

STRUCTURES AND CONCEPTS IN MATHEMATICS II

COURSE DESCRIPTION: Designed for prospective elementary school teachers. Counting methods, elementary probability and statistics. Topics in Geometry to include polygons, congruence and similarity, measurement, geometric transformations, coordinate geometry, and connections between numbers and geometry with selected applications.

OBJECTIVE: To acquaint future teachers with the mathematics content and problem solving strategies relevant to teaching in grades Kindergarten through eighth grade.

REQUIRED TEXT: Rick Billstein, Shlomo Libeskind, Johnny W. Lott, A Problem Solving Approach to Mathematics for Elementary School Teachers, 10th Edition, Addison-Wesley, 2010.

MATERIALS REQUIRED:

- Two or Three Spiral Binders
- Scissors
- Colored Pencils/Highlighter Pens
- Glue Stick/Tape
- Straightedge
- 3-ring binder

Attendance: Attendance is **not optional**. Students are expected to attend all class meetings, be on time, and be in class the entire class session. **Two tardies can be counted as an absence. Four (4) absences** may result in a drop from the course. However, if you decide to drop the course, it is **your** responsibility to make the drop official in the Admissions and Records office or else possibly receive a grade of **F**.

TESTS: Three to four tests, worth 100 points each, will be given. There are **NO MAKEUPS** for missed tests. **NO EXCEPTIONS!!** *If you absolutely must be absent on the day a test is scheduled, you may discuss with me the possibility of taking the test early.*

WRITING PROJECTS: There will be two or three writing projects assigned during the semester. Each of these will be worth 50 points. Full details on the requirements for each project will be given when the assignment is made.

HOMEWORK: Homework will be assigned on a daily basis. Assignments will always be collected the next class session. **All work must be shown** in order to receive credit. **NO LATE HOMEWORK WILL BE ACCEPTED!**

*Note: Being absent the day homework is collected does **not** entitle you to turn it in late!*

Homework Notebook: All homework problems are to be worked out completely, with all work shown in a **spiral notebook**. Each assignment and the problems of the assignment are to be clearly labeled and answers are to be boxed. The **Homework Notebook** will be collected periodically and will be worth **two homework** assignments.

QUIZZES: There will be **daily** in-class **homework/notes quizzes**. These quizzes will be worth 10 points each and will be given **during the first five minutes of class**. Any students who are not in their seats when the quiz is handed out **will not** be allowed to take the quiz and will receive a grade of zero for that quiz. There will be no makeup quizzes for students coming in late during a quiz or for students absent on the day of a quiz.

CLASSWORK: How much you get out of this class will really depend on how much you contribute to the class. Much of this class will involve working in groups, participating in classroom discussion, and presenting problems on the board in front of your peers.

FINAL EXAM: A two hour comprehensive final exam worth 100 points will be given at the end of the 9-week session. This final exam will count as an exam score and it may be used to replace a low test score but may not be used to replace the homework, classwork, or quiz grades.

GRADING:

- **Homework** will represent 25% of the final course grade.
- **Quizzes and Projects** will represent 25% of the final course grade.
- The **chapter exams and the final exam** will represent 50% of the final course grade.

Example: If your homework average is 90, the average of your quizzes and projects is 75 and the average of your chapter exams and final is 78, then you would compute your grade as follows:

$$(.25)(90) + (.25)(75) + (.50)(78) = 22.5 + 18.75 + 39 = 80.25$$

- Your grade will then be determined by the following **grading scale**:

90 – 100% = A
80 – 89% = B
67 – 79% = C
55 – 66% = D
0 – 54% = F

Important Dates:

- ***April 18 – 22, 2011 – Spring Recess***
- ***March 25, 2011 – Last day to add***
- ***April 8, 2011 – Last day to drop***
- ***FINAL EXAM DATE: Monday, May 16, 2011: 1:00 – 2:50***

Academic Dishonesty: Academic dishonesty in any form is a very serious offense and will incur serious consequences, including but not limited to receiving a grade of F in the course. For the college policy on cheating and plagiarism, see the college catalog.

NOTE: If you have a verified need for an academic accommodation or materials in alternate media per the Americans with Disabilities Act or Section 504 of the Rehabilitation Act, please contact me as soon as possible.

Course Objectives

In the process of completing this course, the student will demonstrate the ability to:

- A. Interpret data, both graphically and through numerical analysis.
- B. Calculate probability of different types of events.
- C. Identify, construct and analyze geometric shapes.
- D. Determine the congruence or similarity of triangles.
- E. Apply the measurement process
- F. Identify the patterns and symmetries of plane figures.
- G. Apply the concepts of Coordinate Geometry.