**Math1342** **Calculus II (Sci & Engg)** **Fall, 2009**

**Text:** Calculus, Concepts and Contexts, Vol. 1 and Vol 2, by James Stewart

**Instructor:** J. Shah
**Office:** 523 Lake
**Office Hours:** MW 11:40-12:30 or by appointment
I encourage you to make as many appointments as you need if you have a scheduling conflict with my official hours. You can do it by email. If you are not doing well in the weekly quizzes, I would like you to come and see me to discuss your difficulties

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**Course Objectives:** This course is a one-semester continuation of Calculus I. The three main goals of the course are:

- To understand the concept of the integral and to display that understanding through a variety of applications
- To understand the use of Taylor Series as approximations to functions
- To gain an understanding of the rudiments of the algebra of vectors in 3D space.

**Tests:**
We will have quizzes on Thursdays, at the start of the class every week. There will be **no make-up** quizzes; instead, I will drop the two lowest quiz scores. If you miss a quiz due to illness (**doctor's letter required**), the next quiz in the sequence will be counted twice to replace the missing quiz.
We will have one hour **midterm exam** on Thursday, October 15th. There is not make-up for the midterm just as there is no make-up for the final. The midterm exam will count as 20% of your grade in this course
The two hour, common, commonly graded, **final exam** will count as at least 40% of your grade in this course. You must take the final exam during the time it is scheduled unless you have a registrar-created conflict. **Do not make travel plans that conflict with the exam.**

**Grading**: It is my practice to translate numerical grades into letter grades as follows: 93 and over = A; 90-92 = A-; 87-89 = B+; 83-86 = B; 80-82 = B-; 77-79 = C+; 73-76 = C; 70-72 = C_; 67-69 = D+; 63-66 = D; 60-62 = D_; and below 60 = F. I round up 0.5 and more to 1, 0 to 0.49 to 0.

**Your course grade will be based solely on test scores. To do well on the course, you not only have to understand the concepts, but also develop speed and accuracy in applying these concepts for solving problems. Tests will be graded on the basis of what you write down on paper, so be sure to give enough details for me to understand how you got the answer. Just getting the correct answer is not enough. I must be able to see that you have understood the concepts and learned how to apply them. Writing down the answer from your calculator is not sufficient. I must see how you got each number or an expression step-by-step. In short, I want you use the solutions I work out in class as a model.**

It is the University policy that no grade, including Incomplete, can be changed after one year, unless authorized by the Academic Standing Committee.

**Policy on Homework and attendance:** Although your homework is not graded, I expect to check your notes at the beginning of each class to keep track of your homework. I expect you to attend classes regularly and come to class on time. I will check attendance at the beginning of each class. If you have to leave class early before it ends, you should ask for my permission in advance. If you miss a class, you are required to inform me by email, explaining your reason. **Failure to follow the rules about the homework and attendance will result in a penalty of 3.5 points from your cumulative numerical course grade.**

**Miscellaneous**:

**(1) Computers and cell-phones:** These must be turned off during the class.

**(2) Your travel plans: It will not be possible to change the scheduled time for the final exam. So, do not make your travel plans to conflict with the final exam schedule. The same thing applies to Thanksgiving. We have a lot of material to cover in this course. So there will be a class on Monday, Nov. 23rd, covering a new topic.**

**(3) Other issues:** If there is an issue you would like to discuss, it is a good idea to talk to me first. If this does not help, please see the course coordinator (541 Nightingale, x. 3354)

# MATHU1342 CALCULUS II (ENGINEERING AND SCIENCE) Fall, 2009

**The schedule is subject to change. You are responsible to keep informed about such changes on your own.**

| Week | Section | Topic | Assignment |
|---|---|---|---|
| Sept. 9-10 | 5.5<br>5.6 | Integration by substitution<br>Integration by Parts | **p. 381** #1-7,11-16,19,22,<br>24,32,34,41,47,48,54,55<br>**p. 387** #1-4,6,11,17,19,21,25,29 |
| Sept. 14-17 | 5.7<br>5.9 | Techniques of Integration<br>Numerical Integration | **p. 393** #1-6,23-26,29<br>**p. 411** #7a,c, 8a,c, 16a,c |
| Sept. 21-24 | 5.10 | Improper Integrals | **p. 421** #1,2,5,9,13,19,27,29,51 |
| Sept. 23 | | **Last Day to file a final exam. conflict form** | |
| Sept. 28 – Oct. 1 | 6.1<br>6.2 | Areas Between Curves<br>Volumes | **p. 436** #1-8, 11<br>**p. 446** #1-7, 17, 18 |
| Sept. 29 | | **Last Day to drop a course without a W** | |
| Oct. 5-8 | 6.4<br>6.6 | Arc Length<br>Work | **p. 458** #1, 3-8<br>**p. 472** #1,3,4,7,13,15,17-19 |
| Oct. 12 | | **Columbus Day: No Classes** | |
| Oct. 14<br>**Oct. 15** | 8.1 | Sequences<br>**MIDTERM** | **p. 562** #3,5,7,9,11,13-16,22,23,45,48 |
| Oct. 19-22 | 8.2<br>8.3 | Infinite Series<br>Integral and Comparison Tests | **p. 572** #11-23 odd, 31,41<br>**p. 583** #3,4,6-9,11-13,17,19,21,22 |
| Oct. 26-29 | 8.4<br>8.5 | Other Convergence Tests<br>Power Series | **p. 591** #2,14,15,21,23,27,33<br>**p. 597** #3,5,7,10,15,19 |
| Nov. 2-5 | 8.6<br>8.7 | Functions as Power Series<br>Taylor & MacLauren Series | **p. 603** #1-5,11,23,27<br>**p. 616** #3-5,7,9,13,15,17,25,29,43,50,65 |
| Nov. 9-12 | 9.1<br>9.2 | 3-D Coordinates<br>Vectors | **p. 638** #1,3,8,13,33<br>**p. 646** #4,15,17 |
| Nov. 16-19 | 9.3<br>10.1 | Dot Products<br>Vector Functions and Curves | **p. 653** #3,5,7,9,15,17,21,30,31,37,39<br>**p. 699** #1,3,9,15 |
| Nov. 20 | | **Last day to drop a course with a W grade** | |
| Nov. 23 | 10.2 | Derivatives and Integrals. | **p. 706** #3,5,9,11,17,18 |
| Nov. 25-29 | | **Thanksgiving: No Classes** | |
| Nov. 30 – Dec. 3 | 10.3<br>10.4 | Normals and Lengths (no curvature)<br>Motion in Space | **p. 714** #1,5,45<br>**p. 724 #**3,7,9,10,13-17 |
| Dec. 7-9 | | Review | |
| Dec. 10 | | **Reading Day: No Classes** | |
| TBA | | **Final Exam** | |