

# **MAT 296-M002**

## **Calculus II**

**Summer Session II, 2015**

**Course Meetings:** M thru Th 11:45 am – 2:10 pm, Room 106 Physics Building

**Instructor:** Thomas John, Ph.D.  
**Office:** 219A/313A\* Carnegie  
**Office Hours:** T, W 10:00-11:30 am (or by appointment)  
**Phone:** 443-1587  
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(\* Carnegie Building is currently under construction and my office is being moved at the beginning of July. The location of office hours are TBD/TBA. Announcements will be made in lecture.)

**Course Description:** MAT 296 is the second 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 more advanced courses in mathematics. This course covers techniques of integration, applications of integration in a variety of contexts, exponential growth and decay, improper integrals, parametric curves in the plane, 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). **If you have not satisfied this prerequisite, you must drop MAT 296 and register for MAT 295.** Students who earned a C or less in MAT 295 are at great risk in MAT 296. For these students it is important to review material from earlier courses, especially as it comes up again. At the same time it is also vital not to fall behind with the current material. Students who have scored a 4 or 5 on the Advanced Placement Calculus BC exam cannot receive both AP credit and credit for MAT 296.

**Text:** *Essential Calculus: Early Transcendentals*, by James Stewart; Thompson, Brooks/Cole, 2<sup>nd</sup> edition.

**Purchasing Your Textbook and WebAssign Access Code:**

All students are required to have a WebAssign access code for online homework assignments. This code includes access to the online electronic version of the textbook. Some students will also want a physical copy of the textbook. **You may choose between the following options.** If you are unsure about which option to choose, please consult with your instructor.

(1) Purchase a WebAssign access code either at the SU bookstore or online at [www.webassign.net](http://www.webassign.net). This access code includes access to the online electronic version of the textbook. If you purchase this code at the SU bookstore, it is valid for future semesters in the Calculus sequence. If you purchase it online and plan to take MAT 397, you should purchase the multi-term (lifetime of edition) version.

(2) Purchase a new textbook bundled with a WebAssign access code at the SU bookstore. This access code includes access to the online electronic version of the textbook, and is valid for future semesters in the Calculus sequence.

(3) Purchase a new textbook bundled with a WebAssign access code from the publisher's website. You can also purchase just your WebAssign access code at the publisher's website.

**Other Resources:** Your textbook comes with access to an online resource at [http://www.stewartcalculus.com/media/13\\_home.php](http://www.stewartcalculus.com/media/13_home.php). This website has some interactive visuals to accompany the topics in your textbook. It also has "homework hints" for the problems in your textbook that are marked in blue. Other interactive visuals can be found by clicking the TEC icon in the pages of your ebook.

**Calculators:** A scientific graphics calculator is acceptable in this course. If you wish to use one and don't own one, the TI-83 calculator is recommended. Students who already own and know how to use another equivalent calculator are free to use it. ***However, a symbolic calculator (one with CAS) such as a TI-89 or TI-92 or TI-Nspire with CAS may not be used on quizzes or exams.*** 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.

**Course Format:** The course meets four times per week, 11:45 am – 2:10 pm. Most of the time will be used to introduce new material. During the remaining time instructor will answer questions on assigned homework. Quizzes will be given in some of the classes. Topic and date will be announced the day before the quiz.

**Homework:** There will be homework assignments on WebAssign, a web-based system for homework problems. These assignments will be scored based on completion of the assignments. In addition, problems from the textbook are listed below. Your instructor may make some changes to these in class. It is very important that you attempt the homework problems **as soon as possible** after the material has been covered in class.

The problems you see on the exams will be based on the material presented in class and on the homework assignments. Written homework will not be collected or graded.

