MATH 1351
Student Course Document – Revised Spring 2012

1. **Course Title:** Foundations of Mathematics II

2. **Prerequisite:** College Algebra (Math 1314) or by Departmental Approval
   **Corequisite:** Engl 0305 or 0316 (developmental reading) or placement by testing
   Engl 0307 or 0326 (developmental writing) or placement by testing

3. **Credit:** Three (3) semester hours

4. **Materials Needed:**
   4.1 **Textbook:** *Mathematics for Elementary Teachers, A Contemporary Approach:*
      9th edition; Musser, Burger, Peterson
   4.2 **Calculators:** The student will be expected to own and use a scientific calculator or a
      graphing calculator. Though graphing calculators will be used in class, students will not
      be required to purchase one, though it is recommended.

5. **Purpose:**

   The Foundations of Mathematics sequence is designed to meet the mathematics requirements for
   students seeking to obtain an elementary teaching certificate from state universities.

   **NOTE:** Mathematics requirements for elementary education majors vary greatly across the state
   of Texas. Students should make an effort to obtain information concerning transfer requirements
   directly from the institution to which the student is transferring.

6. **Major Course Objectives:**

   6.1 The student will investigate, calculate and interpret basic numerical and descriptive statistical
       measures. At the end of this unit students will be able to do the following:

   - determine range, frequency, relative frequency, percentiles, outliers and quartiles given
     real world data
   - create and interpret line graphs, line plots, bar graphs, histograms, stem and leaf plots,
     box and whisker plots, circle graphs and pictographs
   - calculate and analyze measures of central tendency and measures of dispersion, including
     mean, median, mode, variance, standard deviation

   6.2 The student will develop a basic understanding of the fundamental ideas of probability. At
       the end of this unit students will be able to do the following:

   - use the Fundamental Counting Principle as well as knowing when it is a valid technique
     to use
   - use the fundamental formulas related to factorial notation, permutations and
     combinations
   - use tree diagrams to model probability experiments
use and understand the fundamental language of probability, including: sample space, outcome, event, equally likely events, mutually exclusive events, certain events and impossible events
- calculate numerical probabilities
- integrate combinations, permutations, the Fundamental Counting Principle and tree diagrams into probability problems
- construct simulations
- calculate expected value

6.3 The student will be able to analyze and characterize the properties of geometric figures. The following general categories will be explored:

- undefined terms: point, line, plane, space
- angles
- polygons, including tessellations using polygons
- circles and other two-dimensional figures
- polyhedra, spheres, cylinders, cones and other three dimensional figures

6.4 The student will be able to use measurement as a tool to solve abstract and real-world problems. Students will cover the following ideas in a comprehensive overview of measurement as it relates to basic geometry:

- measurement with non-standard units of measure
- English units of measure, metric units and their relationship to each other
- linear measure, including perimeter and circumference
- area measure, including the area of polygons, circles and complex regions
- volume measure, including cylinders, cones, prisms, pyramids and spheres
- the Pythagorean Theorem

6.5 Students will conduct a thorough analysis of congruence and similarity including learning how to prove two figures are congruent or similar. Students will also learn how to use the ideas of similarity and congruence to solve real-world problems. The following ideas will be studied in this unit:

- congruence theorems for triangles
- similarity theorems for triangles
- ratio and proportion and solving real-world problems using similar triangles
- symmetry, including line and point symmetry
- transformations

6.6 The student will explore ways in which elementary school math students can be “turned on” to mathematics

7. General Course Outline:

Textbook Chapters 10 through 14
8. **MyLoneStar:**

MyLoneStar gives students, faculty, and staff access to important academic information. It allows a student to register, search for courses, obtain financial aid information, pay tuition and fees, and view course grades. From [www.lonestar.edu](http://www.lonestar.edu), click on MyLoneStar at the top right corner. Follow the instructions for securing your user name and password under the Self-Service Tools. Please contact the helpdesk at 1-866-614-5014 or send an email to [ots@lonestar.edu](mailto:ots@lonestar.edu) for further assistance.

9. **Withdrawal Policy/Student Drop Limit:**

Students who enrolled in Texas public institutions of higher education as first-time college students during the Fall 2007 term or later are subject to section 51.907 of the Texas Education Code, which states that an institution of higher education may not permit a student to drop (withdraw with a grade of “W”) from more than six courses. This six-course limit includes courses that a transfer student has previously dropped at other Texas public institutions of higher education if they fall under the law.

Students should be sure they fully understand this drop limit before they drop a course. Please visit the admissions office or counseling/advising center for additional information and assistance.

10. **Academic Integrity:**

The Lone Star College System upholds the core values of learning: honesty, respect, fairness, and accountability. The system promotes the importance of personal and academic honesty. The system embraces the belief that all learners—students, faculty, staff, and administrators—will act with integrity and honesty and must produce their own work and give appropriate credit to the work of others. Fabrication of sources, cheating, or unauthorized collaboration is not permitted on any work submitted within the system.

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

1. Having additional class requirements imposed,
2. Receiving a grade of zero or “F” for an exam or assignment,
3. Receiving a grade of “F” for the course,
4. Being withdrawn from the course or program,
5. Being expelled from the college system.

11. **Division Counselor:**

Rhonda Cannon, Counselor for Math and Natural Sciences, is available in Winship 115G to assist you in meeting your academic, career, and personal goals. Confidential counseling services are available by appointment to help you overcome academic challenges, make a career choice, plan your transfer, and to gain self-understanding. To schedule an appointment call 281-618-5480 or email [rhonda.cannon@lonestar.edu](mailto:rhonda.cannon@lonestar.edu) or stop by Winship 115G.

* It is the responsibility of the student to drop a class by “W” day if he/she desires.

* Students with disabilities, who wish to request accommodations in this class, must notify the Disability Services Office as soon as possible so that the appropriate arrangements may be made. Students requesting accommodations must provide documentation of his/her disability to a Disability Services counselor. For more information, call or visit the Disability Services Office at SB 110, (281) 618-5481.