MAT 183 - Elements of Modern Mathematics
Syllabus for Summer 2014

MoTuWeTh 2:00PM - 4:25PM

Course Instructor	**email**	**office**
James J. Heffers	jjheffer@syr.edu	Carnegie 400

Course Description: This course is designed for students in the School of Management. The course will involve no calculus, and a thorough background in high school mathematics is the only prerequisite. The course has three main components: Linear Algebra, Probability & Statistics, and the Mathematics of Finance.

Text: Goldstein, Schneider, and Siegel (2004). *Finite Mathematics and its Applications* (2nd custom ed.). Prentice Hall, Custom Edition for Syracuse University.

Calculator: This course involves extensive use of the TI-84 graphing calculator. Each student is required to own a TI84 calculator. The calculator will prove to be an indispensable tool throughout the course, particularly in the Mathematics of Finance component. Since the TI84 will be useful, if not essential, for virtually every topic, it is important to familiarize yourself with the calculator as soon as possible. Though the main techniques will be demonstrated in class, it is up to you to become proficient with the calculator on your own. **The TI-84 is the only calculator that may be used on a test** without prior approval from your instructor. **In particular, calculators on cell phones are not to be used on tests or quizzes.**

Quizzes and Homework: There will be frequent quizzes, as needed. Homework will be assigned daily as needed. While homework will not be collected, quizzes and exams will closely reflect the assigned problems.

Attendance and Class Preparation: Students are expected to attend every lecture and every recitation and are responsible for any announcements made during lecture. Students should read the appropriate sections of the text before the class in which the material is presented.

Tests: A missed exam, **with a valid excuse,** can be must be made up by the end of the fourth class following the exam. Otherwise, it will become a zero.

DO NOT PLAN TO LEAVE TOWN BEFORE JUNE 26!

HELP! The main lecturer will hold regular office hours. The times and places will be listed on Blackboard. In addition, the Mathematics Department offers regular math clinics. A schedule of clinic hours will be available in the math office, 215 Carnegie and on the math website: math.syr.edu.

Problems: These should be resolved with your instructor. Problems that cannot be resolved with your instructor should be referred to the **course supervisor,** Prof. Andrew Vogel; alvogel@syr.edu

Learning Outcomes:
- The ability to select an appropriate mathematical model for a given real world problem;
- The ability to understand and enunciate the limitations of conclusions drawn from mathematical models;
- The ability to effectively use appropriate mathematical technology;
- A mastery of the basic properties of matrices and the ability to solve simple matrix equations;
- A mastery of the basic properties and formulas of probability and statistics and the ability to compute simple probabilities in a statistical setting and to interpret the results;
- A mastery of the basic formulas from the mathematics of finance and the ability to apply these formulas in a variety of settings that arise in personal finance.

Grading Policy

The grade for this course will primarily be based on the student's performance on the three tests and the final.

Test 1: Linear Algebra & Counting	25%		
Test 2: Probability & Statistics	25%	Quizzes	15%
Test 3: Markov Processes & Finance	25%	Participation	10%

Test and Exam scores will NOT be curved. Letter grades will be assigned as follows:

A	93-100%	B+	87-89%	C+	77-79%	D	65-69%
A-	90-92%	B	83-86%	C	73-76%	F	0-64%
		B-	80-82%	C-	70-72%		

College and Department Policy Statements

Getting Help: Your instructor and recitation instructor will be holding regular office hours and will make appointments with students having class conflicts with their scheduled office hours. In addition, the Mathematics Department offers regular math clinics. These will be set up by the second week of the semester and a schedule of the clinics will be posted outside the math office.

Cell Phones: All electronic devices other than the calculator should be turned off and put away during class. Calculators on cell phones are not to be used on tests or quizzes.

Students with Disabilities: If you believe that you need accommodations for a disability, please contact the Office of Disability Services (ODS),
http://disabilityservices.syr.edu,
located in Room 309 of 804 University Avenue, or call (315) 443-4498 for an appointment to discuss your needs and the process for requesting accommodations. ODS is responsible for coordinating disability-related accommodations and will issue students with documented disabilities Accommodation Authorization Letters, as appropriate. Since accommodations may require early planning and generally are not provided retroactively, please contact ODS as soon as possible. You are also welcome to contact me privately to discuss your academic needs although I cannot arrange for disability-related accommodations. Making arrangements with ODS takes time. Do not wait until just before the first test.

