Principles of Marketing	3
Elective <sup>3</sup>	Humanities/Fine Arts Elective	3
SPCH 1315	Public Speaking	3
HAMG 2305	Hospitality Mgmt and Leadership	3
Elective <sup>3</sup>	Social/Behavioral Science	3
HAMG <sup>4</sup> 1380	Cooperative Education	3
Elective <sup>5</sup>	Hospitality Management or Business	3
RSTO 1325	Purchasing for Hospitality Ops	3
Elective <sup>6</sup>	Technical Elective	3

### TOTAL Credits for Hospitality

**61-65**

### AAS Degree

<sup>1</sup> See core requirements for AAS degree for options.

<sup>2</sup> Choose a CHEF, HAMG, RSTO or TRVM course

<sup>3</sup> Choose one elective from humanities/fine arts and one from social/behavioral science from the approved associate of applied science core listed in the catalog. One of these courses must meet the multicultural requirement.

<sup>4</sup> Capstone course

<sup>5</sup> Choose technical elective from any CHEF, HAMG, RSTO or TRVM course, or any BUSI, BMGT, BUSG, HRPO, MRKG or IBUS course

<sup>6</sup> Choose one from HAMG 2301, HAMG 2330 or HAMG 1342

Note: Students must meet TSI requirements. See LoneStar.edu/TSI for details.

## HUMAN SERVICES

The human services program provides the skills and competencies required for a variety of positions in the helping professions field. Human service professionals work with those experiencing a wide range of issues, struggles or problems, including those with developmental disabilities, individuals with mental health problems or disorders, people with substance abuse problems, clients with work- or educational-related issues, or those needing assistance with basic life need issues such as housing, food, and clothing. Human service professionals work with children, adults, groups, families and the elderly.

Human service professionals are motivated by helping others. Effective professionals are patient, have empathy and compassion for others, and enjoy giving of themselves and working with others. Human service professionals should also be able to manage their time well and possess effective communication skills. Because of the nature of the work in this field, professionals should be mature, stable and dependable.

Students with a degree in human services often work in any number of capacities and jobs, including case managers or case workers, counselors, advocates, and prevention or education specialists. Many graduates work one-on-one with clients in direct care positions, while others work behind the scenes or in administrative or management positions. Human service professionals work in government- or state-funded agencies, in non-profit agencies, in residential treatment programs and hospitals, and in private offices or agencies.

All course work required for licensing as a chemical dependency counselor, as well as the supervised practicum training, is provided. Students pursuing the Human Services Associate of Applied Science degree may select from one of two concentrated areas of study: substance abuse counseling or general human services.

At some placement sites, students may be required to successfully pass a background check and drug screen.

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.

## HUMAN SERVICES CERTIFICATE

(C1\_HSC1 certificate offered at LSC-Montgomery)

FIRST YEAR		Credit
SCWK 1321	Orientation to Social Services	3
DAAC 1304	Pharmacology of Addiction	3
DAAC 1311	Counseling Theories	3
DAAC 1317	Basic Counseling Skills	3
PSYC 2301	General Psychology	3
CMSW 1341	Behavior Modification With Cognitive Disorder	3
DAAC 2354	Dynamics of Group Counseling	3
DAAC <sup>1,2</sup> 2360	Clinical <b>OR</b>	3
SCWK <sup>1,3</sup> 2386	Internship	
Elective <sup>4</sup>	Technical	3
PSYC 2308	Child Growth & Development <b>OR</b>	3
PSYC 2314	Life-Span Growth & Development	
<b>TOTAL Credits for Human Services Certificate</b>		<b>30</b>

<sup>1</sup> Capstone course

<sup>2</sup> 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.

<sup>3</sup> 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.

<sup>4</sup> Elective to be chosen from CMSW, DAAC or GERS

## BASIC CHEMICAL DEPENDENCY COUNSELOR CERTIFICATE

(C1\_HBCD certificate offered at LSC-Montgomery)

FIRST YEAR		Credit
SCWK 1321	Orientation to Social Services	3
DAAC 1311	Counseling Theories	3
DAAC 1317	Basic Counseling Skills	3
DAAC 1304	Pharmacology	3
DAAC 2354	Dynamics of Group Counseling	3
DAAC 2341	Counseling Alcohol and Other Drug Addictions	3
DAAC <sup>1</sup> 2360	Clinical/Field Placement	3
<b>TOTAL Credits for Chemical Dependency Counselor Certificate</b>		<b>21</b>

