

## **Departmental Syllabus for MAT 295, Calculus I Spring 2010**

**Course Description:** MAT 295 is the first 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 functions, limits, differentiation, and integration as well as applications such as curve sketching, optimization, linear approximation, and computation of areas.

**Course Supervisor:** Professor Helen M. Doerr, 203 Carnegie, 443-1485, hmdoerr@syr.edu

**Text:** Calculus: Early Transcendentals, Edition 6e, by James Stewart (Thomson, Brooks/Cole) and a WebAssign access code for submitting on-line homework.

**Prerequisites:** A grade of C- or better in MAT 194, or its equivalent, is required. During the first week of class a readiness test will be given; those who do not do well should strongly consider taking a precalculus course such as MAT 194 instead of MAT 295.

**Credit:** You cannot receive credit for MAT 284 and MAT 285 after completing MAT 295. In addition, you cannot receive credit for MAT 295 after completing MAT 286.

Students who receive a grade of C or better in MAT 295 are exempt from the Quantitative Skills requirement in the Liberal Arts Core. MAT 295 may also be used to partially satisfy the Divisional Perspectives requirement. It is included on the Basic List for the Natural Sciences and Mathematics Division.

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

All students are required to have (i) a WebAssign access code for online homework assignments, and (ii) at least one of: a new textbook, a used textbook, or access to the online electronic version of the textbook. Most students will choose one of the following options. If you are unsure about which option to choose, please consult with your instructor.

(1) 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.

(2) Purchase the *Study Guide for Stewart's Single Variable Calculus: Early Transcendentals, 6th Edition*, at the SU bookstore, bundled with a WebAssign access code. 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 used copy of the textbook and also a WebAssign access code, either single- or multi-term and either with or without access to the online electronic version of the textbook. The access code is purchased at [www.webassign.net](http://www.webassign.net). If you plan to take MAT 296 you should purchase the multi-term version.

(4) Purchase a WebAssign access code, either single- or multi-term WITH access to the online electronic version of the textbook. The access code is purchased at [www.webassign.net](http://www.webassign.net). If you plan to take MAT 296 you should purchase the multi-term version.

**Other Resources:** These books are available in the Mathematics Library (Second Floor in Carnegie Hall):

Ebersole, D., Schattschneider, D., Sevilla, A., & Somers, K. (2006). *A companion to calculus*. (2<sup>nd</sup> ed.). Belmont, CA: Thomson.

Stewart, J. (2008). *Study guide for Stewart's single variable calculus: Early transcendentals, 6th edition*. Belmont, CA: Thomson.

Stewart, J. (2008). *Student solutions manual for Stewart's single variable calculus: Early transcendentals, 6th edition*. Belmont, CA: Thomson.

Your textbook comes with access to an online resource called “Tools for Enriching Calculus” (TEC). This can be found at <http://www.stewartcalculus.com/tec/>. This website has interactive visuals to accompany the topics in your textbook. It also has “homework hints” for the problems in your textbook that are marked with red boxes. See, for example, Section 2.1, p. 87, #3, 5, and 9; you can find hints to help you with these problems at the website. Other resources can be found by selecting your textbook at <http://www.stewartcalculus.com>.

**Calculators:** A calculator is not required for this course. If you would like to use a calculator, a TI-84 or TI-83 is recommended. Your instructor may allow the use of calculators on quizzes or exams; however, in such a case the use of calculators with symbolic algebra capability, such as the TI-89 or the TI-Nspire with CAS, will still be forbidden. Be sure to check with your instructor beforehand to see whether calculator use is permitted on quizzes and exams and whether your particular model is allowed. The use of non-symbolic calculators (such as the TI-84 and TI-83) will be allowed on the Final Exam.

**Course Format:** The course meets four times per week, consisting of three lectures and one recitation. Your recitation instructor will answer questions on the course material and will work with you in solving additional problems related to the lecture material. A quiz will be given in most recitation sessions.

**Class Attendance and Participation:** You are expected to attend and participate in class. Your success will be limited without your full attendance and participation. If you miss a class, you are responsible for obtaining notes for that class from a student who attended. It is your responsibility to find out about any announcements concerning homework, quizzes or exams that were made during the class.

