COURSE SYLLABUS
MTH 381-03
FOUNDATIONS OF MIDDLE SCHOOL MATHEMATICS III
CREDIT HOURS: 3
FALL 2007

Class time: MTH 381-03, Tues/Thurs, 3:30 – 4:50 PM
Instructor: Dr. Bill Jasper
Office location: Lee Drain Building, Room 439A
Instructor contact information: Phone 294-1575, FAX: 936-294-1882, Email: jasper@shsu.edu

Office Hours: Mon/Wed, 10 AM – 12 noon
                        Tues./Thurs., 10 - 11 AM, and 2 – 3:30 PM.   Appointments by special arrangement.

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: MTH 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 and techniques, such as make a diagram, look for a pattern, eliminate possibilities, use logical reasoning, and guess and check.
- Solve interest and growth problems using recursion techniques.
- Use graph theory techniques to solve discrete mathematics problems.
- Determine fairness of voting systems, using preference schedules, run-off, and borda count methods.
- Solve probability problems involving simple and compound events, using a variety of mathematical manipulatives.
- Apply theoretical and experimental probability techniques while 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 variation, such as range, interquartile range, and standard deviation.
- Use the normal distribution to solve problems related to education.

REQUIRED TEXTBOOK AND MATERIALS:

Long, Calvin and DeTemple, Duane W. (2006). Mathematical Reasoning for Elementary Teachers (Fourth Edition). Boston, MA: Pearson Education, Inc.
Supplemental materials provided by the instructor
A graphing calculator or scientific calculator is recommended for this course

ATTENDANCE POLICY:

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 miss more than two classes (three hours) during the semester will be assessed a point penalty (up to 50 points for severe attendance problems) toward their course grade**. 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. However, if you are unable to attend class regularly, then you should drop the course.

In addition to attending class faithfully, students are expected to put forth their best effort in this class. If you do not participate in class discussions, are sleeping in class, or are talking when I am talking or when a classmate is talking, you are not demonstrating the professional attitude required to be a teacher. Point penalties will be assessed for any problems in this area. Up to 25 points are designated for participation/professionalism in this course, and you must be "near perfect" to earn all of these points.

ASSIGNMENTS:

Homework or mini-projects will be normally be assigned for every class day, and may be collected for a grade at the instructor's prerogative. Homework assignments should be accomplished in a thorough manner, regardless whether they are to be collected for a grade or not. To earn maximum points, all problems must be attempted and all work must be shown. Assignments are due at the beginning of class.

EXAMS:

There will be three exams during this semester, as well as a comprehensive final exam. No exams will be dropped or replaced. 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 final exam will count double. Projects submitted late will suffer a point penalty. 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.

GRADING PLAN:

Each student's grade for this course will be based on the number of points earned out of 500 total points, as listed below:
A = 450 points or more   B = 400 - 449 pts   C = 350 - 399 pts   D = 300 - 349 pts   F = below 300 pts

Grades will be assigned for the following areas:
Three exams, weighted 100 points each
Homework and projects - 50 points
Class participation, attendance, professionalism - 50 points
Comprehensive final exam - 100 points

STUDENT SYLLABUS GUIDELINES:
　　　　You may find online a more detailed description of the following policies. These guidelines will also provide you with a link to the specific university policy or procedure:
http://www.shsu.edu/syllabus/
Academic Dishonesty: Students are expected to maintain honesty and integrity in the academic experiences both in and out of the classroom. *See Student Syllabus Guidelines*.

Classroom Rules of Conduct: Students are expected to assist in maintaining a classroom environment that is conducive to learning. Students are to treat faculty and students with respect. Students are to turn off all cell phones while in the classroom. Under no circumstances are cell phones or any electronic devices to be used or seen during times of examination. Students may tape record lectures provided they do not disturb other students in the process.

Student Absences on Religious Holy Days: Students are allowed to miss class and other required activities, including examinations, for the observance of a religious holy day, including travel for that purpose. Students remain responsible for all work. *See Student Syllabus Guidelines*.

Students with Disabilities Policy: It is the policy of Sam Houston State University that individuals otherwise qualified shall not be excluded, solely by reason of their disability, from participation in any academic program of the university. Further, they shall not be denied the benefits of these programs nor shall they be subjected to discrimination. Students with disabilities that might affect their academic performance should visit with the Office of Services for Students with Disabilities located in the Counseling Center. *See Student Syllabus Guidelines*.

Visitors in the Classroom: Only registered students may attend class. Exceptions can be made on a case-by-case basis by the professor. In all cases, visitors must not present a disruption to the class by their attendance. Students wishing to audit a class must apply to do so through the Registrar's Office.

The Sam Houston Writing Center: The Sam Houston Writing Center provides one-on-one help with your writing assignments. The Center is open from 8 a.m. to 7 p.m. Monday through Thursday, 8 a.m. to 3 p.m. Friday, and 2-7 p.m. on Sunday. Currently, we are located in Wilson 114. Look for signs on campus announcing our new location in Farrington 111, when we are open in that location. It is not necessary to schedule an appointment; however, you may call 936-294-3680, twenty-four hours in advance to schedule one.

MATH 381 COURSE SCHEDULE (TENTATIVE)

WEEK OF	TOPIC	READINGS

Aug 20	Introduction, standards, problem-solving Process, Diagrams	Chapter 1
Aug 27	Systematic Lists Eliminate possibilities	Chapter 1 Supplemental materials
Sep 3	Labor Day Holiday Sept 3 (Monday) Guess & check	Supplemental materials
Sep 10	Logic Puzzles, Patterns	Supplemental materials
Sep 17	Patterns **Exam #1 (Sep 20)**	Supplemental materials
Sep 24	Recursion Algebraic patterns	Chapter 8 Supplemental materials
Oct 1	Discrete math intro Graph theory	Chapter 11.4 Supplemental materials
Oct 8 Oct 10	Graph theory, voting **Last day to drop w/o an F**	Supplemental materials
Oct 15	**Exam #2 (Oct 16)** Introduction to probability	Chapter 10
Oct 22	Fundamentals of probability	Chapter 10
Oct 29	Theoretical/experimental probability	Chapter 10 Supplemental materials
Nov 5	Probability/counting problems	Chapter 10 Supplemental materials
Nov 12	Probability review **Exam #3 (Nov 15)**	
Nov 19	Graphs, Central tendency Thanksgiving holiday Nov. 22	Chapter 9
Nov 26	Dispersion	Chapter 9
Dec 3	Distributions Last class day Dec 6th	Chapter 9

Final Exams: MTH 381-03 – December 11, 2-4 PM