

## **MAT 296 — Calculus II** **Summer 2014**

Instructor: Professor Dan Zacharia

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Lecture: MTWTh 10:00–12:25, 105 Hall of Languages

Office hours: MW 2:45–3:45.

Also by appointment, and any time my door is open.

**Course Description:** MAT 296 is the second course in a three-semester sequence in calculus. This sequence is designed for students who intend to take more advanced courses in mathematics. This course covers techniques of integration, improper integrals, polar coordinates, sequences and series (including power series, Taylor and Maclaurin series).

**Learning Goals:** The broad learning goals for this course are for you to:

- ✓ have a basic knowledge and understanding of the analytic and geometric concepts taught, and some of their classical applications to other sciences such as physics;
- ✓ understand the nature and role of deductive reasoning in mathematics;
- ✓ have the ability to use and understand the usage of mathematical notation;
- ✓ have the ability to do hand calculations accurately and appropriately; and
- ✓ have the ability to follow proofs and other mathematical discourse.

**Background for Course:** Completing MAT 295 (Calculus I) with a grade of  $C-$  or better is a prerequisite for MAT 296 (Calculus II). Students who earned a  $C$  or  $C-$  in MAT 295 are historically at great risk in MAT 296. For these students it is essential to review material from the earlier course, especially as it comes up again. It is also vital not to fall behind with the current material.

**Textbook:** *Essential Calculus: Early Transcendentals*, 2nd ed., by James Stewart. The material we will cover appears in Chapters 6 through 9.

**Homework:** Homework will be assigned each day, and should be completed before the next class meeting. You cannot be successful in the class unless you do the problems, so you are strongly urged to do the assigned homework. You will have an opportunity during class

to start the homework problems while help is available. You are encouraged to work with others, and ask questions about homework problems in class and during office hours

**Help:** You are always welcome at office hours. You can also seek help at the Math Clinic in the room 233 of the Physics Building. The clinic runs Monday through Friday. Its hours are posted by 215 Carnegie, or you can obtain a copy of the schedule in the Math Department Office. You can also work with other students.

**Examinations:** There will be three hour exams during the summer semester. These exams will be given on May 28, June 10 and June 19. In addition, a two-hour comprehensive final exam will be given on the last day of class, June 27. There will be no make-up exams, even in the case of an emergency. With an acceptable excuse your missed exam score will be replaced by your score on the relevant portion of the final exam.

**Calculators:** Graphing calculators are fantastic tools for exploring mathematics and building intuition. They are lousy for doing calculus, particularly the material in this course. Therefore no calculators will be allowed on quizzes and exams in this course. You may use though a calculator on homework if you wish. Use or availability of any calculator or other electronic device at quizzes or exams will be a violation of the Academic Integrity Policy.

**Grades:** Each of the first three examinations counts for 20% of your course grade. The final examination counts for 30%, with the remaining 10% coming from quizzes.

**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>.

**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 your instructor 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.

### **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.