**Homework:** Homework assignments are listed on the Homework Sheet for the entire semester. **This work is to be completed for the next class meeting.** Some variations from this list may be announced in class. You will submit some homework assignments to your instructor on paper for grading. Most of your homework will be submitted and graded using an online homework system (WebAssign). This homework grade will be used in determining your final grade.

**Help:** Your instructor will be available to answer questions during his/her office hours. You can also seek help at the Calculus Help Center in the Reading Room on the second floor of Carnegie Hall. The Help Center hours are posted by 215 Carnegie Hall; you can also obtain a copy of the schedule in the Math Department Office. Your instructor may also post this information on BlackBoard.

**Examinations:** There will be three in-class examinations. These will be given in the recitation meeting the day after the review listed below. **There will be no make-up quizzes or exams, even in the case of an emergency.** A missed quiz or examination counts as a zero unless you present a valid excuse from a physician or the Dean's Office. With an acceptable written excuse, your missed exam score will be replaced by your score on that portion of the material on the final exam.

**Final Examination:** The final exam covers the entire course. It is a **two-hour** exam and will be given on

**Monday, May 10, 2009**

some time between **8:00 AM and 2:30 PM**. The exact time and location will be announced in class near the end of the semester. Students must take the final examination during the appointed examination block and at the scheduled time. If you have a conflict with another final exam, you must contact your instructor at least two weeks in advance in order to have it resolved. **You should not make plans to leave campus before 2:30 PM on Monday, May 10, 2009. The final exam will *not* be given at any other time.**

**Grades:** Your grade will be computed using the following percentages:

3 Exams	20% each
Final	20%
Quizzes and homework	20%

Your course grade will be determined as follows:

93-100	A	77-79	C+
90-92	A-	73-76	C
87-89	B+	70-72	C-
83-86	B	65-69	D
80-82	B-	0-64	F

**Students with Disabilities:** Students who may need academic accommodations due to a disability are encouraged to discuss their needs with the instructor at the beginning of the semester. In order to obtain authorized accommodations, students should be registered with the Office of Disability Services (ODS), 804 University Avenue, Room 309, 315-443-4498, and have an updated accommodation letter for the instructor. Accommodations and related support services such as exam administration are not provided retroactively and must be requested in advance. For more information about services and policy, see <http://disabilityservices.syr.edu>.

**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 regards 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>.

**Course-related Problems or Questions:** 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 (listed on the first page) 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 are able 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. You may want to save these solutions for review when you prepare for the exams.
2. Ask questions! If something is not completely clear, ask about it in lecture, in recitation or at the Calculus Help Center as soon as possible. Don't hesitate to bring questions to your course instructor or recitation instructor during office hours.
3. Reading mathematics takes time! Read carefully and work through all the examples in complete detail. To test your understanding of the text discussion, try to work 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! Explaining your reasoning to another student can help to clarify your own understanding. However, you should attempt the problems ahead of time by yourself and then work through any difficulties with your study partners.
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 at first. Be persistent and patient! If you follow the above suggestions, your experience in this course will be a rewarding one.

