

MAT135Y (Calculus I)
(formally known as MAT135Y1 Y)
2009-2010
Course Outline

Department of Mathematics
University of Toronto

COURSE DESCRIPTION:

This is a first-year Calculus course containing some applications to the Sciences. In general, theorems will be stated precisely, mostly without proofs but with an indication of the mathematical ideas involved. The topics to be covered in this course include: Review of Trigonometry, Limits, Differentiation, Applications (Problems related to Curve Sketching, Optimization, Related Rates, Exponential Growth and Decay, etc.), Integration and the Fundamental Theorem, Techniques of Integration, Applications (Areas, Volumes, Arc Lengths, etc.), Introduction to Differential Equations and their Applications (Predator-Prey Systems, Models for Population Growth, etc.), Sequences and Series, Taylor Series.

TEXT:

Calculus (Single Variable, Early Transcendentals version) - 6th edition - by James Stewart
(Publishers: Thomson, Brooks/Cole)

REFERENCES:

Student Solutions Manual for the above textbook (Very highly recommended!)

Note:

Throughout the academic year, it will be assumed that you have either bought the *Textbook (6th edition)* and the *Student Solutions Manual* or will be able to borrow them from a friend of yours on a weekly basis.

The University Bookstore is selling the *Textbook* and the *Student Solutions Manual* together as a "Special Value Package", which also comes with eBook and WebAssign, allowing you to go to the Web to read the textbook and do extra practice problems. It is **not** necessary at all for you to use WebAssign if you don't want to; it is just an extra tool. You don't actually need WebAssign for MAT135Y.

LECTURES:

All MAT135Y students must enrol in one Lecture section. Every Lecture section has 3 hours of lecture per week. Lectures will start on September 9, 2009. If you need to enrol in a Lecture section, or if you want to change your Lecture section, please use the SWS (Student Web Service). Do not come to the Mathematics Departmental Office. The last day to change a Lecture section is September 15, 2009. If you want to enrol in a Lecture section or change your Lecture section after the deadline of September 15, you must go to your College Registrar, no later than September 22, to make a special request, which may or may not be granted!

The MAT135Y Lecture sections are as follows:

Lecture section	Time	Location	Instructor
L0101	MWF9	BA1160	Andres del Junco
L0102	MWF9	SS2118	Hugo Parlier
L0201	MWF12	RW 110	Lindsey Shorser
L0301	MWF1	MP 103	Ying Zong (first term) Barry Rowe (second term)
L0401	TRF10	MP 103	Anthony Lam
L0501	T10 ,R10 F12	SS2117 SS2117	Magdalena Czubak
L0601	T10 ,R10 F1	SS1087 SS1087	Benoit Jacob
L0701	T12-2 R12	SS2118 SS2118	Emile LeBlanc
L0801	W3 F2-4	MP 103 MP 103	Anthony Lam
L5101	R6-9	PB B250	Emile LeBlanc
L5102	R6-9	LM 161	Gideon Amir

TUTORIALS:

All MAT135Y students must enrol in one Tutorial section. Tutorial attendance is compulsory, in the sense that you will have to write Quizzes in the tutorials. Note that you can only pick a Tutorial time, e.g., T0101 (Monday 4 p.m.), T0401 (Friday 2 p.m.), etc., not the Tutorial section itself. If you need to pick a Tutorial time, or if you want to change your Tutorial time, you may do so by using the SWS, until September 15. An official Computer Printout, showing student numbers, Tutorial sections assigned and Tutorial rooms, will be posted on the MAT135Y Notice Board on the ground floor of Sidney Smith

Hall, on Friday, September 25. Note that you must attend your official Tutorial section as shown on the Computer Printout on the Notice Board. Please see the last page of this Course Outline for the exact location of the MAT135Y Notice Board. Note that the Computer Printout will also be posted on the MAT135Y Website: <http://www.math.utoronto.ca/lam/> You should remember your Tutorial Code, e.g., Tutorial M4A (Monday 4 p.m., section A), Tutorial T5C (Tuesday 5 p.m., section C), Tutorial R5E (Thursday 5 p.m., section E), etc. You will have to write your Tutorial Code and the name of your TA on your test papers.

THURSDAY NIGHT LECTURE SECTIONS:

Students enrolled in a Thursday night Lecture section (e.g., L5101, L5102. etc.) must also enrol in one of the Tutorial sections listed in the Timetable. Please see the previous paragraph for more information about Tutorial enrolment.