Academic Integrity: The Syracuse University Academic Integrity Policy holds students accountable for the integrity of the work they submit. Students should be familiar with the Policy and know that it is their responsibility to learn about instructor and general academic expectations with regard to proper citation of sources in written work. The policy also governs the integrity of work submitted in exams and assignments as well as the veracity of signatures on attendance sheets and other verifications of participation in class activities. Serious sanctions can result from academic dishonesty of any sort. For more information and the complete policy, see

http://academic integrity.syr.edu

Religious Observances Policy: SU religious observances policy recognizes the diversity of faiths represented among the campus community and protects the rights of students, faculty, and staff to observe religious holidays according to their tradition. Under the policy, students are provided an opportunity to make up any examination, study, or work requirements that may be missed due to are religious observance provided they notify their instructors before the end of the second week of classes. For fall and spring semesters, an online notification process is available through MySlice (Student Services -> Enrollment -> My Religious Observances) from the first day of class until the end of the second week of class.
Related link: http://supolicies.syr.edu/studs/religious_observance.htm

Tentative Calendar
This calendar is subject to change.

	Mon	Tues	Wed	Thu
Week 1	**5/19**	**5/20**	**5/21**	**5/22**
	2.1, 2.2	2.3, 2.4	2.4, 2.6	5.2,5.3
Week 2	**5/26**	**5/27**	**5/28**	**5/29**
	5.4,5.5	5.5,5.6	Review	TEST # 1
Week 3	**6/2**	**6/3**	**6/4**	**6/5**
	6.1,6.2	6.3,6.4	6.5/6.6	7.1-7.3
Week 4	**6/9**	**6/10**	**6/11**	**6/12**
	7.3-7.5	7.6,7.7	Review	TEST # 2
Week 5	**6/16**	**6/17**	**6/18**	**6/19**
	8.1	8.2	8.3	10.1,10.2
Week 6	**6/23**	**6/24**	**6/25**	**6/26**
	10.3	10.3,10.4	Review	TEST # 3

IMPORTANT DATES

Financial deadline for dropping courses:	May 26
Academic drop deadline:	June 10
Withdrawal deadline:	June 19
Last day of classes:	June 26

The following exercises from the text are selected to help the student understand the material.

Linear Algebra

2.1	17, 19, 25, 27, 31, 37, 38
2.2	9, 15, 23, 26, 27, 30, 35, 36
2.3	7, 15, 17, 21, 26, 33, 37, 43, 46, 47, 49, 51
2.4	11, 15, 16, 17, 19, 27, 31
2.6	5, 7, 8, 12, 13, 16, 19

Counting

5.2	2, 3, 5, 9, 11, 13, 15, 17
5.3	5, 7, 13, 15, 17, 19, 23, 25, 41, 43, 45
5.4	11, 17, 19, 23, 24, 25, 31, 33, 37, 52*
5.5	5, 7, 11, 21, 25, 27, 32, 34, 38, 41, 52, 59, 76
5.6	1, 3, 5, 7, 9, 10, 11, 17, 19, 23, 30, 31, 36, 46

Probability

6.2	1, 3, 7, 9, 11, 15, 19, 24
6.3	2, 3, 4, 7, 10, 17, 19, 23
6.4	1, 3, 9, 13, 15, 17, 19, 21, 22, 35, 36
6.5	1, 2, 3, 4, 6, 7, 10, 12, 13, 15, 17, 22, 23, 30, 39
6.6	4, 6, 7, 8, 13, 15, 20, 24

Statistics

7.2	1, 7, 9, 10, 22
7.3	1, 3, 5, 7, 10, 12, 19
7.4	2, 9, 10, 11, 12, 16, 24, 26
7.5	1, 3, 7, 8, 11, 12, 13
7.6	1, 3, 5, 7, 25, 26, 31, 33

Markov Processes

8.1	1, 7, 9, 10, 11, 13, 14, 15
8.2	1, 5, 7, 14, 15, 16, 18
8.3	3, 5, 7, 12, 13, 14, 15, 16, 17

Mathematics of Finance

10.1	1, 4, 6, 8, 11, 15, 19, 23, 37, 40, 49
10.2	1, 4, 7, 9, 11, 14, 17, 19, 21, 25, 27*, 36, 41
10.3	1, 2, 3, 5, 7, 11, 17, 20, 21, 27
10.4	3, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38, 42, 44, 46, 48