

**MAT 183 Elements of Modern Mathematics, Summer  
Session II 2013**

**Instructor** : Dr. G. C. Verchota, Professor of Mathematics  
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**Examinations:** There will be two 1-hour exams during the semester and a final exam.

**Exam 1**, Thursday, July 11

**Exam 2**, Thursday, July 25

**Final Exam:** Thursday, August 8

**Grade:** Each hour exam counts 25%, the final counts 25% and the remaining 25% is based on quizzes and any homework assigned to be turned in.

**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 (2010). *Finite Mathematics and its Applications* (2<sup>nd</sup> 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 or the final exam** without prior approval from your instructor. **In particular, calculators on cell phones are not to be used on tests or quizzes.**

**Quizzes and Homework:** Quizzes based on the assigned exercises below will be given regularly. **There will be NO makeup quizzes.** A missed quiz will have a score of zero. A number of the lowest quiz scores will be dropped.

**Attendance and Class Preparation:** Students are expected to attend every lecture 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:** There will be NO makeup tests. For students with an EXCUSED absence, the portion of the final exam corresponding to the missed test will be substituted for the missing score.

### **University and Department Policy Statements**

**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>

## EXERCISES

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,
- 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,
- 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,
- 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,  
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### 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,  
34, 36, 38, 42, 44, 46, 48

