

Syllabus and Policy for MAC 2311 Calculus 1, Section U08, Class Number 12327 (Spring 2013)

Book: D. Massey, "Worldwide Differentiable Calculus", Worldwide Center of Mathematics

General Course Objective:

Students will learn to correctly comprehend, use, and manipulate the symbols, ideas, and language of Elementary Single Variable Differential Calculus using spoken and written English. Ideally, this will be done in such a fashion as to increase the depth of understanding of the student regarding the behaviour of algebraic and transcendental functions that the student had previously encountered in prerequisite courses together with a significant mastery of mathematical technique.

To achieve the Objective above, the notions of a function, limit, continuity, differentiability will be introduced in the course in a more rigorous way, based on the students' knowledge of the basic types of functions studied in the Pre-Calculus or equivalent courses. The basic theorems about limits, continuity and differentiability will be stated (and some of them proved) so that the students will have the whole arsenal of tools for investigating the functions appearing in the book. Ample time will be provided for mastering the notions and learning how to use the theorems on particular examples. Applications to Geometry and Physics will be given appropriately. The course ends with the basics of the integration, the opposite to differentiation operation on functions.

It is useful to remember that

The book is a modern, multimedia textbook which consists of Adobe pdf-s, with linked/embedded/accompanying video content, annotations, and hyperlinks.

With the videos contained in the supplementary files, this is not only a textbook, but also an online/electronic version of a course in Differential Calculus.

The pdf format of the textbook makes it incredibly portable. It can be carried on a laptop computer, on many handheld devices, e.g., an iPad, or any desired pages can be printed.

The knowledge of some elementary functions such as polynomials, rational, trigonometric, power, and exponential functions in the amount of the Pre-Calculus or equivalent course is absolutely vital for understanding and successfully working out the material from this course.

*Another feature of the book: other than the Technical Matters sections in it, each section is accompanied by a video file, which is either a separate file, or an embedded video. Each video contains a classroom lecture of the essential contents of that section; if the student would prefer not to read the section, they can **receive the same basic content from the video**.*

There will be **two Midterm Exams** and a comprehensive **Final Exam** during the course. The Final Exam will naturally emphasize more on the sections coming after the second Midterm.

To monitor the work of the students during the course as well as the level of their understanding of the material taught, there will be several Quizzes and “turn-in” homework assigned.

It is a part of this course policy that the problems for all the exams and turn-in HWs will be taken from the problems suggested by the Instructor for work at home.

For each student, the lowest score Quiz will be dropped when forming the overall grade. The overall grades will be computed on the basis of 10% of the turn-in HW score, 20% of the quizzes' score, 30% of the average of the Midterms' scores and 40% of the Final Exam's score.

Example: Suppose a student has A points total on the HW, B points total on the Quizzes, C points total on the Midterm Exams, and D points on the Final Exam. Suppose further that the maximal possible points one can get on these are A', B', C', and D' respectively. Then, one can compute a number S by the formula

$$S = [10*A + 20*B + 15*C + 40*D] / [10*A' + 20*B' + 15*C' + 40*D']$$

The overall grade of the student above is determined now by the (straight) scale:

0.92 < S	: A	0.89 < S < 0.92	: A-	0.86 < S < 0.89	: B+
0.78 < S < 0.86	: B	0.75 < S < 0.78	: B-	0.71 < S < 0.75	: C+
0.62 < S < 0.71	: C	0.58 < S < 0.62	: C-	0.55 < S < 0.58	: D+
0.49 < S < 0.55	: D	0.46 < S < 0.49	: D-	S < 0.46	: F

No make-up exams will be scheduled.

An excerpt from the Departmental policy for the Calculus1 course:

“All tests must be closed book tests. Formula sheets are not to be used during the tests. In each of these courses, there is a certain amount of basic knowledge that the student must master in order to succeed in subsequent course work. The student must be required to learn and memorize the important trigonometric identities, logarithm and exponential properties, differentiation formulae, integration techniques, series expansions, etc. It will be assumed in subsequent course work that the student has a reasonable command of these, without having to resort to notes, sheets or books.”

We will follow closely this policy.

Important remark: The Instructor reserves the right to make any changes he considers academically advisable. Any such changes will be announced in advanced in class or by posting them to the e-mail accounts of the students. The students are responsible to be aware of the changes announced this way.