

## MAT 183 Elements of Modern Mathematics Spring 2013

**Instructor** : Professor Muhammed ALAN  
**Office** : Carnegie 219B  
**Tel** : 315-443-2549  
**Office Hours** : Monday, Wednesday, Friday 10:40AM-11:20AM  
**Email** : malan@syr.edu

**Examinations:** There will be two exams during the semester and a departmental final exam.

**Exam 1**, Friday, February 15,

**Exam 2**, Friday, April 12,

**Final Exam:** Monday May 6, 2 hour exam, between the hours of 8:00 and 2:30PM.

**Recitation Grade:** 15% of your grade comes from recitation. This grade will be based on short quizzes and homeworks.

**Quizzes:** Quizzes will be given in recitation hours. See the schedule in the departmental syllabus. There will be no make-up for missed quizzes, but to allow for emergencies, you may miss up to three quizzes. If you take all the quizzes, your lowest two scores will be dropped.

**Homework:** We will use the online system [www.webassign.net](http://www.webassign.net) for HW. Following day after the class I will assign HW. They will be discussed during the following week's recitations and will be due at 11:59pm on the Sunday of that week.

**IMPORTANT:** If you will miss a test due to a religious obligation, you must notify me using an official notification form (from MySlice) by January 25!

**Before Sending an Email:** Check whether the answer to your question is already posted at blackboard, in the syllabus, or in an earlier email.

# MAT 183 - Elements of Modern Mathematics Syllabus for Spring 2013

**Course Instructor:** Professor Muhammed Ali ALAN  
malan@syr.edu                      219B Carnegie                      443-1479

**Office Hours:** Carnegie 219B  
Monday, Wednesday, Friday 10:40AM-11:20AM

**Course Supervisor:** Professor Jeffrey Meyer  
jlmeye01@syr.edu                      206F Carnegie                      443-1479

Please inform your instructor first of any problems you have. Problems not satisfactorily resolved with your instructor should be brought to the attention of the course supervisor without delay.

	Section Number	DAYS	START		END	ROOM	BUILDING	INSTRUCTOR
34124	100	MWF	9:30	-	10:25	STOLK	P.B.	ALAN
34126	101	T	9:30	-	10:25	120	CARN	HEINER
35218	102	H	9:30	-	10:25	120	CARN	HEINER
38420	103	T	5:00	-	5:55	208	CARN	tba
34128	104	H	5:00	-	5:55	208	CARN	tba
34130	105	T	3:30	-	4:25	316	CARN	FAN
37192	106	H	3:30	-	4:25	316	CARN	HEINER
53132	200	MWF	11:40	-	12:35	AUD	GRANT	ALAN
53429	201	T	8:25	-	9:20	306	CARN	tba
53430	202	H	8:25	-	9:20	306	CARN	tba
53435	203	T	11:00	-	11:55	120	CARN	FAN
53436	204	H	11:00	-	11:55	120	CARN	FAN
53437	205	T	2:00	-	2:55	316	CARN	HEINER
53438	206	H	2:00	-	2:55	316	CARN	HEINER

**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:** There will be *regular quizzes* in the recitation sections. *Homework will be done online* using WebAssign. You are required to purchase your entry code for this online system – it is bundled with the custom edition of the text. WebAssign problems for a section open the day that section is covered in class; they will be discussed during the following week’s recitations and will be due at 11:59pm on the Sunday of that week. Extensions of one week for illness or family problems are automatic; further extensions only for DOCUMENTED EXTENDED ILLNESSES. However, you need to ask for the extension **before Friday 5PM**. If there need to be adjustments due to changes in the lecture schedule these will be announced and reflected in the due dates on WebAssign. **There will be NO makeup quizzes.** A missed quiz will have a score of zero and the lowest two quiz scores will be dropped. The instructions for how to initiate your WebAssign access are at the end of this document.

The Class Key for WebAssign: syr 3274 6985

**HELP!** The main lecturer and your recitation instructor will hold regular office hours. In addition, the Mathematics Department offers regular math clinics. These will start the second week of classes and will be held in the reading room of Carnegie. A schedule of clinic hours will be available in the math office (215 Carnegie).

