

Math 1271 Calculus I, Section 012

Summer 2011

Instructor: Jered Bright

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Course Webpage: <http://www.math.umn.edu/~brigh042>

Class Location: Mon-Fri Lind 229 10:10 a.m.-12:05 p.m. June 13-August 5, 2011

Course Materials:

- Calculus: Early Transcendentals Volume I by James Stewart, ISBN 9780495466468 (The “Calc card” that is a part of the package through the Bookstore is unnecessary.)
- Scientific Calculator (graphing calculators may be used on homework at home but *will NOT be permitted on exams or the final*)
- A positive attitude and willingness to work hard!

About the Course:

Derivative? Integral? Tangent Line? Limit?! If you recall closely, you may have heard these terms used elsewhere but may not have a clear understanding of what they are, what they do, or how to use them. During the course, we will discuss all these topics and delve further into the complex, yet beautiful, language of mathematics. The scope of the course is to cover Chapters 1 through 6 of the text, skipping a few sections as you can see in the schedule on later pages.

My goal as an instructor: For many people, Calculus is a feared word, but it should not be so. In the words of one of my past professors, “I seek simplicity.” By this I mean that I hope to distill complex and rigorous topics by presenting them clearly, logically, and in multiple ways so that my students can understand them, but yet maintain high standards and challenge my students. To ensure this, I will provide my students with innovative lectures, opportunities to work and learn from their peers, and homework that is reflective of the Math Department standards as well as my own (which are considerably higher). At the end of every class, I hope that every one of my students can walk out of the classroom feeling comfortable with the concepts and skills discussed in class that day to succeed on the homework.

Gradelines:

93%-100%	A	83%-86%	B	73%-76%	C	0%-59%	F
90%-92%	A-	80%-82%	B-	66%-72%	C- (also S line)		
87%-89%	B+	77%-79%	C+	60-65%	D		

Note: I reserve the right to lower these lines at the end of the semester if necessary.

Grading:

Homework/Homework Quizzes

15%

Every night I will assign you homework problems (about 10 with a challenge problem or two) that will be due the *next* day of class. As a form of assessment, I will either collect your homework and grade selected problems or take the first 5 minutes of class to have you recopy 1 to 2 problems from your homework onto a separate sheet of paper to turn in. I will drop the lowest *two* scores in this category.

Participation

5%

This portion of your grade is based on your class attendance, asking questions/giving answers during the lecture portion of class, not causing classroom disruptions, and working with classmates during the workshop part of class.

Exam 1 (Algebra/Trig Review, Chapters 1 and 2)

15%

Gateway (Sections 3.1 through 3.6)

10%

For this test, you will be given **30 minutes** to complete 10 problems from the specified sections with **no calculator**. The sample exams (with some more challenging ones) are provided on the course website. You **must get 8/10 correct to pass!** If you do get 8/10 you will receive the full 10%. If you do not do so, you will have to retake the exam on the given date and can only receive a maximum of 8% to count towards your grade. If you do not get 8/10 on this, you will have one last opportunity to take it and can at most receive 6% toward your grade.

Exam 2 (Chapter 3 and Sections 4.1-4.5)

15%

Exam 3 (Section 4.7-4.10, Chapter 5)

15%

Final

25%

The final will be a **two hour** cumulative test with an emphasis on Chapter 6 material.

“Leftovers”:

Incompletes: Grades of I are normally not given but may be permitted for extenuating circumstances. A well-documented petition is required and the grade of I is subject to the approval of the Dept of Math.

Withdrawals: Grades of W are subject to the conditions of your college and cannot be given if you take the final exam. If you find that you need to withdraw from the course contact your adviser.

Student Conduct: Students who engage in behavior that disrupts the learning environment for others may be subject to disciplinary action.

Disability Accommodations: Reasonable accommodations will be provided for students with disabilities on an individualized and flexible basis. Disability Services determine appropriate accommodations through consultation with the student. More information is available at <http://ds.umn.edu/>

Harassment: The U of M is committed to providing a safe climate for all students, faculty, and staff.. Reports of harassment are taken seriously. Contact the Office of Equal Opportunity and Affirmative Action, 419 Morrill Hall, 612-624-9547.

Scholastic Dishonesty: This includes plagiarizing, cheating on assignments or examinations, using a graphing calculator while taking an exam, engaging in unauthorized collaboration on academic work, and taking, acquiring, or using test materials without faculty permission. Scholastic dishonesty in any portion of the academic work for a course shall be grounds for awarding a grade of F or N for the entire course

adapted from Beth Steen

Liberal Education: This course fulfills the Mathematical Thinking component of the Liberal Education requirements at the University of Minnesota. An important part of any liberal education is learning to use abstract thinking and symbolic language to solve practical problems. Calculus is one of the pillars of modern mathematical thought, and has diverse applications essential to our complex world. In this course, students will be exposed to theoretical concepts at the heart of calculus and to numerous examples of real-world applications.