<sup>1</sup> Students may also take DAAC 2160 and DAAC 2260 to fulfill the field placement requirement, as long as 3 credit hours are obtained in total; Capstone course

## HUMAN SERVICES

### Associate of Applied Science degree

(degree offered at LSC-Montgomery)

FIRST YEAR		Credit
SCWK 1321	Orientation to Social Services	3
DAAC 1317	Basic Counseling Skills	3
ENGL 1301	Composition and Rhetoric I	3
ITSC 1401	Introduction to Computers	4
PSYC 2301	General Psychology	3
SCWK 2331	Abnormal Behavior	3
Elective <sup>1</sup>	Technical Track Elective	3
DAAC 1311	Counseling Theories	3
Elective <sup>2</sup>	Humanities/Fine Arts	3
SOCI <sup>3</sup> 1301	Principles of Sociology	3
KINE	Any physical activity course	1
SECOND YEAR		Credit
GOVT 2301	American Government	3
Elective <sup>1</sup>	Technical Track Elective	3
Elective <sup>1</sup>	Technical Track Elective	3
DAAC 2354	Dynamics of Group Counseling	3
Elective <sup>2</sup>	Academic	3
DAAC <sup>4,5</sup> 2360	Clinical <b>OR</b>	3
SCWK <sup>4,6</sup> 2386	Internship	
Elective <sup>1</sup>	Technical Track Elective	3
Elective <sup>1</sup>	Technical Track Elective	3
Elective <sup>7</sup>	Math/Natural Science	3-4
SPCH <sup>7,8</sup>	Elective	3
<b>TOTAL Credits for Human Services AAS Degree</b>		<b>62-63</b>

<sup>1</sup> Technical electives should all be taken from the same track. See faculty for assistance in determining which track will work best for you.

### Track A - Substance Abuse Counseling Concentration

AAS\_HSSA:

**DEGREES AND CERTIFICATES**

Students pursuing Track A must select DAAC 1304, DAAC 1319, DAAC 2341, DAAC 1309. In addition, students must also select one of the following courses for their final elective: CMSW 1353, CMSW 1341, CMSW 1309, or DAAC 2343.

**Track B - General Human Services Concentration AAS\_HSGN:**

Students pursuing Track B must select CMSW 1353. In addition, students must also select four electives chosen from DAAC, CMSW, or GERS.

- <sup>2</sup> Refer to the catalog for Associate of Applied Science degree requirements and a list of approved courses.
- <sup>3</sup> Meets multicultural requirement
- <sup>4</sup> Capstone course
- <sup>5</sup> Students pursuing Track A must complete the DAAC clinical requirement. Students may also take DAAC 2160 and DAAC 2260 to fulfill this field placement requirement, as long as 3 credit hours are obtained in total.
- <sup>6</sup> Students pursuing Track B must complete the SCWK internship requirement. Students may also take SCWK 2186 and SCWK 2286 to fulfill this field placement requirement, as long as 3 credit hours are obtained in total.
- <sup>7</sup> Students should consult their prospective senior institution's catalog for science, math, and speech requirements.
- <sup>8</sup> Choose from SPCH 1311, 1315, 1318 or 1321.  
Note: Students must meet TSI requirements. See LoneStar.edu/TSI for details.

## 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 Design Essentials certificate.

The Interior Design Associate of Applied Science degree program includes 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, color plotter, and an up-to-date resource library with catalogues and samples for student use. All courses in the interior design curriculum have been fully accredited by the National Kitchen and Bath Association (NKBA).

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) and NKBA, offering networking and educational opportunities with professional interior designers.

The general education core and many design classes 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.

### DESIGN ESSENTIALS CERTIFICATE

(C1\_DSE1 certificate offered at LSC-Kingwood)

FIRST YEAR	Credit
ARTS Elective - General Education	3
INDS 1311 Fundamentals of Interior Design	3
INDS 1319 Tech. Drawing/Interior Designers	3
INDS 1351 History of Interiors I	3
INDS 2307 Textiles for Interior Design	3
Elective General Education Core	3
HRPO 1311 Human Relations <b>OR</b>	3
PSYC 2301 General Psychology	3
INDS 1315 Materials, Methods, and Estimating	3
INDS <sup>1</sup> 1349 Fundamentals of Space Planning	3
INDS 1352 History of Interiors II	3

