MAC 2233 – Calculus for Business & Social Sciences – Summer 2009
Section 86552: T/R 12:30 – 2:35 p.m. in DSSC 128

Instructor: Brooke Quinlan
Email: bquinlan@hccfl.edu
Office: DSSC 220
Office Phone: 259-6313
My Website: http://www.hccfl.edu/faculty-info/brooke-quinlan.aspx (Bookmark it!)


CALCULATOR: A graphing calculator is strongly recommended for this course.

PREREQUISITE: Grade of C or better in MAC-1105 or MAC-1140.

GRADING: The grading scale is the standard 10-point scale (90-100 is an A, etc.).

The final grade is computed as follows:
Attendance Average = 5%
“You Try” Average = 5%
Test Average = 70%
Final Exam = 20%

SPECIAL ACCOMMODATIONS STATEMENT:
Any student whose disability falls within the American Disabilities Act (ADA) and requires accommodations should contact the Office of Services for Students with Disabilities. The office is located in the Student Service Building Room 204. You may also reach the office by phone at (813) 259-6035.

CLASS RULES:
• Turn off all cell phones (or put in “silent” mode – not “vibrate”!) before class starts and put them away.
• I will deduct 5 points from your next test score each time I see you “texting” during class.
• If you answer a phone call during class time, I will deduct 10 points from your next test score, and I will mark you absent for that day. Bottom line: no cell phones during class time.
• Cheating is not permitted. Any form of academic dishonesty will result in an “F” in the course and may result in HCC disciplinary action.

My Schedule
Available Office Hour times are shaded and bolded.

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<tr>
<th>Time</th>
<th>Tuesday</th>
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<tr>
<td>10:00 – 10:15</td>
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<td>10:15 – 12:20</td>
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ATTENDANCE:

- Attendance will be taken at every class, and you are expected to attend every class meeting. History has shown that missing a single class meeting results in a 10-20% lower score on the following test due to missing all of the material taught on that day. I will not re-teach nor provide notes for material that you missed when you were absent. It is your responsibility to get notes from a classmate for any classes that you miss, so you need to make some friends in the class!

- Attendance counts as 5% of your final grade in the course. The attendance grade is calculated by dividing the number of days you were in class by the number of days that the class met.

- You are expected to arrive on time. Late arrivals will be marked as “Tardy”, and 2 Tardy’s will equal 1 unexcused absence when calculating the attendance grade.

- If you need to leave class early, let me know before class begins. If you leave class without informing me prior to class starting, then I will mark you absent for that day.

“YOU TRY”:

- During most lectures, I will teach a new topic, do several exercises, and then give you a problem or two that I call a “You Try” problem (which is similar to the exercises in that section’s homework). This way you can see what issues you may be having with the topic and can ask me for help in class, so that hopefully you will avoid having trouble when working on the homework problems at home.

- At the beginning of the semester I will issue you a bunch of note cards. Always write the “You Try” problems on one of these note cards. (You can use the front and the back of the note cards.) The note cards I give you are just a starter set; you need to get some note cards of your own to have enough for the whole semester.

- Occasionally, I will collect the note cards containing the “You Try” problems from that day. You’ll never know when I am going to collect them, so you need to make sure that you always attempt these problems. I will grade the collected “You Try” problems based on effort and return them to you during the next class meeting. Because these are problems you are working as you are learning a topic, I don’t expect them to be exactly correct. But I do expect you to put in your best effort when attempting the problems.

- Sometimes at the end of a class, I will give you a problem or two to do and tell you to bring it to the next class meeting. These count as "You Try" problems also and are fair game to be collected at the beginning of the next class, so make sure you always attempt these problems!

- Keep all of the note cards, whether I collect them or not, because they will serve as good “flash cards” when you are studying for your tests!

- At the end of the semester, the average of the collected “You Try” problems will count as 5% of your overall grade in the class.