LATE ENROLMENTS AND LATE CHANGES IN TUTORIALS:

Tutorial change is not allowed once a student has been assigned to a Tutorial section. Exceptions will be given only to those students who have a verifiable time-table conflict with another course. Such students, as well as those who enrol in MAT135Y after the September 22 deadline, must see Anthony Lam (the course administrator) in his office (BA6125) on Friday, September 25 (anytime between 12:30 p.m. and 1:45 p.m. or anytime between 4:30 p.m. and 6 p.m.), or during one of his office hours (to be posted outside his office) on or after Monday, September 28.

MORE INFORMATION ABOUT THE TUTORIALS:

The duration of each Tutorial is 50 minutes. Tutorials meet once a week and will start the week of September 28. The purpose of the tutorials is to give you a chance to ask questions. If you have difficulty with the lecture material or the Problem Sets, you should ask the TA in your tutorial. Each Tutorial starts 10 minutes past the hour and ends on the hour. You must arrive at your correct tutorial room no later than 5 minutes after the start of the tutorial, i.e. no later than 15 minutes past the hour.

MARKING SCHEME:

The Term Mark will be computed as follows:

Quizzes	10%
Term-test 1	30%
Term-test 2	30%
Term-test 3	<u>30%</u>
Term Mark	100%

In addition, there will be a Final Exam, to be written in April. The Final Course Mark will be the weighted average of the Term Mark and the Final Exam Mark, the higher of the two being weighted 60% and the lower 40%.

PROBLEM SETS and QUIZZES:

Problem Sets (consisting of problems from the textbook) are given on p.8 and p.9. These do not have to be submitted for marking. However, students must do these weekly problems in order to prepare themselves for the Quizzes and Term-tests. Answers to the even-numbered assigned problems will be posted on the MAT135Y Notice Board periodically. The purpose of the Quizzes is not to "prepare the students for the Term-tests". Rather, they serve to encourage the students to do the homework problems and to come to the tutorials. Students should realize that the Quizzes give them an opportunity to earn 10 relatively easy marks. Each Quiz will consist of just one multiple-choice question. The Quiz questions will be very similar to the questions in the Problem Sets. All Quizzes (each lasting 5 to 10 minutes) are to be written in Tutorials during the weeks indicated on p.6 and p.7. Quizzes are to be written at the beginning of the tutorial (at precisely 15 minutes past the hour). If you arrive at the tutorial room later than 15 minutes past the hour, i.e. later than 5 minutes after the start of the tutorial, you will not be allowed to write the Quiz and will then get a zero for that Quiz.

Students must write their Quizzes in their official Tutorial. Anyone writing a Quiz in a wrong tutorial room will get a mark of zero. Students will be informed by their TA about the material to be covered in each Quiz. This information will also be posted on the MAT135Y Notice Board (and also on the MAT135Y Website), one week before each Quiz. There will be a total of 14 Quizzes throughout the year. For each Quiz, you will get a mark of 0 or 1. For each of you, we will count only the best 11 out of the 14 Quizzes that you write.

TERM-TESTS:

Term-test 1:	Wednesday , November 4, 2009 (6:10 p.m. to 7:40 p.m.)
Term-test 2:	Thursday , December 3, 2009 (6:10 p.m. to 7:55 p.m.)
Term-test 3:	Wednesday , March 3, 2010 (6:10 p.m. to 7:55 p.m.)

The locations for writing the Term-tests will be announced later. Term-test 1 and Term-test 3 will have both multiple-choice and non multiple-choice questions. Term-test 2 (basically a December exam) will be all "multiple-choice" and will cover all the material covered in the First term. NOTE: Books, notes, calculators and scrap paper are not allowed in Quizzes, Term-tests and the Final Exam.

MAKE-UP TESTS:

If you believe that you cannot write a Term-test because of special reasons, you should see Anthony Lam (the course administrator) in BA6125, to try to obtain special prior permission to skip the test. You must provide proper documentation. Such special permission will be given only for truly legitimate reasons (for example, you are on the university hockey team and have to go out of town for a competition the night of the MAT135Y test). Permission will NOT be given for reasons such as: "I have been extremely busy recently because of personal reasons and do not have enough time to prepare for the test", "I have three different tests on three consecutive days", "I have other tests on the day of the MAT135Y test (which however do not create a direct time conflict with the MAT135Y test)". Anyone who skips a Term-test without prior approval will get a zero for that test (unless absence is due to illness, properly documented). If you cannot show up for a test because of illness, you should submit your medical documentation to Anthony Lam no later than one week after the day of the test. All students who have missed a test because of illness or any other reason deemed legitimate by the course administrator will be required to write a make-up test. Information about the make-up test (date, time, location, format, etc.) will be posted on the MAT135Y Website the week after the regular test.

