

# Mathematics 104

## Calculus II

Spring 2011

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**Text** *Single Variable Calculus, Early Transcendentals*,  
by C.H. Edwards and D.E. Penny, Seventh Edition.

### Course Description

We will start with a review of differentiation and basic integration techniques. We then apply integration techniques to find volumes of solids of revolution. After this we cover integration techniques in more detail and start our development of differential equations. We shall see several applications of differential equations. We conclude with an introduction to polar coordinates.

**Exams** Three 1-hour exams.  
First exam on Friday March 4.  
Second exam on Friday April 15.  
Third exam on Friday May 6.

### Grading

Collected Homework 12.5%  
Quizzes 12.5%  
(Two homework sets and one quizz are dropped; no late homework).  
25% Exam 1  
25% Exam 2  
25% Exam 3

In all cases the judgment of the instructor is what determines the final grade.

**Homework** There will be two types of homework.

*Not collected:* These are practice problems listed on the syllabus. Homework assigned on a given day is to be finished before the next lecture. The quiz will be based on these problems.

*Collected:* Three problems will be assigned on Friday and their formal write-up will be collected the following Monday. Expect to get some challenging problems here. You can discuss these problems with anyone in the course, the TA or at the Resource Center, but the final write-up must be individual. Clearly, "discussion" does not include looking at another's completed solution. Always cite your sources and collaborators. **Late homework will not be accepted.** If for any reason you cannot make it to class, plan ahead so that a friend can turn in the homework for you.

**Quizzes** A closed-book quiz will be given at the beginning of class on most Fridays.

### T.A.

The T.A. is Shara Singh. She will conduct help sessions on Sunday 7 - 8 PM in BN 106 and Thursday 9:15 - 10:15 in BN 103 PM. However, note that the Resource Center is available most nights.

### Resource Center

The resource center will also be available to you with 104 tutors on Sunday through Thursday, 8 till midnight in Room 113, and also 114 and 207, Physics.

### Honor Code

All work done on the exams and quizzes is expected to be solely the work of each individual. All exams and quizzes are closed book; books and notes are not allowed. However, certain calculators will be permitted at certain times.

On the homework sets you may consult with any other student who is taking this course or with the T.A. and the Resource Center tutors. However, the write-up must be done individually and each person who has been consulted must be acknowledged.

Students with disabilities who may need disability-related classroom accommodations for this course are encouraged to set up an appointment to meet with me as soon as possible and to contact the Dean's Office at x4262 to better insure that accommodations are provided in a timely manner.

	<u>Sect.</u>	<u>Topic</u>	<u>Problems</u>
<b>FEBRUARY</b>			
<i>Week 1</i>			
F4)	3.2	Diff.	1,3, 7,9,11,19,23,25,35,37
	3.3	Review	1,3,5, 7,15,27,29,31,33,37
	3.4		11,15,25,27,29,33,39
M7)	3.7	Trig. Der.	1,2, 3,5,6,9,11,13,15,19,23,27,41,43,45,59
	App. C	Trig. Functions	Read Appendix C and pp. 34-36.
W9)	3.8	Natural Ln	1,3,7,11, 27,29,33,39,41,45,47,49,55
<i>Week 2</i>			
F11)	5.2 <b>Q1</b>	Antiderivatives	1,5,7, 11,18,15,19,21,25,27,31
M14)	5.3	Area	1,4,5,7, 17,19,21,37,39
	5.4	Riemann Sums	1,3,5,7,11,15,17,29, (Extra: 46)
W16)	5.5	Evaluation Thm.	1,3,7,17,29,31,35,47
F18)		Winter Carnival	
<i>Week 3</i>			
M21)	5.6	Fund. Thm.	45,47,49,51,53,55,59
	6.7	Natural Log	Read pp. 476-477
W23)	5.7	Substitution	1,3,5, 11,15,21,25,33,39,43,45,53,57,61
	7.2	Substitution	3,5,7,11,15,19,21,25,31
F25)	6.8 <b>Q2</b>	Inv. Trig.	1,3,5,7, 9,11,13,17,23
<i>Week 4</i>			
M28)	6.8	Inv. Trig.	31,37,39,41,43,49,53
<b>MARCH</b>			
W2)	7.3	Parts	1,3,5,7,9,10,11,13,19,20,25,37,41,47,55
F4)		<b>Exam 1</b>	
<i>Week 5</i>			
M7)	6.2	Vol. Cyl.	1,2,3,4,5,7,11,13,15,25
W9)	6.3	Vol. Shells	1,3,4, 5,7,10,11,13,21,25,35
F11)	6.3 <b>Q3</b>	Vol.	6.2:29,35,39,41,47; 6.3:37,39; p. 526:39,41
<i>Week 6</i>			
M14)	7.4	Trig. Int.	1,9,15,13,17,21
W16)	7.4	Trig. Int.	3,5,7,25,27,31,45
F18)	7.6 <b>Q4</b>	Trig. Sub.	1,3,5,7,10,11,13,17,21,27,35,43
<b>APRIL (Spring Break March 19 - April 3)</b>			
<i>Week 7</i>			
M4)	7.5	Partial Frac.	1,2,3,4,5,7,10,11,17,19,23,25,29
W6)	7.8	Imp. Int.	1,3,7,10,11,13,17,19,25,33,37
F8)	7.8 <b>Q5</b>	Imp. Int.	39,41,43,45,47,65
<i>Week 8</i>			
M11)	8.1	Exp Growth/Dec.	1,2,3,4,5,23,33,37,7,9,11,31,35,28 (ans. $\geq 2584.57$ mg)
W13)	8.1	Investment	13,15,17,18,27,29,30 (ans. 41.4%)
F15)		<b>Exam 2</b>	
<i>Week 9</i>			
M18)	8.3	Sep. Diff. Eq.	1,3,9,11,15,17,19
W20)	8.3	Other App.	35,39
F22)	8.3 <b>Q6</b>	Population	31,34b,36,37
<i>Week 10</i>			
M25)	8.4	Linear 1st order	1,2,3,4,5,7,11,15,19,20
W27)	8.4	Mixtures	23,25,27
F29)	8.4 <b>Q7</b>	Mixtures	
<b>MAY</b>			
<i>Week 11</i>			
M2)	9.2	Polar Coordinates	1,2,3,4,7,9,11,13,15,17,19,21,23,29,33,35
W4)	9.2	Polar Sketching	39,41,43,47,49,51,53
F6)		<b>Exam 3</b>	
<i>Week 12</i>			
M9)	9.3	Polar Areas	7,9,11,13,15,17,19,25,27,29,33,35
W11)	9.3	Polar Intersections	
F13)	<b>Q8</b>	Final Quiz - Required	