TESTS:

- There will be five in-class tests, but I will use only the four highest test grades to compute your overall test average.

- There will be NO makeup tests. If you miss one test, your remaining four test scores will make up your test average. Any additionally missed tests will receive a grade of zero. If you know that you will miss a test you must make prior arrangements with me in order to take the test in the testing center BEFORE THE REST OF THE CLASS TAKES THE TEST.

- No tests will be administered after the class has taken a test except for extreme circumstances, such as hospitalization. If there has been an extreme circumstance that caused you to miss a test, then you need to notify me via email as soon as possible (and before the next class meeting).
FINAL EXAM:
- If you take all 5 tests, and the average of all 5 tests is a 90% or higher, then you do NOT have to take the final exam.
  ☺ (When computing this average, I will count the Test Review bonus points for each test, but I will not include bonus points from volunteering, blood donation, or movie worksheets.)
- For those of you who do have to take the final exam, it will be cumulative and is worth 20% of the final grade in the course.
- Make sure you keep all of your old tests (and write down the correct answers when I go over the tests in class), because all of the questions on the final exam come from the previous tests.

HOMEWORK:
- There is no assigned homework. The lecture schedule on the last page of this syllabus contains suggested exercises for you to work from the book, but I will not collect them.
- You need to understand that the only way to be prepared for the tests is to do the suggested practice exercises in the book, preferably more than once!

COURSE OUTCOMES:
Upon completion of the course the student should be able to:

1. LIMITS
   a. Find limits, one sided limits, limits at infinity, and infinite limits algebraically, numerically, and graphically.
   b. Understand the concept of continuity.

2. DERIVATIVES
   a. Find derivatives by by evaluating the limit of the difference quotient.
   b. Find the slope and equation of the tangent line.
   c. Find derivatives of algebraic, exponential, and logarithmic functions using the power rule, the constant multiple rule, the sum rule, the product rule, the quotient rule, and the chain rule.
   d. Use derivatives to find slope of a tangent, instantaneous rate of change, and related rates.
   e. Differentiate implicitly.
   f. Use first and second derivatives to sketch the graph of algebraic functions by finding:
      i. Critical points
      ii. Intervals where the function is increasing and decreasing
      iii. Extrema (relative and absolute)
      iv. Inflection points
      v. Intervals where the function is concave up and concave down
      vi. Asymptotes using limits

3. INTEGRALS
   a. Find integrals without using integral tables.
   b. Evaluate definite integrals and use definite integrals to find the area under a curve and the area between curves.
   c. Understand the Fundamental Theorem of Calculus.

4. APPLICATIONS
   a. Use the concept of derivatives to solve economics and business applications involving marginal cost, revenue, profit, and elasticity of demand.
   b. Use derivatives to solve optimization problems.
   c. Find the rate of change of exponential and logarithmic functions used as mathematical models.
   d. Apply the definite integral to business and economics.
BONUS POINT OPPORTUNITIES:

There are four ways to get bonus points in this class, as outlined below. Any bonus points earned from options B, C, and D will be added to your second lowest test grade (since your lowest test grade is dropped).

A. Test Reviews: In addition to the "suggested homework problems" listed on the class schedule, I have also given you a list of Test Review Problems which come from the Chapter Reviews in the textbook. If you work these problems out, do so in an orderly fashion. Number all of the problems and show all of your work for each problem. Then on the day of the test, you can hand these review problems in and I will look over them. The neatness and completeness of your work will determine the number of bonus points that will be added to your test (between 0 and 3 bonus points). Any bonus points that you earn for the Test Reviews are for that test only and are not transferable to other tests. The Test Review problems MUST be handed in on the day of the test.

B. Donating Blood: If you donate blood, I will award you 5 bonus points. As proof, you must bring in the slip of paper they give you when you donate blood that has your name on it and the date of donation. You can donate blood every 8 weeks, so if you plan to do this twice during the semester, you need to donate near the beginning of the semester so there will be time to donate again before the end of the semester. (Note: if you are eligible to donate red blood cells using the ALYX system, this counts as two blood donations so you get the entire 10 points with that one donation. If you do ALYX, make sure it is clearly noted on the paper they give you!)