THE REPRISE PROGRAM FOR MAT135Y:

MAT135Y students who do poorly in Term-test 1 and Term-test 2 will be allowed to drop MAT135Y in December and take MAT125H1 in January 2010 and MAT126H1 in May 2010. MAT125H1 together with MAT126H1 is equivalent to MAT135Y. Note that you have to pay additional tuition fees for MAT126H1 (but not MAT125H1). To be eligible to enrol in MAT125H1, you must write Term-test 2 (MAT135Y) on December 3 and get a mark of 20% or above 20%. In late November, you will be provided with further information about how to enrol in MAT125H1. Enrolment deadline for MAT125H1 is January 10, 2010. Late enrolment will not be permitted. MAT125H1 will meet once a week, every Wednesday from 6 p.m. to 9 p.m., starting January 6, 2010. Last day of lecture is Wednesday, March 31, 2010. MAT126H1 will meet twice a week, every Tuesday and every Thursday from 6 p.m. to 10 p.m. (tutorial from 6 p.m. to 7 p.m. and lecture from 7 p.m. to 10 p.m.), starting sometime in mid-May, 2010 and ending at the end of June, 2010.

MATH AID CENTRES:

There are various Math Aid Centres throughout the campus. The one in Sidney Smith Hall is located at SS1071. Most probably, it will start operating around the middle of September. The hours of operation will be posted on the door of SS1071. If you have Math problems, you should visit one of these Math Aid Centres, where Math tutors will be able to help you.

MAT135Y WEBSITE:

You can go to the MAT135Y Website by typing: <http://www.math.utoronto.ca/lam/>

Note that this is the ONLY official MAT135Y Website. Any important information concerning the course will be posted on this Website, and also on the MAT135Y Notice Board on the ground floor of Sidney Smith Hall. Such information will also be announced in class by the instructors.

ADMINISTRATIVE PROBLEMS? TERM-TEST CONFLICTS?

If you have a problem of an administrative nature (e.g., term-test time conflict), you should see Anthony Lam, who is the MAT135Y course administrator. His office is in BA6125. During the academic year, he will have regular office hours (which will be posted outside his office, once these have been finalized). If you have a term-test time conflict, you should contact Mr. Lam three weeks before the test, to make special arrangements. Anthony Lam's e-mail address is: lam@math.utoronto.ca

Note: Any e-mail message to Anthony Lam should not include any attachments, which will be automatically deleted by the Computer. Your e-mail to A. Lam should contain the words "MAT135Y" in the Subject line.

When you send e-mails to A. Lam, you should use your **@utoronto.ca e-mail account; otherwise, your e-mail may be treated as spam and deleted automatically by the Computer. If you don't have such an account, please set one up. It is free! Also, when Mr. Lam sends you a reply, it will be to your ****@utoronto.ca e-mail address. You should NOT redirect your e-mail to another e-mail address (such as hotmail). Doing so usually means that his reply will never reach you!**

MAT135Y (2009-2010) Course Outline

Schedule for First Term

Week of	Sections (from the textbook) to be covered	Additional notes
Sept. 9 to 11	Quick overview of Chap. 1 (Omit 1.4), and review of trigonometry (appendix D)	Tutorial enrolment
Sept. 14 to 18	2.1, 2.2, 2.3	Tutorial enrolment
Sept. 21 to 25	2.5, 2.6 (Omit precise definitions 7,8,9)	Tutorial List to be posted on Friday, Sept. 25
Sept. 28 to Oct. 2	2.7, 2.8	Tutorials start this week.
Oct. 5 to 9	3.1, 3.2, 3.3	Quiz 1 to be written this week; all Quizzes to be held in tutorials
Oct. 13 to 16	3.4, 3.5 (University closed on Mon., Oct. 12, Thanksgiving)	Quiz 2 to be written this week
Oct. 19 to 23	3.6, 3.7, 3.8	Quiz 3
Oct. 26 to 30	3.9, 4.1, 4.2	Quiz 4
Nov. 2 to 6	4.3	Term-test 1 on Wednesday , Nov. 4, at 6:10 p.m.
Nov. 9 to 11	4.4 (Lectures as usual on Nov., 9, 10 and 11, no Lectures on Nov. 12 and 13)	No Tutorials this week
Nov. 16 to 20	4.5, 4.7	Quiz 5
Nov. 23 to 27	4.9, 5.1	Quiz 6
Nov. 30 to Dec. 4	Review (Last day of classes: Dec. 4)	Term-test 2 on Thursday , Dec. 3, at 6:10 p.m.

