

MAT 397 - CALCULUS III Spring 2012

Course Description: MAT 397 is the third course in a three-semester sequence in Calculus. This sequence is designed for Mathematics, Science and Engineering majors and for those students in other majors who intend to take advanced courses in mathematics. This course covers the concepts of vectors, vector valued functions, functions of several variables, partial derivatives and multiple integration.

Text: *Calculus* (Early Transcendentals version) 6th Edition, by James Stewart, Thomson Brooks/Cole, 2008. (The material we will cover appears in Chapters 12 through 16.)

Background for Course: Completing MAT 296 (Calculus II) with a grade of C- or better is a prerequisite for MAT 397 (Calculus III). **If you have not satisfied this prerequisite, you should drop MAT 397 and register for MAT 296.** Students who earned a C or less in MAT 296 are unlikely to be successful in MAT 397.

Calculators: The TI-83+ is the recommended graphics calculator for this course. Students who already own and know how to use another equivalent calculator are free to use it. Calculators are **NOT** allowed on exams and quizzes. On exams and quizzes complete solutions, and not merely answers, must be presented to receive credit.

Course Format: The course format is two or three lectures (depending on your section) and a recitation each week. New material will be introduced in lecture by your primary instructor. Your recitation instructor will answer questions on the course material and the assigned homework problems. Exams and quizzes will be given during recitation.

Class Attendance and Participation: You are expected to attend and participate in class. Missing class is the most common reason 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.*

Homework: Assignments for the entire semester are listed below. Each day's assignment should be completed before the next class meeting. Some variations from the list of homework exercises may be announced in class. Your instructor may elect to grade some homework assignments and to use these in determining your final grade. It is *essential* to do all the homework in a timely fashion!

Help: Your instructors will be available regularly during their office hours. You can also seek help at the Calculus Help Center in the Reading Room of Carnegie Hall. The Help Center hours are posted by 215 Carnegie Hall or you can obtain a copy of the schedule in the Math Department Office.

Examinations: There will be three examinations during the semester. They will be given during the recitation of the weeks listed below.

Exam 1, week of Mon 2/13 – Fr 2/17.

Exam 2, week of Mon 3/26 – Fr 3/29.

Exam 3, week of Mon 4/23 – Fr 4/26.

There will be **NO MAKE-UP EXAMS**. A missed examination counts as a zero unless you present a valid excuse from a physician or the Dean's office. With the written excuse, you may use your score on the relevant portion of the final exam to replace the missed exam. Your instructor will announce their policy on missed quizzes.

Final Examination: The final examination covers the entire course. It is a two-hour exam and will be given on **Monday, May 7th** between the hours of **8:00am** and **2:30pm**. 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. **You should not make plans to leave campus until after 2:30pm on May 7th.**

Grades: Each of the semester examinations counts for 20% of your course grade. The final examination counts for 25%, with the remaining 15% coming from quizzes and homework.

Course Supervisor: Professor D. Quinn, 229D Physics Building. Telephone 443-1484. E-mail dpquinn@syr.edu. Please inform your instructor of any problems you have. 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) located in Room 309, 804 University Avenue, to discuss your situation. The phone number is (315) 443-4498. (<http://disabilityservices.syr.edu>) ODS is responsible for coordinating disability-related accommodations and will issue a student with a documented disabilities an *Accommodation Authorization Letter* as appropriate. Since accommodations may require early planning and generally are not provided retroactively, please contact ODS as soon as possible. You should make an appointment to meet privately with your instructor to present your letter and to discuss arrangements.

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:

- A basic knowledge and understanding of the analytic and geometric concepts taught, and of some of their classical applications to other sciences, such as physics
- An understanding of the nature and role of deductive reasoning in mathematics
- Ability to use and understand mathematical notation
- Ability to do hand calculations accurately
- Ability to follow proofs and other mathematical discourse

How to Succeed:

(1) It is absolutely essential that you understand how to solve the assigned problems. Quiz and exam questions will be similar to these problems. It is important to be able to use the skills and techniques presented in the course and not simply to be able to solve a specific set of problems.

(2) Ask questions in lecture, in recitation and 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.

Sect. Assignment

12.1	3,4,7,9,11,13,15,17,19,22,28,40
12.2	1-5,7,9,13,15,18,21,23,29,31,34,43
12.3	1,3,5,6,8,9,11,23,27,31,37,40,41,47,49
12.4	1,5,7,9,13,15,19,23,27,31,33,37,39,43,45,49
12.5	1,3,5,9,11,13,14,15,16,17,19,21,26,27,30,33,35,37,39,43,45,49,53,55,59,67,73
12.6	1,3,5,9,13,19,21-28,33,41,43
13.1	1,3,4,5,7,11,15,19-24,35,37,41
13.2	1,3,5,9,11,13,16,17,19,21,23,25,33,35,37,39,42,47,49
13.3	1,3,4,43,45
13.4	3,5,9,11,14,15,19,22,23,24,25,27
14.1	1,6,7,9,11,15,19,23,27,30,31,32,37,41,49,55,60
14.2	1,3,5,7,9,11,15,19,27,31,35,37,39
14.3	1,11,13,21,23,25,27,35,39,45,50,51,53,57,62,65,83,85
14.4	1,3,5,11,16,19,33,35
14.5	1,3,5,7,9,11,15,17,21,25,27,29,36,38,39,49
14.6	7,9,11,13,15,19,23,25,27,29,31,33,39,41
14.7	3,5,7,9,11,13,29,31,35,39,41,51,53
14.8	3,5,7,11,18,19,25,29,31
15.1	1,3,11,12,13
15.2	1,3,7,11,13,15,17,19,27,29,33,35
15.3	1,3,5,7-11,13,14,15,17,18,19,20,21,23,25,31,39,41,43,49,51,58
15.4	1-11,14,15,17,18,20,21,29,31,33,35
15.5	1,3,5,7,13,15,17,19
15.6	1,3,5,7,9,11,13,15,19,21,27,33,37,39,43
15.7	1,2,3,5,7,9,15,17,19,23,26,27,28
15.8	1,3,4,5,6,7,8,9,11,12,15,16,17,19,23,27,29,30,33,35,38
15.9	1,3,7,9,11,13,15,19,21
15.10	1,3,7,9,15,17
16.1	1,3,7,9,11,13,17
16.2	1,2,3,5,19
16.3	1,3,7,9,11,13,17
16.4	1,3,7,9,11,13,17
	Review for Final Exam
	Final Exam: Monday May 7th. Time to be announced in class. It will end by 2:30 PM - Do not make plans to leave campus before then.