**You should see your recitation instructor or your class instructor for questions requiring explanations about problems, concepts etc.; such question cannot be taken care of by email.**

**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. **All electronic devices other than the calculator should be turned off and put away during class – including laptop computers.**

**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. The FINAL EXAM will be given on **Monday May 6 sometime between 8:00am and 2:30pm. Every student must take the exam at that time - no exceptions!**

**DO NOT PLAN TO LEAVE CAMPUS BEFORE MAY 6 at 2:30pm!**

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

Exam 1	25%	Final Exam	35%
Exam 2	25%	Quizzes	06%
		Homework	09%

**Test and Exam scores will be curved! No curve at the end of the semester.** Letter grades will be assigned as follows:

A	92-100%	B+	88-89%	C+	78-79%	D	60-69%
A-	90-91%	B	82-87%	C	72-77%	F	0-60%
		B-	80-81%	C-	70-71%		

### **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.

**Tentative Lecture Calendar**  
(Exam dates are firm, not tentative)

<b>Monday</b>	<b>Sections</b>	<b>Wednesday</b>	<b>Sections</b>	<b>Friday</b>	<b>Sections</b>
Jan. 14	2.1	Jan. 16	2.1, 2.2	Jan. 18	2.2, 2.3
Jan. 21	<b>NO CLASS</b>	Jan. 23	2.3, 2.4	Jan. 25	2.4, 2.6
Jan. 28	2.6	Jan. 30	5.2, 5.3	Feb. 1	5.4
Feb. 4	5.5	Feb. 6	5.6	Feb. 8	6.1
Feb. 11	<b>Catch up/ Review</b>	Feb. 13	<b>Review</b>	Feb. 15	<b>Exam 1</b>
Feb. 18	6.2	Feb. 20	6.3	Feb. 22	6.4
Feb. 25	6.5	Feb. 27	6.6	Mar. 1	6.6
Mar. 4	7.1	Mar. 6	7.2	Mar. 8	7.3
Mar. 11	<b>Vacation</b>	Mar. 13	<b>Vacation</b>	Mar. 15	<b>Vacation</b>
Mar. 18	7.4	Mar. 20	7.5	Mar. 22	7.6
Mar. 25	7.7	Mar. 27	7.7	Mar. 29	8.1
Apr.1	8.2	Apr. 3	8.3	Apr. 5	10.1
Apr. 8	<b>Catchup/ Review</b>	Apr. 10	<b>Review</b>	Apr. 12	<b>Exam 2</b>
Apr. 15	10.2	Apr. 17	10.3	Apr. 19	10.4
Apr. 22	10.4	Apr. 24	<b>Review</b>	Apr. 26	<b>Review</b>
Apr. 30	<b>Review, Last Class</b>				
Monday, May 6	<b>Final Exam</b>				

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<b>Week starting</b>	<b>Activities</b>	<b>Quiz</b>
January 14	Matrices on the TI84	No Quiz
January 21	Review 2.1-2.2	Quiz 1, Matrices on TI84
January 28	Review 2.3 -2.6	Quiz 2, Matrices 2.1-2.2
February 4	Review 5.2-5.4	Quiz 3, Matrices 2.3 -2.6
February 11	Review Exam I	No Quiz
February 18	Review 5.5, 5.6, 6.1	Quiz 4, Counting 5.2-5.4
February 25	Review 6.2-6.4	Quiz 5 5.5, 5.6, 6.1
March 4	Review 6.5-6.6	Quiz 6, 6.2-6.4
March 11	Vacation	Vacation
March 18	Review 7.1-7.3	Quiz 7 6.5-6.6
March 25	Review 7.4-7.6	Quiz 8 7.1-7.3
April 1	Review 7.7-8.1	Quiz 9, 7.4-7.6
April 8	Review Exam II	No Quiz
April 15	Review 8.2, 8.3, 10.1	Quiz 10, 7.7-8.1
April 22	Review 10.2-10.4	Quiz 11, 8.2, 8.3, 10.1

## 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://academicintegrity.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 a 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](http://supolicies.syr.edu/studs/religious_observance.htm)

**If you will miss a test due to a religious obligation, you must notify me using an official notification form (from MySlice) by January 25!**

## EXERCISES

The following exercises from the text are selected to help the student understand the material. Problems in WebAssign will be similar to problems in this list.

### 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

## **WebAssign Registration Instructions for MAT 183-001 Spring 2013**

1. Go to [www.webassign.net](http://www.webassign.net).
2. Click on **LOG IN** on the left side of the page.
3. Click on **I HAVE A CLASS KEY**.
4. Enter the class key by entering **SYR** in the first box, **3274** in the second box, and **6985** in the third box; then click **SUBMIT**.
5. Make sure you see my name there (Muhammed ALAN) and then click on **Yes, this is my class**.
6. Select **I need to create a WebAssign account**.
7. Enter a user name and password of your choice, enter the required identifying information. Then click on **Create my Account**.
8. The next page confirms your information, so click on **Log In Now**.
9. You should be logged in now. Select **Purchase an access code online** if you need one, or if you have one with your new textbook that you purchased at the SU book store, you can click on the left hand button to enter that.  
  
Or, you can continue for about 10 more days until you are able to get an access code (if you plan on getting it with a new textbook, for example).