Note:

- Students in a Monday Tutorial do not have to write Quiz 2, because of the Thanksgiving holiday. For these students, only the best 10 Quizzes will count.
- As per university regulations, the MAT135Y Tutorials have priority over any tests (e.g. PHY131, CHM139, BIO150, etc.) held at the same time as the MAT135Y Tutorials. **You are not allowed to skip your MAT135Y Tutorial and Quiz in order to write the regular sitting or the early sitting of another test.** The instructor of your other course will have to let you write his test on another day or make some other adjustments, according to university regulations.
- Students missing a Quiz because of illness (properly documented) should contact Anthony Lam in BA6125 (before the day of the Quiz, if possible) for special consideration. In any case, supporting documents must be submitted to A. Lam no later than one week after the day of the Quiz. Anyone expecting to miss a Quiz because of very special non-medical reasons must obtain special approval from A. Lam before the day of the Quiz .

MAT135Y (2009-2010) Course Outline

Schedule for Second Term

Week of	Sections (from the textbook) to be covered	Additional notes
Jan. 4 to 8	5.2, 5.3	Lectures resume this week.
Jan. 11 to 15	5.4, 5.5 and Appendix G	Tutorials resume this week.
Jan. 18 to 22	6.1, 6.2, 6.3, 6.5	Quiz 7 to be written this week
Jan. 25 to 29	7.1, 7.2	Quiz 8
Feb. 1 to 5	7.3, 7.4, 7.5	Quiz 9
Feb. 8 to 12	7.8, 8.1, 9.1	Quiz 10
Feb. 15 to 19	Reading Week (No lectures and no tutorials this week)	
Feb. 22 to 26	9.2 (Omit Euler's Method) 9.3, 9.4	Quiz 11
Mar. 1 to 5	9.6, 11.1	Term-test 3 on Wednesday , March 3, at 6:10 p.m.
Mar. 8 to 12	11.2, 11.3, 11.4	Quiz 12
Mar. 15 to 19	11.5, 11.6	Quiz 13
Mar. 22 to 26	11.7, 11.8	Quiz 14
Mar. 29 to April 1	11.9, 11.10 (Last day of classes: April 1)	Last day of Tutorials: April 1

MAT135Y (2009-2010)
Weekly Problem Sets for First Term

Week of	Questions from the textbook (to be done at the end of the indicated week)
Sept. 9	Section 1.1 #1,5,7,21,27,31,37,39,41,43,45,47,61,63,65,67,69 Section 1.2 #3,9,11,13 Section 1.3 #3,5,19,23,27,29,34,35,38,39,51,63,64 Section 1.5 #9,11,13,15 Section 1.6 #15,17,21,22,23,25,29,33,35,39,49,53 Appendix D #1,5,9,11,23,29,47,59,63,65,69
Sept. 14	Section 2.2 #7,9,25,27,29,31,32 Section 2.3 #13,18,19,21,22,25,29,35,37,39,40,41,43,46,47,55,56, 61*
Sept. 21	Section 2.5 #3,9,37,39,41,43,45,47, 65* Section 2.6 #3,13,17,19,20,21,25,26,33,36,39,41
Sept. 28	Section 2.7 #13,15,21,,22,23,25,26,31,33,37 Section 2.8 #3,19,21,25,29,35,37,49,55 Page 171 # 3*,9*,13*
Oct. 5	Section 3.1 #10,11,24,25,26,27,30,31,33,35,45,49,51,55,57,59,63, 65*,67,72,75,77* Section 3.2 #6,9,13,23,24,25,27,29,32,33,41,43,46,49, 51* Section 3.3 #1,3,9,10,11,15,19,21,31,37,40,41,42,45,47,48, 51*
Oct. 13	Section 3.4 #9,15,21,24,25,29,31,36,41,45,47,49,51,53,61,63,65,67,71,75,77, 91* Section 1.6 #59,61,63,67 Section 3.5 #3,7,12,13,15,19,21,23,27,29,35, 39* ,41,45,49,51,52, 54* ,59,61, 65* ,67,68, 69*
Oct. 19	Section 3.6 #3,4,5,11,15,17,21,23,27,32,33,37,40,41,43,45,49,51, 53* Section 3.7 #7,9,10,15 Section 3.8 #1,3,9
Oct. 26	Section 3.9 #1,3,5,8,13,15,17,21,25,27,35,41,43* Page 267 # 1*,9*,21*,25* Section 4.1 #15,17,19,21,23,25,31,34,35,37,41,43,44,49,53,57,59,61, 75* Section 4.2 #1,3,11,13,17,25, 33*
Nov. 2	Section 4.3 #1,11,12,13,15,17,19,21,31,33,35,39,45,47,67, 77*,81*
Nov. 9	Section 4.4 #5,9,13,15,17,21,27,29,37,47,50,51,53,55,59,61, 79*,81
Nov. 16	Section 4.5 #7,17,23,33,43,49,57,59,61,63,65, 67* Section 4.7 #3,5,9,11,13,17,27,29,31,33,39, 65*,69*
Nov. 23	Section 4.9 #3,5,7,15,19,30,32,33,35,40,42,57,59 Page 352 # 1*,7* Section 5.1, #1,5,17,19