**TOTAL Credit Hours for Design Essentials Certificate** **30**

<sup>1</sup> Capstone course

### INTERIOR DESIGN TECHNOLOGY

**Associate of Applied Science degree**

(AAS\_IDES degree offered at LSC-Kingwood)

FIRST YEAR	Credit
ARTS 1316 Drawing I	3
ENGL 1301 Composition & Rhetoric I	3
INDS 1311 Fundamentals of Interior Design	3
INDS 1319 Technical Drawing for Interior Designers	3
INDS 2307 Textiles for Interior Design	3
INDS 1349 Fundamentals of Space Planning	3
INDS <sup>1</sup> 2305 Interior Design Graphics	3
INDS 2321 Presentation Drawing	3
KINE Any physical activity course	1
MATH <sup>2</sup> Elective - College level	3-4
SPCH 1315 Public Speaking <b>OR</b>	3
SPCH 1321 Business and Professional Communication <b>OR</b>	3
SPCH 1311 Intro to Speech Communications	3

SECOND YEAR		Credit
INDS	1351 History of Interiors I	3
INDS	2330 Interior Design Building Systems	3
INDS	2313 Residential Design I <b>OR</b>	3
INDS <sup>3</sup>	Interior Design Elective	
INDS	2315 Lighting for Interior Designers	3
INDS	2325 Professional Practices for Interior Designers	3
PSYC	2301 General Psychology	3
INDS	1315 Materials, Methods and Estimating	3
INDS	1345 Commercial Design I <b>OR</b>	3
INDS <sup>3</sup>	Interior Design Elective	
INDS <sup>4</sup>	1352 History of Interiors II	3
INDS <sup>5</sup>	2237 Portfolio Presentation	2
INDS	2486 Internship - Interior Design	4
<b>TOTAL Credit Hours for Interior Design AAS</b>		<b>64-65</b>

<sup>1</sup> Meets computer competency

<sup>2</sup> MATH 1314, 1316, 1324, 1325, 1332, 1342, 2320, 2412, 2413, 2414, or 2415.

<sup>3</sup> For INDS elective in third and fourth semesters, choose from INDS 1345, 1372, 2310, or 2313; cannot choose same course twice

<sup>4</sup> Meets multicultural requirement

<sup>5</sup> Capstone course

## FACILITIES MANAGEMENT

The two-year Facilities Management Associate of Applied Science degree prepares students for an entry-level position in this field. A combination of design and business courses introduces students to the responsibilities involved in the effective management and maintenance of commercial properties and venues. Management courses highlight skills and knowledge necessary for business, while design courses focus on the built environment and its impact on workers and visitors. A supervised internship in the final semester of the program allows students to work with professional facilities managers and experience first-hand the daily complexities and variety of duties encountered in this fast-growing profession.

The general education core and many design and business classes 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.

## FACILITIES MANAGEMENT

### Associate of Applied Science degree

(AAS\_FCMT degree offered at LSC-Kingwood)

FIRST YEAR		Credit
MATH	1314 College Algebra	3
ENGL	1301 Composition & Rhetoric I	3
INDS	1311 Fundamentals of Interior Design	3
INDS	1319 Tech. Drawing for Interior Designers	3
KINE	Any physical activity course	1
ITSC	1401 Introduction to Computers <b>OR</b>	4
COSC	1401 Introduction to Computers	
INDS	1349 Fundamentals of Space Planning	3
INDS	2305 Interior Design Graphics	3
BMGT	1327 Principles of Management	3
PSYC	2301 General Psychology	3
SPCH	1321 Business and Professional Communication	3

SECOND YEAR		Credit
INDS	2330 Interior Design Building Systems	3
BUSI	1301 Business Principles	3
BMGT	2303 Problem Solving & Decision Making	3
INDS	1315 Materials, Methods and Estimating	3
BMGT	1306 Facilities Management	3
Elective <sup>1</sup>	Humanities/Fine Arts	3
ENGL	2311 Technical Communications	3
BUSI	2301 Business Law	3
Elective <sup>2</sup>	Elective	3-4
BMGT	1309 Information & Project Management	3
INDS	1345 Commercial Design I	3
INDS <sup>3</sup>	2487 Internship - Interior Design	4

### TOTAL Credit Hours for Facilities Management AAS

**69-70**

<sup>1</sup> Must meet multicultural requirement

<sup>2</sup> Choose elective from ARTS 2356, INDS 1372, INDS 2311, CRIJ 1301, CETT 1402, MRKG 1301, HART 1401

<sup>3</sup> Capstone course