**Math 1351 – Foundations of Mathematics II**

**Mathematical Reasoning for Elementary School Teacher**



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**Catalog Description:**
3 Credits (3 hrs. lec.) This course is intended to build or reinforce a foundation in fundamental mathematics concepts and skills. It includes the concepts of geometry, measurement, probability, and statistics with an emphasis on problem solving and critical thinking. (2701015719) Prerequisite: [MATH 1314](http://catalog.lonestar.edu/content.php?filter%5B27%5D=MATH&filter%5B29%5D=&filter%5Bcourse_type%5D=-1&filter%5Bkeyword%5D=&filter%5B32%5D=1&filter%5Bcpage%5D=1&cur_cat_oid=22&expand=&navoid=8470&search_database=Filter#tt5544) or placement by testing; College Level Readiness in Reading AND Writing

**Course Learning Outcomes:**
The student will:

* Apply fundamental terms of geometry such as points, lines, and planes to describe two and three dimensional figures
* Make and test conjectures about figures and geometric relationships
* Use a variety of methods to identify and justify congruency and similarity of geometric
* Perform geometric transformations
* Demonstrate fundamental probability techniques and apply those techniques to solve.
* Explain the use of data collection and statistics as tools to reach reasonable conclusions
* Recognize, examine, and utilize the basic principles of describing and presenting data
* Perform measurement processes and explain the concept of a unit of measurement
* Develop and use formulas for the perimeter, area, and volume for a variety of figures

**Book Sections**

Chapter 9

9.1 Graphical Representation of Data

9.2 Measures of Central Tendency and Variability

9.3 Statistical Inference and Sampling

Chapter 10

10.1 Empirical Probability

10.2 Principles of Counting

10.3 Permutations and Combinations

10.4 Theoretical Probability

Chapter 11

11.1 Figures in the Plane

11.2 Curves and Polygons in the Plane

11.3 Figures in Space

11.4 Networks

Chapter 12

12.1 The Measurement Process

12.2 Area and Perimeter

12.3 The Pythagorean Theorem

12.4 Surface Area and Volume

Chapter 13

13.1 Rigid Motions and Similarity Transformations

13.2 Patterns and Symmetries

13.3 Tilings and Escher-like Design

Chapter 14

14.1 Congruent Triangles

14.2 Constructing Geometric Figures

14.3 Similar Triangles