### Homework

Day	Date	Section(s)	Problems
W	1/20	1.6	On-line: 33, 36, 39, 48, 49, 59, 60, 61, 63, 64, 66, 68 Not on-line: 65
F	1/22	2.1 2.2 2.2	On-line: 3, 5, 7 On-line: 6, 7, 9, 25, 26, 27, 29, 31, 32 Not on-line: 1, 2, 12, 14, 16
M	1/25	2.3	On-line: 9, 15, 16, 17, 21, 23, 25, 26, 27, 29, 30, 40, 43, 47 Not on-line: 44, 46, 48
W	1/27	2.5	On-line: 3, 9, 31, 41, 42 Not on-line: 6, 18, 20, 38
F	1/29	2.5 2.6 2.6	Not on-line: 45, 47, 50, 52 On-line: 4, 15, 18, 19, 20, 21, 29, 30 Not on-line: 6
M	2/1	2.6	On-line: 31, 33, 39, 40 Not on-line: 8, 10
W	2/3	2.7	On-line: 11, 18, 21, 42, 48 Not on-line: 10, 17, 20, 22, 25, 46a
F	2/5	2.8	On-line: 3, 6, 8, 9, 10 Not on-line: 21, 25
M	2/8		<b><i>Review for Exam 1</i></b>
W	2/10	2.8	On-line: 35, 36, 38 Not on-line: 23, 28
F	2/12	3.1	On-line: 8, 16, 20, 22, 23, 24, 38, 49, 51, 60, 66, 71 Not on-line: 28, 68, 70
M	2/15	3.2	On-line: 1, 2, 4, 6, 7, 11, 15, 17, 25, 27, 30, 31, 32, 47 Not on-line: 50
W	2/17	3.3	On-line: 1, 5, 7, 10, 12, 15, 21, 32, 39, 44, 47 Not on-line: 18
F	2/19	3.4	On-line: 5, 11, 12, 13, 19, 21, 23, 25 Not on-line: 7
M	2/22	3.4	On-line: 29, 32, 35, 38, 49, 53, 61, 62, 63, 80 Not on-line: 33
W	2/24	3.5	On-line: 2, 3, 9, 11, 15, 19, 25, 32, 46, 47, 49, 53 Not on-line:
F	2/26	3.6	On-line: 2, 4, 12, 13, 24, 33, 41, 42, 44, 46 Not on-line:
M	3/1	3.9	On-line: 11, 12, 14, 16, 24, 28 Not on-line:
W	3/3	3.9	On-line: 17, 27, 35, 37, 39, 41 Not on-line:
F	3/5	3.8	On-line: 2, 3, 4, 13, 14, 15 Not on-line:

M	3/8		<b>Review for Exam 2</b>
W	3/10	4.1	On-line: 28, 33, 34 Not on-line: 4, 6, 8, 10, 12
F	3/12	4.1	On-line: 50, 55, 60
			<b>Spring Break</b>
M	3/22	4.2	On-line: 12, 13, 14 Not on-line: 8, 10, 16
W	3/24	4.3	On-line: 2, 5, 7, 11, 16, 32 Not on-line: 6, 8, 24, 26, 32e, 34
F	3/26	4.3	On-line: 45, 51, 53 Not on-line: 36, 46
M	3/29	4.4	On-line: 7, 10, 18, 26, 27, 31, 42, 51, 55, 57, 59 Not on-line: 56, 60
W	3/31	4.5	On-line: Not on-line: 5, 11, 14, 48
F	4/2		<b>No classes</b>
M	4/5	4.7	On-line: 11, 13, 14, 24, 26, 31 Not on-line:
W	4/7	4.7	On-line: 12, 18, 30, 32, 33, 47 Not on-line:
F	4/9	4.9	On-line: 4, 5, 8, 10, 13, 25, 26, 31, 33, 36, 60, 63, 67, 73 Not on-line: 50, 53
M	4/12	5.1	On-line: 3, 5, 12, 13, 15 Not on-line:
W	4/14	5.2	On-line: 2, 3, 6, 7, 17, 18, 33, 34, 37, 39, 40 Not on-line:
F	4/16	5.2	On-line: 9, 12, 43, 47, 48, 49, 50 Not on-line:
M	4/19		<b>Review for Exam 3</b>
W	4/21	5.3	On-line: 2, 3, 10, 12, 13, 14, 18, 63 Not on-line: 61ab, 62 bc
F	4/23	5.3	On-line: 21, 24, 25, 26, 29, 31, 35, 38, 40, 42 Not on-line:
M	4/26	5.4	On-line: 7, 9, 11, 23, 30, 33, 39, 62 Not on-line: 50, 51, 52, 56
W	4/28	5.5	On-line: 8, 12, 14, 16, 23, 24, 26, 29, 54, 55 Not on-line:
F	4/30	5.5	On-line: 19, 28, 30, 32, 39, 43, 53, 59, 61, 67, 77, 78 Not on-line: 73, 74 (include sketches)
M	5/3		<b>Review</b>

**Final Exam: Monday, May 10, 2009**