

Syllabus for Math 105 - Mathematical Ideas in Contemporary Society

College of St. Catherine, Spring 2003

Instructor: O'Loughlin, djoloughlin@stkate.edu
Course Webpage: <http://www.stkate.edu/~loughlin/math105/>
Office: Mendel 414B, ph. 651-690-6634
Time/Place: MWF 9:35-10:40 am in Mendel room 412 for Section A
MWF 10:55-noon in Mendel room 312 for Section B
Office Hours: MWTh 3:00-4:00 pm, Tu 9:30-11:30 am, and by Appt.
Text/Supplies: • *Excursions in Modern Mathematics* by Tannenbaum and Arnold
• a calculator (e.g. TI-81, 82, etc.)

Course Content: the description from the College Catalog describes Math 105 as “An examination of mathematical ideas and insights that permeate society and influence modern thinking. The course topics will derive from areas including decision making, geometry and measurement, statistics and data analysis, and management science. Other topics may be included depending on current interests of instructor and students. Prerequisites: First-year high school algebra and geometry and appropriate level on mathematics/statistics placement assessment. MATH105 does not serve as a preparation for any other mathematics course.”

Exams and Grading: Grading is explained in the chart below. In terms of attendance, you are expected to be in class every time we meet, and I will take attendance. You are also expected to participate in any and all class discussions in a thoughtful and considerate manner. There will be three midterm exams and one comprehensive final exam.

Grade Component	Points	Percent
Three Midterm Exams	300	30%
Quizzes and HW	300	30%
4 Writing Assignments	80	8%
Project	60	6%
Attendance/Participation	60	6%
Final Exam	200	20%
Total	1000	100%

Quizzes and HW: You will have some combination (decided by class vote) of 16 quizzes and HW assignments which will total 300 points (I will throw out the lowest quiz, and each of the remaining 15 will be worth 20 points each). The quizzes will always be announced at least one class period in advance, however if you miss class it is your responsibility to find out whether or not there will be a quiz during the next class. There will be no make-up quizzes, so if you miss a quiz that will be the quiz which I throw out. All HW assignments are due at the beginning of class. Late assignments will not be accepted except in rare circumstances, and in which case 20% will be deducted from the grade on the late assignment for every day it is late. You will also have four writing assignments of roughly 1-2 pages. These will consist of reviews of articles pertaining to the class. These articles will be placed on reserve at the library, and a list will also be distributed in class.

Homework: A diligent student should do enough homework. This may sound cryptic, but the intended meaning is that a student should do homework until a concept is clear— not only in theory, but also in practice. I will choose a representative set of exercises from each section to be handed in and graded. You should view the assigned problems as the MINIMUM amount of problems a student should do to succeed in this course. However, the amount of homework that you do should be determined by your understanding, and not by what I assign.

Incompletes: You may receive an incomplete **only** if you have completed nearly all of the course requirements at a level of grade C- or better, and some severe unexpected event prevents you from finishing the course.

Tentative Semester Schedule

Day	Date	Sections (topics) Covered
Monday	Jan. 27	Chapter 1 - The Mathematics of Voting
Wednesday	Jan. 29	
Friday	Jan. 31	
<i>Comments:</i>	Chapter 1 Problems	- # 3, 5, 6, 9, 13, 15, 18, 22, 26, 33, 40, 42, 44, 48, 50, 51, 54, 60
Monday	Feb. 3	Chapter 2 - Weighted Voting Systems
Wednesday	Feb. 5	
Friday	Feb. 7	
<i>Comments:</i>		
Monday	Feb. 10	Chapter 3 - Fair Division
Wednesday	Feb. 12	
Friday	Feb. 14	
<i>Comments:</i>		
Monday	Feb. 17	Chapter 4 - The Mathematics of Apportionment
Wednesday	Feb. 19	
Friday	Feb. 21	First Midterm exam on Part I, chapters 1-4
<i>Comments:</i>		
Monday	Feb. 24	Chapter 9 - Spiral Growth in Nature
Wednesday	Feb. 26	
Friday	Feb. 28	
<i>Comments:</i>		
Monday	March 3	Chapter 10 - The Mathematics of Population Growth
Wednesday	March 5	
Friday	March 7	
<i>Comments:</i>		
Monday	March 10	Chapter 11 - Symmetry
Wednesday	March 12	
Friday	March 14	
<i>Comments:</i>		
Monday	March 17	Second Midterm exam on Part III, chapters 9-11
Wednesday	March 19	Chapter 5 - Euler Circuits
Friday	March 21	End of Midterm Grading Period
<i>Comments:</i>		Two of the four review of articles are due by the end of this week

Day	Date	Sections (topics) Covered
Spring Break week of March 24-28		
Monday	March 31	Chapter 6 - The Travelling Salesman Problem
Wednesday	April 2	
Friday	April 4	
<i>Comments:</i>		
Monday	April 7	Chapter 7 - The Mathematics of Networks
Wednesday	April 9	
Friday	April 11	
<i>Comments:</i>		
Monday	April 14	Chapter 8 - The Mathematics of Scheduling
Wednesday	April 16	
Friday	April 18	NO CLASS Good Friday
<i>Comments:</i>		
Monday	April 21	NO CLASS Easter Monday
Wednesday	April 23	
Friday	April 25	Third Midterm exam on Part II, chapters 5-8
<i>Comments:</i>		
Monday	April 28	Chapter 13 - Collecting Statistical Data
Wednesday	April 30	
Friday	May 2	Chapter 14 - Descriptive Statistics
<i>Comments:</i>		
		The third and fourth reviews of articles are due by this day
Monday	May 5	
Wednesday	May 7	Selected Topics from chapters 15 and 16
Friday	May 9	
<i>Comments:</i>		
Tuesday	May 13	FINAL EXAM - 8 - 10 am Section B
Wednesday	May 14	FINAL EXAM - 10:30 am - 12:30 pm Section A