

Departmental Syllabus for MAT 296, Calculus II SPRING 2010

Course Description. MAT 296 is the second course of a three-semester course in Calculus offered by the Department of Mathematics. This sequence is designed for science and engineering majors, and for students in other disciplines who intend to take upper level mathematics courses. MAT 296 covers techniques of integration, applications of integration, improper integrals, parametric curves in the plane, polar coordinates, sequences and series (including power series, Taylor and Maclaurin series).

Prerequisite. C- or better in MAT 295 or equivalent. If you have not satisfied this prerequisite, you must drop MAT 296 and register for MAT 295.

Liberal Arts Core information: Any student who receives a grade of C or better in MAT 295 or 296 is exempt from the Quantitative Skills requirement of the Liberal Arts Core. MAT 296 may also be used to partially satisfy the Divisional Perspectives requirement, specifically the Natural Sciences and Mathematics Division. MAT 295-296 form a sequence in the Natural Sciences and Mathematics Division.

Textbook. *Calculus: Early Transcendentals 6th Edition*, by James Stewart, Thomson Brooks/Cole. (The material we will cover appears in Chapters 6 through 11.) Also required is a subscription to *Enhanced WebAssign*, an online homework system.

Online Homework System: Most of the assigned homework problems will be done using the online homework system, WebAssign. To use this system, you are required to purchase an access code. You may do so either at the campus bookstore or online at www.webassign.net. You should access this system as soon as possible and begin your first assignment. Webassign has a two-week grace period that allows you to begin working on homework before purchasing the code.

Calculators: The TI-84 or TI-83 are recommended (but not required) graphics calculators for this course. Students who already own and know how to use another equivalent calculator are free to use it. Calculators may or may not be allowed on exams and quizzes but calculators with a symbolic calculus capability (such as the TI-89 or the TI-92) are forbidden. On exams and quizzes complete solutions, and not merely answers, must be presented. For example a numerical computation of an integral by calculator is not acceptable.

Cell Phones. All electronic devices other than the calculator should be turned off and put away during class. Calculators on cell phones are not to be used on tests or quizzes.

Course Format: The course format is two or three lectures and a recitation, depending on your section. New material will be introduced in lecture by your primary instructor.

Your recitation instructor will answer questions on the course materials and the assigned homework problems. Quizzes may be given in recitation.

Class Attendance and Participation: You are expected to attend class and participate in it. Missing class is among the most common reasons for poor performance in the course. If you miss a class, you are responsible for obtaining notes for that class from a student who attended. It is also your responsibility to find out about any announcements made in class.

Required Work: The required work in this course consists of attendance in the lecture and recitation sessions, the assigned homework problems, quizzes, three midterm exams, and the final exam.

Homework: To learn the material in a mathematics class, it is essential to do all the homework assignments. The homework assignments for the semester are listed below. Most of the problems will be done using WebAssign. Some will be done using traditional tools: paper and pencil. Your instructor may or may not collect the written homework. In either case completing all homework is necessary to be prepared for quizzes and exams. Some variations from the list of homework exercises may be announced in class. Your instructor may elect to drop one or more homework grade in computing your homework average for the semester.

Quizzes will be given in recitation almost every week, except for the weeks when you have a test. They will have 2 or 3 problems similar to the homework problems (either WebAssign or written). **No make-up quizzes will be given.** Your instructor may elect to drop one or more quiz grade in computing your quiz average for the semester.

Midterm exams. Three midterm exams will be given during the semester at the times announced by your instructor. **No make-up exams will be given.** If you miss a midterm exam and have a written, valid excuse (e.g. from a physician), you may use your score on the relevant portion of the final exam to replace the missed exam.

Final examination is cumulative: it covers the entire course. It is a **two-hour** exam and will be given on **MONDAY, MAY 10, 2010** between the hours of 8:00 a.m. and 2:30 p.m. The exact time and location of your final examination will be announced in lecture. The final examination is given at this announced time and at no other time. **Do not make plans to leave campus before 2:30 p.m. on MONDAY, MAY 10.**

Getting Help. Your instructor and recitation instructor will be holding regular office hours and will make appointments with students having class conflicts with their scheduled office hours. In addition, the Mathematics Department offers regular math clinics. These will be set up by the second week of the semester and a schedule of the clinics will be posted outside the math office.

