

Office: FEM 3
Office HRS: M-W 9:30-10:30 or by appointment.
Online Office HRS: Most Saturdays 8:00-10:00 AM
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Math 45-56282: Contemporary Mathematics

Text: Thinking Mathematically, Blitzer, 4th ed., ISBN 0-13-175204-9

Prerequisite: MATH 103

Basic Skills Advisories: Eligibility for ENGL 125 and ENGL 126

Description

This course provides an introduction to mathematical problem solving in diverse areas of contemporary life such as statistics, social choice, measurement, and management science for students in the arts, humanities, and social sciences.

Face to Face Meeting Dates

August 23, 2008	Saturday	9:00-11:00 AM	Orientation
October 4, 2008	Saturday	9:00-11:00 AM	Midterm Exam 1
November 15, 2008	Saturday	9:00-11:00 AM	Midterm Exam 2
December 13, 2008	Saturday	9:00-11:00 AM	Final Exam

All Face to Face Meetings will take place at the Willow/International campus unless prior arrangements have been made.

Tips for success: Observe course deadlines, pace yourself, do not procrastinate, be organized and self-motivated, and stay current on all assignments.

Important Dates

September 5, 2008	Friday	Last day to register for a full-term fall class
September 5, 2008	Friday	Last day to drop a fall full-term class to avoid a "W"
September 19, 2008	Friday	Last day to change a class to/from Pass/No Pass
October 17, 2008	Friday	Last day to drop a full-term class to avoid a grade

Computer Requirements:

- Your computer must be a PC, not a MAC
- Use Windows 98, 2000, ME, NT or XP (any of these platforms will work)
- Internet Explorer 5.5 through 6.0 (Any in that range). The program for the course will not support Netscape.
- 64 MB RAM memory or more
- Resolution of 1024 x 768 or higher
- Internet Connection: Cable/DSL, T1 or other high-speed connection. You can use dial-up with a minimum of a 56K modem, but this will greatly limit the material and resources you can access online for the course.

Grading

Scale: **A** 90-100% **B** 80-89% **C** 70-79% **D** 60-69%

Homework assignments are completed online and the assignments can be found at the Course Compass website (<http://www.coursecompass.com>). You may work ahead if you like; all homework for the entire course is now available to the student. It is important to stay current to be successful in the course! The program is set up so that you must complete all the homework of a chapter with at least 70% success to be able to take the chapter exam. **Do not expect to take the exam and then complete the homework.** Each assignment has a due date and the assignment will be unavailable to the student after the due date. **No late homework will be accepted.** Online homework will account for 10% of your grade.

Note: When working on homework, you do not have to complete an entire assignment during one session. If you need to stop while in the middle of an assignment, simply hit the Submit icon and the program will save your work. You can then come back to the assignment and continue from where you left off at another time.

Online Tests: There will be one online test given for each chapter of material covered in the course. All online tests are available as of the start of the semester. However, each test has a deadline and each test will cease to be available after its deadline. Online Tests will account for 15% of your grade.

Note: The system will not allow you to take the exam unless you have completed all homework for that chapter with at least 70% success. Once you begin the exam you will have 90 minutes to complete it. After the 90 minutes have expired the exam will no longer be available to you. **It is not possible to stop the exam and return to it later!**

Midterm / Final Exams: Students will need to present a valid picture I.D. in order to take each exam. There will be two Midterm Exams and a Final. Each Exam has a two hour time limit. All significant work needs to be shown for each problem in order to receive full credit. Exams will account for 75% of your grade.

There is no extra credit.

***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.*

Please refer to SCCCD policies for guidance on all matters relating to this course.

Academic Dishonesty

Cheating is the act or attempted act of taking an examination or performing an assigned, evaluated task in a fraudulent or deceptive manner, such as having improper access to answers, in an attempt to gain an unearned academic advantage. Cheating may include, but is not limited to, copying from another's work, supplying one's work to another, giving or receiving copies of examinations without an instructor's permission, using or displaying notes or devices inappropriate to the conditions of the examination, allowing someone other than the officially enrolled student to represent the student, or failing to disclose research results completely.

Plagiarism is a specific form of cheating: the use of another's words or ideas without identifying them as such or giving credit to the source. Plagiarism may include, but is not limited to, failing to provide complete citations and references for all work that draws on the ideas, words, or work of others, failing to identify the contributors to work done in collaboration, submitting duplicate work to be evaluated in different courses without the knowledge and consent of the instructors involved, or failing to observe computer security systems and software copyrights. Incidents of cheating and plagiarism may result in any of a variety of sanctions and penalties, which may range from a failing grade on the particular examination, paper, project, or assignment in question to a failing grade in the course, at the discretion of the instructor and depending on the severity and frequency of the incidents.

Objectives

In the process of completing this course, students will:

- A. Solve problems from the area of management science by means of linear programming
- B. Derive the probability of succeeding at basic games of chance
- C. Describe statistical data in a variety of methods as in using mean, median, and standard deviation
- D. Use the empirical numbers to answer statistical questions
- E. Measure the rate of growth of different systems, example: linear vs. exponential growth
- F. Characterize and compare different voting systems, using plurality, borda count, or pair-wise comparison
- G. Find the apportionment of a finite number of items
- H. Use various procedure to divide items fairly
- I. Find the terms of a sequence and series
- J. Create geometric shapes using recursive construction rules

Course Outline

- A. Mathematics of Social Choice
 - a. The Mathematics of Voting
 - b. Weighted Voting Systems
 - c. Fair Division
 - d. Apportionment
- B. Management Science
 - a. Euler Circuits
 - b. Hamilton Circuits
 - c. Networks
 - d. Scheduling
- C. Growth & Symmetry
 - a. Spiral Growth & Fibonacci's Numbers
 - b. Linear & Exponential Growth
 - c. Symmetry
 - d. Fractals
- D. Statistics & Probability
 - a. Collecting Data
 - b. Descriptive Statistics
 - c. Normal distributions
 - d. Probability