C. Volunteering: If you volunteer 4 hours with a non-profit agency (such as a hospital, nursing home, animal shelter, etc.), I will award you 5 bonus points. As proof, you must bring a letter from the volunteer coordinator/someone in charge that states what you did, how long you volunteered for, the dates you volunteered on, and includes that person’s name and phone number.

You can take advantage of options B &/or C up to twice a semester for a maximum of 10 bonus points.

Thus, to get your maximum of 10 points, you can EITHER
① donate blood twice (5 points × 2)
② volunteer for 8 hours (4 hours + 4 hours = 5 points × 2)
③ donate blood once (5 points) + volunteer for 4 hours (5 points)

D. I have several copies of An Inconvenient Truth, Who Killed the Electric Car?, and Sicko on DVD. You can “check out” a copy of these DVDs from me, watch them, and fill out the provided worksheet about the movie. Each movie/worksheet is worth 2 bonus points. If you have already seen one or more of the movies, then you can still receive the bonus points if you can convince a friend or family member who has NOT seen the movie to watch it and fill out the non-math portion of the worksheet. You must still complete the math portion. If you watch all three movies and complete the worksheets, you can get 6 total bonus points.

Bonus Point Opportunities Summary:

- 3 points for test review exercises times 5 tests = 15 points
- Blood donation/volunteer work points from options B and/or C = 10 points
- 2 points for each movie times 3 movies = 6 points
- TOTAL NUMBER OF BONUS POINTS AVAILABLE IN THE COURSE = 31.

All bonus points get added to the "Tests" portion of your grade. No bonus points will be added to the final exam, "you try", or attendance portions of your grade.

Please take advantage of these bonus point opportunities throughout the semester, and don't wait until the very end of the semester to do them. I have had many students who ended up passing the course (or improving by a letter grade) because they donated blood or did some volunteer work. Trust me, it is very much worth your time.
Test Review Problems

Turn in on test days to get up to 3 bonus points on the test. Do ODDS ONLY unless an even number is specified.

Test 1 (May 21)

p. 67-69: #19-25 (also practice some like I did in class), 31, 37, 41-44 all, 63-64, 69-70
p. 164: #3-4, 5-23

Test 2 (June 4)

p. 164-167: #25-31, also find some problems to do back in this section's exercise set where you have to find the equation of the tangent line, 41-47 (make sure you know the difference between just "marginal" cost, revenue, or profit and "marginal average" cost, revenue, or profit -- this is explained in your book), 49-53, 63-75, 81, 82, 83, 91. The test is REALLY HEAVY from section 2.6 because you can put all the other sections' topics together in one problem from this section. Also, make sure you can FULLY SIMPLIFY your answers -- like I do in class (which is more than what the book requires).

Test 3 (June 18)

p. 239-242: #1-7, 13, 19-23, 37, 48-51 all, 57, 58. Make sure you can use the Second Derivative Test to find relative extrema. Also make sure you can find Absolute Extrema on a Closed Interval.

Test 4 (June 30)

p. 306-309: # 1, 2, 7, 8, 13, 15-30 ALL, 48, 49, 50 (make sure you can also solve for the price required to maximize revenue -- i.e. make demand unitary)

Test 5 (July 14)

p. 391-395: #1-8 all, 11-18 all, 23-29 odd, 49-53 odd, 57-58, 69-70 (Market Demand, "A", is given in both of these problems. But remember on the test I will just give you the supply and demand functions and you have to solve for "A"), 73-74, 77-99 odd (don't do the graphing calculator part on 93-99)
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<td>Do problems 8-22 (even) using the Second-Derivative Test to find Relative Extrema (explained on page 189)</td>
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