Approximate Course Outline (subject to change):**June 13-17: "Warm-Up Week"**

Monday 6/13: Intro, Logistics, Assessments
Tuesday 6/14: "Revisiting the prerequisites"
Wednesday 6/15: Section 1.5 & 1.6 (parts)
Thursday 6/16: Section 2.1 + more
Friday 6/17: Section 2.2

June 20-24:

Monday 6/20: Section 2.3
Tuesday 6/21: Section 2.5 & 2.6
Wednesday 6/22: Section 2.7
Thursday 6/23: Section 2.8 & Review (?)
Friday 6/24: Review for Exam 1

June 27-July 1

Monday 6/27: **Exam 1** & Section 3.1
Tuesday 6/28: Section 3.2 & 3.3
Wednesday 6/29: Section 3.3 & 3.4
Thursday 6/30: Section 3.5 & 3.6
Friday 7/1: **Gateway 1** & Section 4.4

July 5-8

Tuesday 7/5: Section 3.7 & 3.8
Wednesday 7/6: Section 3.9 & 3.10
Thursday 7/7: Section 4.1 & 4.3
Friday 7/8: Section 4.2 & 4.5

July 11-15

Monday 7/11: Curve Sketching & Review
Tuesday 7/12: **Exam 2 (& Gateway 2)**
Wednesday 7/13: Section 4.7
Thursday 7/14: Section 4.8 & 4.9
Friday 7/15: Section 5.1 & 5.2

July 18-22

Monday 7/18: Section 5.3 & 5.4
Tuesday 7/19: Section 5.5 (**& Gateway 3**)
Wednesday 7/20: Section 6.1
Thursday 7/21: Review
Friday 7/22: **Exam 3** & Intro to Volumes

July 25-29

Monday 7/25: Section 6.2
Tuesday 7/26: Section 6.3
Wednesday 7/27: Volumes Review
Thursday 7/28: Section 6.4
Friday 7/29: Section 6.5

August 1-5

Monday 8/1: Chapter 6/Volumes Review
Tuesday 8/2: Cumulative Review part I
Wednesday 8/3: Cumulative Review part II
Thursday 8/4: Cumulative Review part III
Friday 8/5: **Final**

Homework Specifications:

Homework should be turned in on looseleaf paper with NO fringes or on printer paper (which is preferred). All assigned problems should have a sufficient amount of work accompanying them; else they will receive NO credit. Work should be organized and displayed in a logical and clear manner as to communicate your thinking process to me. Also the following homework list MAY change (problems will ONLY be removed; not added).

****Remember ALL homework assignments are due the NEXT day of class!****

6/13 Will be distributed in class

6/14 Will be distributed in class

6/15 p. 58 #16, 19 AND p. 70-72 #7, 8, 19, 22, 35, 36, 49, 59, 60 CHALLENGE: p. 72 #65

6/16 p. 87 #1,5,7

6/17 p. 97-98 #3, 7, 13, 15, 25, 27, 29, 31, 40 CHALLENGE: p. 98 #33

6/20 p. 106-107 #6-8, 13, 15, 19, 24, 29, 35, 37 CHALLENGE: 45, 49

6/21 p. 128-129 #3, 5, 39, 47, 49 AND p. 141-142 # 4, 9, 21, 25, 41

6/22 p. 150-152 # 5, 9, 14, 21, 22, 27, 29, 44 CHALLENGE: Find $f'(x)$ for $f(x) = \sin(x)$

6/23 p. 162-165 #7-11, 21, 25, 34, 38 CHALLENGE: Exercise 54

6/24 p. 167-169 #2, 4, 6, 15, 16, 20, 23, 30, 33, 35, 39ab

6/27 p. 180-182 #4, 8, 13, 23, 28, 30, 33, 35, 50ab CHALLENGE 61, 62

6/28 p. 187-189 #11, 18, 22, 29, 31 AND p. 195-196 #3, 7, 10, 16, 29 (for #29, evaluate each at $\theta = \pi/4$)

6/29 p. 188 #33, 34, 39 AND p. 203-206 # 5, 19,35, 37, 45, 69, 74 CHALLENGE 72, 73

6/30 p. 213-214 #7, 9, 11, 15, 21, 29, CHALLENGE 45, 47 AND p. 220 #9, 15, 30, 47

7/1 p. 305 #29, 31, 33, 35, 37, 41, 43, 47, 49, 55 CHALLENGE p. 306 #77

7/5 p. 231-233 #13, 17, 29, 35 AND p. 239-240 #3, 9, 13 CHALLENGE p. 241 #19

7/6 p. 245-247 # 3, 5, 17, 23, 25 AND p. 252 # 1, 3, 21 (no sketch), 35 CHALLENGE p. 252 #36

7/7 p. 277-278 # 25, 27, 33, 36, 49, 55 AND p. 295-298 # 9, 25, 45 CHALLENGE p. 296 #52

7/8 p. 286 #11, 17, 19, 25 AND p. 314-315 # 9, 17, 33 CHALLENGE p. 286 #36

7/11 p. 262 # 49, 57, 94, 98, AND p. 349 # 3, 11, 15, 23

7/12 Relax and breathe!

7/13 p. 328-329 # 5, 13, 15, 17, 21, 31, 35, CHALLENGE: p. 330 # 47

7/14 p. 338 # 5, 7, 11 AND p. 345 # 23, 25, 31, 33, 37, 39, 44 CHALLENGE: p. 346 #69

7/15 p. 364-365 # 5, 11, 13, AND p. 376-378 #5, 9, 11, 33, 39 CHALLENGE p. 378 #48

Homework continued

7/18 p. 388-389 #7, 13, 27, 35, 56 AND p. 397-398 #11, 15, 17, 30, 41 (factor!) CHALLENGE p. 389 #59

7/19 p. 406-407 #11, 17, 23, 31, 35, 43, 53, 65, 67, 69 CHALLENGE p. 407 #75

7/20 Study/Start on 7/21 HW

7/21 p. 409-411 #2abc, 13, 16, 19, 25, 30, 36, 43, 47, 53

7/22 p. 420-421 #1 – 19 odd CHALLENGE p. 421 #47

7/25 p. 430-431 #3-17 odd, 31, 33 CHALLENGE p. 432 #51

7/26 p. 436-437 #3-21 odd

7/27 p. 436 #37-42

7/28 p. 441-442 #1-19 odd

7/29 p. 445 #1-9 odd, 17

8/1 p. 446-447 # 1, 3, 7, 9, 12, 13, 15, 27, 28, 30

8/2 Review packet

8/3 Review packet continued

8/4 Review packet continued