Grades will be based on three midterm examinations (20% each), a comprehensive final examination (25%), and quizzes and homework (15%). Your course grade will be assigned based on the following percentages:

A 93-100	A- 90-92	B+ 87-89	B 83-86	B- 80-82
C+ 77-79	C 73-76	C- 70-72	D 60-69	F 00-59

Course Supervisor. Leonid Kovalev, 213C Carnegie. Phone 443-1487. Email lvkovale@syr.edu

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

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>

Learning Goals: The broad goals for this course are for you:

- Ability to use and understand the usage of mathematical notation
- Ability to select an appropriate mathematical model for a given real world problem
- Ability to do hand calculations accurately and appropriately
- Ability to do calculations with the aid of appropriate hardware and/or software
- Understanding the nature and role of deductive reasoning in mathematics
- Ability to follow proofs and other mathematical discourse
- Ability to engage in mathematical discourse
- Ability to apprehend and enunciate the limitations of conclusions drawn from mathematical models

How to Succeed

- (1) It is absolutely essential that you understand how to solve the assigned homework problems and, more importantly, how and why the skills and techniques presented in the course are used in solving the assigned problems. Quiz and exam questions will be similar to these problems.
- (2) Ask questions in lecture, recitation and/or at the clinic about anything that is not completely clear. Don't hesitate to bring questions to your instructors during office hours.
- (3) Every day, read and study the sections in the textbook covered in the lecture. Learning mathematics takes time! Read carefully and work through all the examples in complete detail. It can be helpful to try to work through an example on your own before reading the solution.
- (4) Stay caught up. Calculus concepts build on each other cumulatively and you need to stay on top of the material at every stage. If you are having difficulty, don't expect that the problem will take care of itself and disappear later. Contact your course instructor or your recitation instructor immediately and discuss the problem!
- (5) Form a study group. Many students benefit from a study group to work through challenging problems and to review for exams. You should attempt the problems ahead of time by yourself and then work through any difficulties with your study partners. Explaining your reasoning to another student can help to clarify your own understanding.
- (6) You should expect to work hard. Don't get discouraged if you find some of the material very difficult. Be persistent and patient! If you follow the above suggestions, your experience in this course will be a rewarding one.

Homework List

Section	WebAssign Homework	Written Homework
6.1	1, 4, 5, 11, 13, 19, 23, 29, 48	2, 3, 17, 21, 27, 31
6.2	3, 5, 11, 17, 19, 21, 49, 51, 59	13, 15, 23, 34, 57, 60
6.3	3, 9, 11, 13, 19, 22	5, 21, 39, 41
6.4	3, 7, 10, 12, 15, 23	5, 9, 19, 21
6.5	1, 3, 17, 19	5, 9, 13, 14
7.1	1, 3, 5, 9, 11, 15, 19, 23, 34	7, 13, 20, 29, 33, 57
7.2	1, 7, 13, 19, 21, 23, 25, 29, 61	3, 5, 6, 15, 17, 63
7.3	Tut1, Tut2, 1, 3, 5, 7, 17, 21, 29	6, 9, 13, 15, 25, 27
7.4	Tut1, Tut2, 1, 2, 3, 5, 6, 9, 12	7, 11, 15, 21, 25, 29
7.5	1, 2, 5, 7, 17, 18, 31, 41, 45	19, 27, 49, 61, 63, 69
7.8	2, 5, 7, 14, 31, 39	1, 11, 13, 21, 27, 30, 35, 49, 51
8.1	2, 3, 5, 7	9, 11, 13, 15
8.2	1, 5, 7, 13	3, 9, 11, 15
10.1	1, 24, 28, 31	5, 9, 13, 15
10.2	1, 4, 6, 33, 42, 44	11, 17, 41, 48
10.3	5, 8, 13, 17, 22, 33, 37, 49, 56	7, 11, 15, 18, 23, 25
10.4	3, 5, 7, 17, 23, 30	9, 21, 27, 31, 37
11.1	5, 10, 17, 19, 20, 21, 22, 24, 32	3, 11, 13, 15, 31, 33
11.2	3, 4, 6, 9, 11, 19, 23, 37, 39	13, 21, 25, 27, 47, 49
11.3	3, 4, 7, 12, 15, 17, 21, 27, 29	2, 13, 20, 22, 23, 24
11.4	3, 5, 9, 10, 11, 14, 17, 20, 25	13, 15, 19, 23, 27, 29
11.5	2, 3, 4, 15, 24, 25, 29, 30, 32	5, 7, 11, 19, 23, 33
11.6	2, 3, 4, 5, 8, 9, 14, 22, 31	7, 15, 19, 21, 27, 33
11.7	2, 3, 6, 13, 17, 20, 26, 28, 32	1, 7, 9, 15, 21, 37
11.8	3, 5, 9, 15, 19, 22, 24, 30, 42	6, 7, 18, 23, 27, 28
11.9	3, 4, 7, 9, 15, 18	2, 13, 23, 24, 25, 27
11.10	7, 8, 9, 13, 30, 48	5, 29, 47, 49, 51, 55