

## MAT 285 - CALCULUS FOR THE LIFE SCIENCES I

Fall 2011 (TTh)

**Course Description:** This is the first course in a two-course, terminal calculus sequence. It is designed to introduce students to the beauty and power of calculus. Topics include functions, limits, the derivative, tangent lines, curve sketching, exponential and logarithmic functions and the calculus of several variables. Applications to the life sciences are emphasized.

**Course Restrictions:** MAT 285 may not be taken for credit after successful completion of MAT 284 or MAT 295. Students planning to major in a physical science, engineering or mathematics should take MAT 295.

**Prerequisites:** MAT 194 or an equivalent pre-calculus course must be successfully completed before taking MAT 285.

**Liberal Arts Core:** This course is the second course in the Quantitative Skills sequence MAT 194-285. This course is the first course in the Quantitative Skills sequence MAT 285-286.

**Text:** *Calculus for the Life Sciences*, by Greenwell, Ritchey and Lial; Addison Wesley, 1st Edition. The course will cover Chapters 1 - 6 and 9 of the text.

**Calculator:** A graphing calculator is required. The TI-84 or TI-83 calculator is the recommended graphing calculator for the course. Students who already own and know how to use another equivalent calculator (e.g. TI-85 or TI-86) are free to use it. A calculator with symbolic calculus capability (such as the TI-89 or TI-92) is not allowed for exams and quizzes.

**Homework and Quizzes:** Your instructor will announce the homework and quiz policy for the course.

**Tests:** There will be three exams during the semester, each accounting for 20% of your final grade. There will be **no makeup tests**. However, for excused absences, the corresponding portion of the final exam will be used in place of the missing test score.

**Test Corrections:** An essential part of the testing process is to learn from your mistakes. Hence students not getting an A on a test are required to submit correct solutions to all of the problems missed.

**Final Examination:** The final exam is comprehensive and accounts for 20% of the final grade. All mathematics courses numbered 400 and lower have a departmental final exam during the time block 8:00 AM to 2:30 PM pm on Wednesday, December 14, 2011. The MAT 285 final exam will be scheduled for a two-hour period during this block. The precise time and location of the final exam will be announced in class later this semester. **STUDENTS MUST TAKE THE FINAL EXAM AT THE LISTED TIME. DO NOT PLAN TO LEAVE BEFORE 2:30 PM ON WEDNESDAY, DECEMBER 14, 2011. THERE ARE NO PROVISIONS FOR TAKING THE FINAL EXAM EARLY OR AT ANY OTHER TIME!**

**Grading:** The final score will be computed on a scale of 0 to 100 from the tests (60%), homework, quizzes and test corrections (20%), and the final exam (20%). The final letter grade will be determined as follows:

	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 0-59.	

**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 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:** 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 must 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.

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

Course Supervisor: Professor Wu-Teh Hsiang (This person may **not** be your instructor.)  
Office: 206A Carnegie  
Phone: 443-1486  
Email: [wthsiang@syr.edu](mailto:wthsiang@syr.edu)

**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.

### **Course Objectives and Learning Goals:**

- To reinforce prior understanding of functions, including linear, polynomial, exponential, logarithmic and trigonometric functions.
- To understand what a derivative is, how to find derivatives (limits, formulas), and how derivatives can be used.
- To correctly use and understand the usage of mathematical notation.
- To develop critical thinking and problem solving skills.

**Tentative Class Calendar**  
(for MAT 285 TTh)

	Date		Date	
Aug/Sept	30	1.1, 1.3	1	1.4, 2.1
	6	2.2, 2.3	8	2.3, 2.4
	13	2.4, 3.1	15	3.2, 3.3
	20	3.4	22	Review
	27	<b>Exam 1</b>	29	3.5, 4.1
Oct	4	4.2, 4.3	6	4.3, 4.4
	11	4.5, 4.6	13	5.1, 5.2
	18	5.3	20	6.1
	25	Review	27	<b>Exam 2</b>
Nov	1	6.2	3	6.2
	8	6.3	10	6.4
	15	9.1, 9.2	17	9.2, 9.3
	22	No Class	24	No Class
	29	Review	1	<b>Exam 3</b>
Dec	6	Final Review	8	Last Class

**Important Dates:**

Add Deadline:	Tuesday, September 6, 2011
Financial Drop Deadline:	Monday, September 19, 2011
Academic Drop Deadline:	Tuesday, October 25, 2011
Withdrawal Deadline:	Friday, November 18, 2011
Final Exam:	Wednesday, December 14, 2011