MAT135H1S Calculus I(A)
(January - April 2012)
Course Outline

Department of Mathematics
University of Toronto

COURSE DESCRIPTION

This is a first-year Introduction to Differential 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, Continuity, Rules of Differentiation, Implicit Differentiation, Higher Derivatives of Logarithmic, Exponential and Inverse Trigonometric Functions, L'Hospital's Rule, Related Rates, Mean Value Theorem, Graphing, Optimization Problems, Exponential Growth and Decay Problems, Examples from Life and Physical Sciences Applications.

Textbook

Single Variable Calculus, Early Transcendentals version, 7th edition, by James Stewart (Publishers: Brooks/Cole)

Note:

Throughout the academic year, it will be assumed that you have either bought the Textbook (7th edition) and the *Student Solutions Manual* or will be able to borrow them from a friend of yours on a weekly basis.

Note that the 7th edition is not the same as the 6th edition, with many new exercises, among other changes. Of course, only the new Student Solutions Manual has the solutions to the new exercises of the 7th edition. The University Bookstore is selling the textbook and solutions manual as a package, at a special price. Buying the books separately will cost more.

Lecture

All MAT135H1S students must enrol in one Lecture section. Every Lecture section has 3 hours of lecture per week. Lectures will start on the week of January 9, 2011. 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 Monday, January 23. **If you want to enrol in a Lecture section or change your Lecture section after the deadline, you must go to your College Registrar to make a special request, which may or may not be granted!**
The MAT135H1S Lecture sections are as follows:

Lecture session	Time	Location	Instructor
L0101	T10	MP203	Alexander **MacLeod**
	R10	MP203	
	F1	MP102	
		(Note: Room changes!)	
L5101	R6-9	MP102	Meng Fai **Lim**

<u>Tutorials</u>

All MAT135H1S students must enrol in one Tutorial section. 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.), T0301 (Thursday 4 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 <u>Monday, January 23</u>. **After this date, for late enrolments or changes, students must go to their College Registrar, who may or may not grant them special permission to do so.**

<u>MORE INFORMATION ABOUT THE TUTORIALS</u>

The duration of each Tutorial is 50 minutes. Tutorials meet once a week and will start the week of January 23. For the very first Tutorial, attendance is optional. Starting January 30, tutorial attendance is compulsory. 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.**

<u>MARKING SCHEME</u>

Quizzes 5%

Term-test 30%

Final Exam 65%

<u>PROBLEM SETS and QUIZZES</u>

Problem Sets (consisting of problems from the textbook) are given on p.6. 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. 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 5 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.5. 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 MAT135H1S Website, one week before each Quiz. There will be a total of 6 Quizzes to be written. For each Quiz, you will get a mark of 0 or 1. For each of you, we will count only the best 5 out of the 6 Quizzes that you write.

TERM-TEST
The Term test will be held on **Thurday, March 1 (7:30-9pm)**. The locations for writing the Term-test will be announced later. The Term-test (as well as the Final Exam) will have both multiple-choice and non multiple-choice questions.
NOTE: You are not allowed to use any books, notes, calculators or scrap paper while writing the Quizzes, Term-test or the Final Exam.

MAKE-UP TESTS
If you believe that you cannot write the Term-test because of special reasons, you should see Meng Fai Lim (the course administrator) in BA6103, 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. Anyone who skips the Term-test without prior approval will get a zero for the 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 Meng Fai Lim 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.

MAT135H1S WEBSITE
You can go to the MAT135H1 Website by typing:
http://www.math.utoronto.ca/limmf
Note that this is the only official MAT135H1 Website (even though your instructor may have his/her own website). Any important information concerning the course will be posted on this Website.

Administrative problems? Term-test conflicts?
If you have a problem of an administrative nature (e.g., term-test time conflict), you should see Meng Fai Lim, who is the MAT135H1S course administrator. His office is in BA6103. During the academic year, he will have regular office hours (which will be announced, once these have been

finalized). If you have a term-test time conflict, you should contact M.F. Lim as soon as possible, to make special arrangements. Meng Fai Lim's e-mail address is: **limmf@math.utoronto.ca**.

Note: Any e-mail message to Meng Fai Lim should contain the words "MAT135H1S" in the Subject line.

