COURSE SYLLABUS for
Math 386 Summeer I 2008
Fundamentals of Probability and Statistics

CLASSROOM AND SCHEDULE: **MTuWThF   8:00-9:50**
Lee Drain Building, Room 402

INSTRUCTOR: Dr. Max Coleman
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Office Hours: Mon.- Thur, 12:00-1:00
Others by appointment

COURSE DESCRIPTION:

This course focuses on developing strong backgrounds in statistics and probability for pre-service mathematics teachers at grades 4-8. Students are expected to practice communications skills and participate in hands-on activities, including the use of mathematics manipulatives and technology. Students will also participate in class discussions and group work during this course. Topics will include National and Texas standards for teaching mathematics, statistics activities, and probability activities. Prerequisite: Math 285 with a grade of C or better. 3 semester hours.

COURSE OBJECTIVES:

Upon completion of this course, students will be able to:

- Organize and display data in a variety of formats (e.g., tables, frequency distributions, stem-and-leaf plots, box-and-whisker plots, histograms, pie charts)

- Support arguments, make predictions, and draw conclusions using summary statistics and graphs to analyze and interpret one-variable statistics

- Demonstrate an understanding of measures of central tendency (e.g., mean, median, mode) and dispersions (e.g. range, interquartile range, variance, and standard deviation)

- Explore concepts of probability through data collection, experiments, and simulations

- Generate, simulate, and use probability models to represent a situation

- Solve a variety of probability problems using combinations, permutations, and geometric probability (i.e., probability as the ratio of two areas)

- Use the normal distribution to solve problems

- Demonstrate an understanding of random samples, sample statistics, and population parameters

- Apply knowledge of the use of probability to make observations and draw conclusions from single variable data and to describe the level of confidence in the conclusion

- Make inferences about a population using the normal distributions

- Demonstrate an understanding of the use of techniques such as scatter plots, regression lines, correlation coefficients, and residual analysis to explore bivariate data and to make and evaluate predictions.

TEXT AND MATERIALS:

Moore, D. (2003). *The Basic Practice of Statistics (3rd Edition).* New York: W.H. Freeman and Company.
A graphing calculator is **required** for this course. A TI-84 is highly recommended.
Supplemental materials provided by the instructor.

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.
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. A score of zero will be given for any missed exam. 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.

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.

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
80 – 89	B
70 – 79	C
60 – 69	D
0 - 59	F

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.

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MATH 386 COURSE SCHEDULE (TENTATIVE)

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TOPIC	READINGS
Standards	Supplemental material
Picturing data	Chapter 1
Describing data numerically	Chapter 2
Normal Distribution	Chapter 3
Exam #1 June 11`	
Correlation	Chapter 4
Regression	Chapter 5
Sampling	Chapter 8
Exam #2 June 20	
Probability	Chapter 10 and 12
Sampling Distributions	Chapters 11
Binomial Distribution	Chapter 13
Confidence intervals	Chapter 14
Tests of Significance	Chapter 15
Exam #3 July 1	