**Exams:** There will be two midterm exams during the session. These exams will be given during the second half of class on the following dates:

<b>Exam 1</b>	<b>Wednesday, July 22, 2015;</b>
<b>Exam 2</b>	<b>Thursday, August 6, 2015.</b>

**Make-up Exams and Quizzes:** No make-up exams or quizzes will be given. The math department policy for a missed exam is that, if you can justify the absence to the satisfaction of your instructor, then your grade on the relevant portion of the final exam will be substituted for the missing grade. Typically, you will not be allowed to make up more than one exam this way. If you cannot justify your absence from an exam, then you will receive a grade of zero for that exam. Any exceptions to these procedures must be approved by the course supervisor. If you know in advance that you will have to miss a quiz or exam because of some major event, you should discuss this matter with your instructor well before the quiz/exam. **One quiz score will be dropped. There are no provisions beyond this for make-up quizzes.**

**Final Exam:** The final examination covers the entire course. It is a two-hour exam, and will be given on **Thursday, August 13, 2015** during class time: 11:45AM - 2:10PM. **This time cannot be changed, and all students must take the final exam at this time.** Do not make plans to leave campus before 2:10PM on Thursday, August 13, 2015.

**Grades:** Course grades will be determined by:

Exam 1	25%
Exam 2	25%
Final Exam	30%
Quizzes	10%
Homework	10%.

Your course grade will be assigned based on the following guidelines:

92-100	A	78-79	C+
90-91	A-	72-77	C
88-89	B+	70-71	C-
82-87	B	60-69	D
80-81	B-	0-59	F

**Clinics:** There will be a math clinic (free math course help) in Physics Building room 233. Your instructor will announce the clinic hours soon after the summer session starts.

**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.

**Religious Observances Policy:** Syracuse University's religious observances policy, found at [http://supolicies.syr.edu/emp\\_ben/religious\\_observance.htm](http://supolicies.syr.edu/emp_ben/religious_observance.htm), recognizes the diversity of faiths represented among the campus community and protects the rights of students, faculty, and staff to observe religious holy days according to their tradition. Under the policy, students are provided an opportunity to make up any examination, study, or work requirements that maybe missed due to a religious observance provided they notify their instructors before the end of the second week of classes. For fall and spring semesters, an online notification process is available through MySlice/Student Services/Enrollment/My Religious Observances from the first day of class until the end of the second week of class.

**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>. *The use of or availability of any electronic device during a midterm exam or final exam is a violation of the Academic Integrity Policy.*

**Course Supervisor:** Prof. G. Leuschke 317G Carnegie, 443-1500  
Email: [gjleusch@syr.edu](mailto:gjleusch@syr.edu)

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

## **How to Succeed:**

- (1) It is absolutely essential that you understand how to solve all the assigned problems. Since quiz and exam questions will be similar to these problems, it is crucial that you know how to solve every one of them. Once you understand how to solve a problem, write your solution down neatly and in full detail with explanations that would make your reasoning clear to a friend who sees the problem for the first time. Save these solutions in a three-ring binder for review when you prepare for the exams.
- (2) Ask questions in lecture or at the clinic about anything that is not completely clear. Don't hesitate to bring questions to your course instructor during office hours.
- (3) Every day, read and study the sections in the textbook covered in the lecture. Reading 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 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) We believe you can be successful in this course! You should expect to work hard. Don't get discouraged if you find some of the material difficult. Be persistent and patient! If you follow the above suggestions, your experience in this course will be a rewarding one.

**Suggested practice problems from the text by section:**

- 6.1 3, 5, 10, 11, 16
- 6.2 1, 2, 13, 17, 18, 19, 47, 51, 57
- 6.3 9, 18, 19, 22, 23, 24
- 7.1 1, 5, 6, 11, 12
- 7.2 1, 2, 4, 5, 9, 12, 17
- 7.3 3, 4, 7, 15
- 7.4 3, 4 (set up but don't evaluate the integral)
- 7.5 1, 2, 3, 5, 7 (set up but don't evaluate the integral)
- 6.6 5, 8, 9, 11, 17, 19, 20
- 8.1 9, 11, 15, 17
- 8.2 7-10
- 8.3 6, 7, 9, 10, 18, 19, 24, 26, 30
- 8.4 3, 5, 6, 7, 13, 15, 19-27
- 8.5 3-13, 15, 16
- 8.6 3, 4, 7, 13, 17
- 8.7 5, 8, 13, 14, 18
- 9.3 13, 23-31 (use calculator)
- 9.4 6-9, 11, 15, 17