MAT135H1S (Jan-Apr 2012)

Schedule for the course

Week of	Section (from textbook) to be covered	Additional notes
Jan 9 to 13	Quick overview of Chap. 1 (Omit 1.4), and review of trigonometry (appendix D)	Tutorial enrolment
Jan 16 to 20	2.1, 2.2, 2.3	
Jan 23 to 27	2.5, 2.6 Omit precise definitions 7,8,9	Tutorials start this week
Jan 30 to Feb 3	2.7, 2.8	Quiz 1 to be written this week; all Quizzes to be held in tutorials
Feb 6 to 10	3.1, 3.2	Quiz 2 to be written this week
Feb 13 to 17	3.3, 3.4, 3.5	Quiz 3 to be written this week
Feb 20 to 24	Reading Week	No Lectures and no Tutorials this week
Feb 27 to Mar 2	3.6, 3.7	Tutorials as usual this week, but no Quiz
Mar 5 to 9	3.8, 3.9	No Tutorials this week
Mar 12 to 16	4.1, 4.2	Quiz 4 to be written this week
Mar 19 to 23	4.3, 4.4	Quiz 5 to be written this week
Mar 26 to 30	4.5, 4.7	Quiz 6 to be written this week
Apr 2 to 6	Review (Last day of Lectures : Apr 5)	No Tutorials this week

Note: 1. As per university regulations, the MAT135H1S Tutorials have priority over any tests (e.g., PHY131, CHM139, BIO120, etc.) held at the same time as the MAT135H1S Tutorials. **You are not allowed to skip your MAT135H1S 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.

2. Students missing a Quiz because of medical reasons (properly documented) should contact Meng Fai Lim in BA6103 (<u>before</u> the day of the Quiz, if possible) or by e-mail for special consideration. In any case, supporting documents must be submitted to M.F. Lim 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 M.F. Lim <u>before</u> the day of the Quiz.

MAT135H1S (Jan-Apr 2012)
Weekly problem sets

Week of	Questions from textbook (to be done at the end of the indicated week)
Jan 9 to 13	Section 1.1 #3,7,9,15,25,31,37,43,45,49,51,55,63,69,73,75,77
	Section 1.2 #3,7,9,11,13,15,19
	Section 1.3 #3,5,13,15,17,23,29,32,33,35,37,38,51,53,59,63
	Section 1.5 #1,3,11,15,17,19,21
	Section 1.6 #15,16,17,21,22,23,25,29,31,35,38,41,51,55
	Appendix D #1,5,9,11,25,29,45,49,59,63,65,71,73
Jan 16 to 20	Section 2.2 #5,7,9,11,29,31,33,36
	Section 2.3 #13,15,20,21,23,25,29,32,37,39,41,42,43,45,49,57,58,**63***
Jan 23 to 27	Section 2.5 #3,19,41,43,45,47,53
	Section 2.6 #3,13,18,19,21,25,26,29,33,34,35,41,45, **61***
Jan 30 to Feb 3	Section 2.7 #5,13,15,19,23,24,27,31,33,35,39,51
	Section 2.8 #3,9,21,25,27,31,37,39,45,51,57
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Feb 6 to 10	Section 3.1 #9,10,11,19,23,27,28,30,31,33,35,43,45,47,51,55,57,59,61,63,67, 71,75,**77***
	Section 3.2 #5,7,8,21,25,27,29,31,34,41,42,45,46,49,51,55
Feb 13 to 17	Section 3.3 #1,3.5,8,11,12,15,19,23,31,37,40,41,45,47,48,49
	Section 3.4 #7,12,17,21,25,29,30,31,33,35,41,45,49,51,53,61,63,65,69,71,73,77, 78,**93***
	Section 1.6 #63,65,67,71
	Section 3.5 #3,7,10,13,15,19,21,23,29,31,35.39,**43***,49,51,53,54,55,60,**75***,77, 78,79
Feb 27 to Mar 2	Section 3.6 #3,7,11,12,13,15,16,25,27,32,33,37,41,44,45,49,51,53,**55***
	Section 3.7 #7,9,15
Mar 5 to 9	Section 3.8 #1,3,9
	Section 3.9 #1,3,6,9,15,17,21,27,29,43,45*
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Mar 12 to 16	Section 4.1 #15,17,21,25,31,34,35,41,44,47,49,53,57,61,**75***
	Section 4.2 #1,3,9,11,19,25,**33***
Mar 19 to 23	Section 4.3 #1,9,11,12,15,17,19,21,31,33,35,37,39,45,47,51,67,**79***
	Section 4.4 #7,11,13,25,33,35,39,49,52,55,57,61,65,85
Mar 26 to 30	Section 4.5 #7,11,19,25,35,45,51,61,63,65,67,71
	Section 4.7 #3,7,11,15,17,19,25,29,31,33,**69***, **73***