Note:

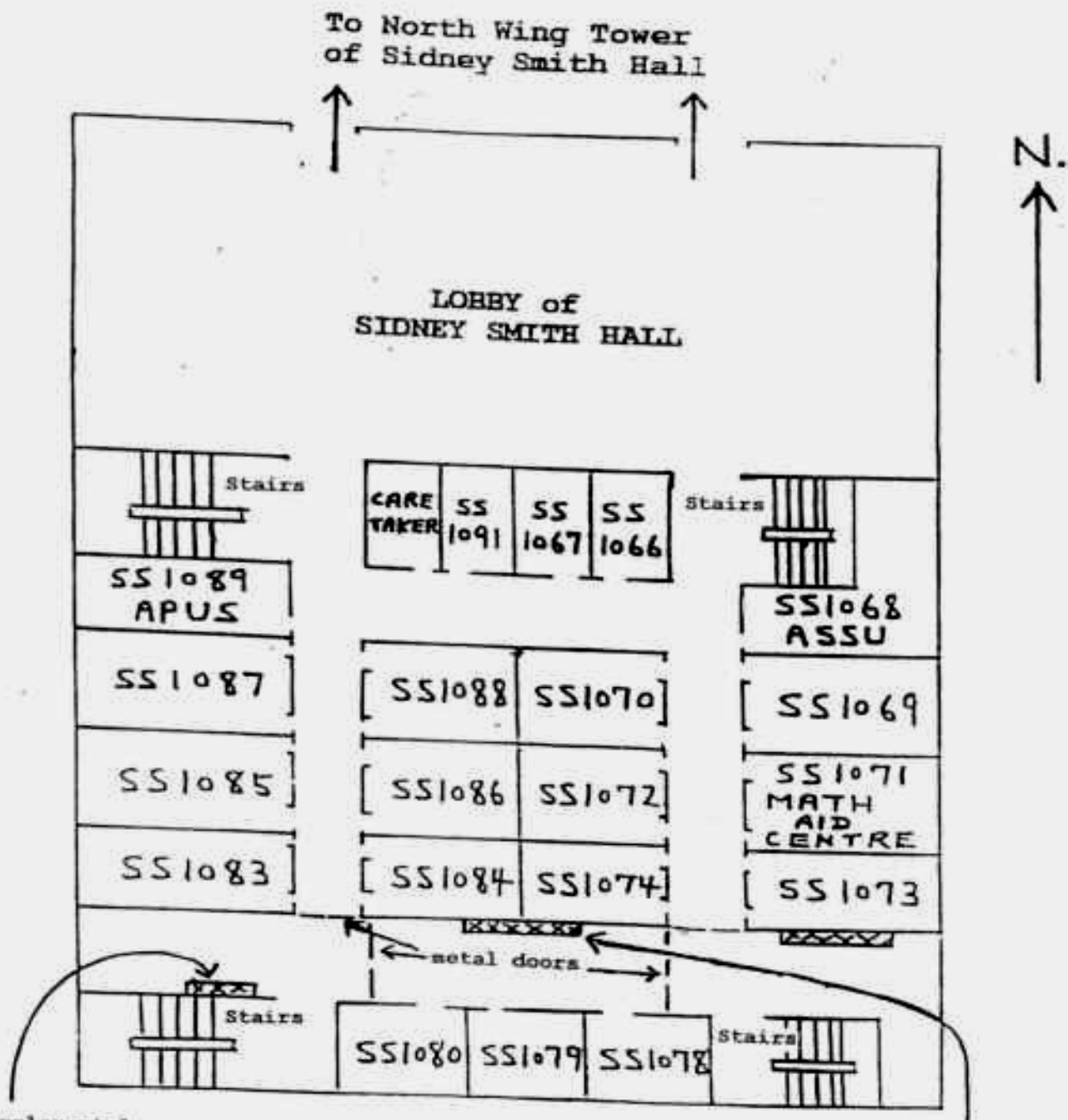
All page numbers and problem numbers refer to the 6th edition of the textbook. Questions with a (*) are challenging questions. There will be some challenging questions in the Term-tests and the Final Exam, not necessarily the same as those indicated here.

