COURSE SYLLABUS for
Math 381 Spring 2008
FOUNDATIONS OF MATHEMATICS FOR ELEMENTARY TEACHERS (III)

CLASSROOM AND SCHEDULE: **MW**: 12:30-01:50   Lee Drain Building, Room 218

INSTRUCTOR: Dr. Max Coleman
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 Office Hours: MW 8:30-11:00 and TTh 8:30-9:30 and 11:00-12:00
    Others by appointment

COURSE OBJECTIVES/COURSE DESCRIPTION:

This course is the third in a series of courses designed to develop the necessary foundations in mathematics for prospective elementary teachers.   Students are expected to practice communications skills and participate in hands-on activities, including the use of math manipulatives and technology.   Topics will include National and Texas standards for teaching mathematics, problem solving, discrete mathematics, probability, and data analysis. Throughout the course, the four main themes recommended by the NCTM Principles and Standards (problem solving, reasoning, communication, and connections) will be emphasized.   Students will also participate in class discussions and group work during this course.
Prerequisite: Math 184 with a grade of C or better.   3 semester hours.

COURSE OBJECTIVES:

 Upon completion of this course, students will be able to:
-    Demonstrate understanding of the four-step problem solving process.
        Solve mathematical problems using a variety of strategies.
    -    Solve interest and growth problems using recursion techniques.
            Use graph theory techniques to solve discrete mathematics problems.
            Solve probability problems involving simple and compound events.
            Apply theoretical and experimental probability techniques for solving problems.
            Solve combinatorics problems, using a variety of counting techniques.
            Construct and interpret different types of graphs, including bar graphs, line graphs, pie charts, stem and leaf plots, box and whisker plots, and scatter plots.
            Understand the difference between correlation and causation.
            Calculate and apply measures of central tendency, such as mean, median, and mode.
            Calculate and apply measures of dispersion, such as range, interquartile range, and standard deviation.
            Use the normal distribution to solve problems related to education.

TEXT AND MATERIALS:

    Long C. and DeTemple D., *Mathematical Reasoning   for Elementary Teachers (4th Edition),* 2006, Pearson/Addison-Wesley.

Attendance Policy

Attendance is *extremely* important. Regular and punctual attendance is expected of every student. As a prospective teacher, you must demonstrate your reliability and conscientious attitude by your faithful attendance. Students who have two or less absences during the semester will be allowed to *substitute* their final exam grade for their lowest grade on the three major exams.

Attendance will be taken every class. If you are late to class, it is your responsibility to notify the instructor immediately after class. Any student who is more than 30 minutes late to class will be counted absent. Tardies will count against your attendance record (2 tardies = 1 absence). Unless approved by the instructor, leaving class early will count as an absence. If absent or tardy, you are still responsible for all material covered in class, and you will need to check with a classmate about what was discussed. Serious health or family problems that are well documented will be handled individually. In addition to attending class faithfully, students are expected to put forth their best effort in this class.

Make-up Tests:

Unless approved by the instructor prior to the date of a test, there will be no make-up for a missed test. If a student misses a test, then the score on the final exam will be given for the first test missed. A score of zero will be given for any subsequent missed exams. A missed final examination can be made up only by approval of the Dean of the College of Arts and Sciences or a higher administrative official.

Assignments
  Major Examinations (3) 75%
  Final Examination   25%

Major Examinations

There will be three major examinations in this course. You should notify the instructor in advance if you must miss a class during which time a major examination is scheduled. The instructor, at his discretion, may allow you to take the exam at a different time. In the event this is not possible, the final exam grade will replace the exam missed. Each major exam will be worth 100 points.

Final Examination

The final examination is comprehensive. It will be worth 100 points.

Grading Plan

The course grade will be determined by the average of the three (3) major exam grades and the final exam grade. Students with 2 or less absences will have the option of replacing their lowest major exam grade with the final exam grade. If the final exam grade is replacing a missed exam, the final exam grade will be used in place of only the missed exam. The letter grade will be determined as follows: (as a percent)

  90 – 100 A   60 – 69 D
  80 – 89 B   < 60 F
  70 – 79 C

Academic Dishonesty

All students are expected to engage in all academic pursuits in a manner that is above reproach. Students are expected to maintain complete honesty and integrity in the academic experiences both in and out of the classroom. Any student found guilty of dishonesty in any phase of academic work will be subject to disciplinary action. The University and its official representatives may initiate disciplinary proceedings against a student accused of any form of academic dishonesty including, but not limited to, cheating on an examination or other academic work which is to be submitted, plagiarism, collusion and the abuse of resource materials.

Classroom Rules of Conduct

Students will refrain from behavior in the classroom that intentionally or unintentionally disrupts the learning process and, thus, impedes the mission of the university.   Cellular telephones and pagers must be turned off before class begins.   Students are prohibited from eating in class, using tobacco products, making offensive remarks, reading newspapers, sleeping, talking at inappropriate times, wearing inappropriate clothing, or engaging in any other form of distraction.   Inappropriate behavior in the classroom shall result in a directive to leave class. Students who are especially disruptive also may be reported to the Dean of Students for disciplinary action in accordance with university policy.

Visitors in the Classroom

Unannounced visitors to class must present a current, official SHSU identification card to be permitted in the classroom.   They must not present a disruption to the class by their attendance.   If the visitor is not a registered student, it is at the instructor's discretion whether or not the visitor will be allowed to remain in the classroom.

Americans with Disabilities Act

It is the policy of Sam Houston State University that no otherwise qualified disabled individual shall, solely by reason of his/her handicap, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any academic or Student Life program or activity.   Disabled students may request assistance with academically related problem stemming from individual disabilities by contacting the Director of the Counseling Center in the Lee Drain Annex or by calling 936-294-1720.

Religious Holidays

A student who is absent from class for the observance of a religious holy day will be allowed to take an examination or complete an assignment scheduled for that day within a reasonable time after the absence. Students will be excused to travel for observance of a religious holy day.   A student who wishes to be excused for a religious holy day must present the instructor with a written statement describing the holy day(s) and the travel involved.   Upon receiving the statement the instructor will provide the student with a written description of the deadline for the completion of missed exams or assignments.

Instructor Evaluations

You may be asked to complete a course/instructor evaluation form toward the end of the semester.

Syllabus Revision

The instructor reserves the right to revise any part of this syllabus as deemed necessary throughout the semester.   Revision, if necessary, will be announced during class.

MATH 381 COURSE SCHEDULE (TENTATIVE)

<u>TOPIC</u>   <u>READINGS</u>

Standards, problem-solving process   Chapter 1

Problem solving strategies & techniques Chapter 1
        Supplemental materials
Exam #1

        Recursion   Supplemental materials

Algebraic patterns   Supplemental materials

        Sequences and functions   Chapter 8.2

Probability   Chapter 10.1-10.3

Exam #2

        Picturing data   Chapters 9.1

Measures of central tendency and dispersion Chapter 9.2

Normal distribution and inference   Chapter 9.3

Exam #3

FINAL EXAM: May 13 from 8:00am-10:00am