MAT135Y (2009-2010)
Weekly Problem Sets for Second Term

Week of	Questions from the textbook (to be done at the end of the indicated week)
Jan. 4	Section 5.2 #1,3,5,7,21,29,33,36,37,39,41,48,49,50,69, 70* Section 5.3 #3,7,9,11,13,15,16,19,29,31,36,39,41,53,55,57,59,65,66, 73*
Jan. 11	Section 5.4 #9,11,13,15,16,17,18,21,29,35,37,40,43,44,51,57,59 Section 5.5 #3,9,11,13,21,25,29,30,33,36,41,43,53,57,60,67,68,69,73, 75* ,81, 85* , 87* Appendix G #5,7 Page 413 # 1* , 5* , 7*
Jan. 18	Section 6.1 #5,9,13,17,19,21,26,27,29,45,49* Section 6.2 #1,3,7,9,11,12,15,17, 51* Section 6.3 #3,5,9,11,13,15,17,19,37,38 Section 6.5 #1,5,9,17 Page 448 # 3* , 11*
Jan. 25	Section 7.1 #1,3,5,9,10,11,13,17,23,27,31,33,37,47,48 Section 7.2 #3,4,7,9,13,23,26,27,29, 34* ,35,39,40,43,46
Feb. 1	Section 7.3 #4,5,6,7,13,19,25,27,30, 35* , 41* Section 7.4 #3,5,9,15,19,23,24,25,27,35,41,44,45,47, 51* ,52,57,59 Section 7.5 #3,19,21,22,27, 31* , 33* ,35,43,49,55,56,61, 63* , 64* , 65* ,69, 70* , 79* , 81* Page 522 # 2* , 7*
Feb. 8	Section 7.8 #5,9,13,17,21,23,27,31,35,40,49,53,55 Section 8.1 #7,9,11,13,15 Section 9.1 #1,3,5,9,13
Feb. 22	Section 9.2 #1,9,11 Section 9.3 #2,3,5,9,11,13,15,29,31 Section 9.4 #1,3,5,9
Mar. 1	Section 9.6 #1,3,5,9 Section 11.1 #17,19,23,27,29,30,31,39,45,61,65
Mar. 8	Section 11.2 #1,2,13,19,21,23,26,31,34,47,49,55, 59* Section 11.3 #3,5,11,16,17,21,22, 27* Section 11.4 #3,9,11,12,13,19,22,25,28,31, 39* , 43*
Mar. 15	Section 11.5 #3,5,9,13,15,17, 33* Section 11.6 #3,9,11,15,17,18,23, 25* , 27* , 29*
Mar. 22	Section 11.7 #3,9,13,19,20,23,26,27,31, 35* , 36* ,37 Section 11.8 #5,7,11,13,15,19,20,25
Mar. 29	Section 11.9 #3,5,7,8,11,15,17,23 Section 11.10 #6,7,9,11,15,17,19,25,27,29,33,37,47,49,55,57,63,65,68

Note: All page numbers and problem numbers refer to the 6th edition of the textbook.

Ground Floor Plan of Sidney Smith Hall



Supplemental
MAT135Y
NOTICE BOARD
(Homework solutions
will be posted here.)

MAT135Y
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(All important
information,
including Tutorial
List, will be
posted here.)