MAC 2313 – CALCULUS III (5 cr.) – Fall 2012
Section 32455: M/W 5:00 – 7:15 in DSSC 128

Instructor: Brooke Quinlan
Email: bquinlan@hccfl.edu
Office: DSSC 220
Office Phone: 259-6313
Instructor Website: http://www.hccfl.edu/faculty-info/brooke-quinlan.aspx
MyHCC: https://hccfl.blackboard.com/webapps/login/ (for class notes, grades, etc.)

COURSE DESCRIPTION:
A continuation of MAC 2312. Focuses on arc length and surface area, vectors in two and three dimensional space, planes, lines and surfaces in three-dimensional space, functions of more than one variable, partial derivatives, double and triple integrals and their applications, cylindrical and spherical coordinates, vector fields, line integrals, Green's theorem and Stokes' theorem.

PREREQUISITE:
MAC 2312 with a minimum grade of C.

TEXTBOOK:
Thomas, Weir, & Hass, Thomas’ Calculus Early Transcendentals, 12e.
The book comes in two versions:

NOTE PACKET:
The Class Note Packet is 170 pages long and is available for purchase in the campus bookstore. The note packet is also posted in the Class Files folder in MyHCC.
You will need the notes on the first day of class.

SOFTWARE:
MathXL homework is required for this course. The bookstore has copies of the textbook that have MathXL packaged with them. Or, you can buy a 12-month license for $50.00 at www.mathxl.com (our bookstore also sells MathXL Access Codes). However, if you used MathXL in a previous class, it is possible that the license will last through the end of this course. You can contact MathXL’s technical support at 1-800-677-6337 to see if your license lasts until at least December 5, 2012.
The MathXL Course ID for this class is: XL0Y-K1Y2-301Y-8UI2

CALCULATOR:
A graphing calculator is strongly recommended but not required. The TI-89, TI-92, HP50g, or any other calculator capable of symbolic differentiation or integration is NOT permitted on tests. (I will check your calculator on test days) You need to bring your calculator to class every day.
Cell phone calculators are not permitted at any time.

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 = 2%
You Try Average = 3%
MathXL HW Average = 15%
Best Test Average = 60%
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.

RESTRICTIONS ON RECORDING:
A student shall not make or receive any recording, including but not limited to audio and video recordings or photographs, during any class or meeting without the faculty member’s permission. Further, the student does not have permission to post class lectures on the web.
CLASS RULES:
• Cell phones are disruptive to your learning and to my teaching. Therefore, cell phones must be turned off and put away for the duration of class. If your cell phone is out for any reason, I will confiscate it until the end of class.
• I will deduct 10 points from your next test score if you use your cell phone (for any reason) during class.
• Cheating is not permitted. Any form of academic dishonesty will result in an “F” in the course and may result in HCC disciplinary action.

ATTENDANCE:
• Attendance will be taken from a seating chart during every class. You are expected to attend every class meeting. I will not re-teach or 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 a couple friends in the class!
• Attendance counts as 2% 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 the start of class, then I will mark you absent for that day.

“YOU TRY”:
• After I teach a new topic and do several examples, I will frequently give you a problem or two that I call a “You Try” problem. Always write the “You Try” problems on an index card. You will need 15-25 index cards for the course.
• Any collected “You Try” problems will be graded based on your effort. Because you are working these problems 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) 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!
• At the end of the semester, the average of the collected “You Try” problems will count as 3% of your overall grade in the class.

HOMEWORK:
• The only way to learn math is by working exercises, so homework is required for the course. All homework will be completed online using MathXL software. The website for login is www.mathxl.com.
• If you do not have a computer at home, there are computer labs throughout campus that can be used for completing your homework assignments.
• MathXL homework is due by 11:59 p.m. on the dates specified on the attached schedule. There is one homework assignment for each section that we will be covering in the book.
• A 25% penalty will be applied to any questions submitted after the due date (and time) has passed. Your final homework average will be recorded at the start of the final exam. No homework can be completed after this time.
• You can re-work a problem as many times as necessary in MathXL until you get the correct answer. If you attempt the same problem 3 times and get it wrong (a red “x” will appear over the problem number along the top of the window), then just hit the “Similar Exercise” button and the problem will regenerate with new values. Since you can re-work missed problems, there is really no reason to not have a perfect homework score (or at least an “A”)!!!
• The two lowest homework scores will be dropped and the average of the remaining assignments will count as 15% of your class grade.
TESTS:

• There will be 5 tests, but I will drop the lowest test.

• Your “Best Test Average” is found by adding your four highest test scores plus any bonus points earned from options B, C, and D (see page 5) and dividing that sum by four. The Best Test Average counts as 60% of the course grade.

• There will be NO makeup tests. If you miss one test, your remaining four test scores will count toward your Best 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:

• The “All Test Average” is calculated by averaging the grades that I have written on the tops of all five of your returned tests. These scores will already include any bonus points you may have earned from the MathXL Test Review Assignments (Bonus Point Opportunity “A” – see page 5 for explanation of bonus points).

• If the All Test Average is a 90% or higher then you do NOT have to take the final exam. 😊

• Please note that bonus points from volunteering, blood donation, or movie worksheets are not included in the All Test Average. The All Test Average is based solely on your recorded test scores and is used ONLY to determine if you have to take the final exam or not. The Best Test Average (which does include bonus points from volunteering, blood donation, or movie worksheets) is what counts as 60% of your grade in the course.

• 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 are similar to those from the previous tests.

My Schedule

Available Office Hour times are shaded and bolded.

<table>
<thead>
<tr>
<th>Time</th>
<th>MONDAY</th>
<th>TUESDAY</th>
<th>WEDNESDAY</th>
<th>THURSDAY</th>
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<td>12:00 – 12:30</td>
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<td>12:30 – 1:35</td>
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<td>1:35 – 2:00</td>
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<td>5:00 – 7:15 p.m.</td>
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<td>Online Office Hour: 7:00 – 8:20</td>
<td>MAC 2313 - 32455 DSSC 128</td>
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COURSE OUTCOMES:

Upon completion of this course:

1. Students will be able to define, determine, and/or solve problems involving:
   a. plane curves
   b. tangent lines and arc length

2. Students will be able to define, determine, and/or solve problems involving:
   a. vectors in the plane
   b. vectors in three dimensions
   c. the dot product
   d. the vector product
   e. lines and planes
   f. surfaces

3. Students will be able to define, determine, and/or solve problems involving:
   a. functions and space curves
   b. calculus of vector-values functions (limits, derivatives, integrals)
   c. motion
   d. curvature
   e. tangential and normal components of acceleration
   f. Kepler’s Laws

4. Students will be able to define, determine, and/or solve problems involving:
   a. functions of several variables
   b. limits of functions of more than one variable
   c. continuity of functions of more than one variable
   d. partial derivatives
   e. differentiability and the total differential
   f. the chain rule
   g. directional derivatives
   h. tangent planes and normal lines
   i. extrema of functions of several variables
   j. Lagrange multipliers

5. Students will be able to define, determine, and/or solve problems involving:
   a. the double integral
   b. area and volume
   c. the double integral in polar coordinates
   d. surface area
   e. the triple integral
   f. center of mass and moments of interia
   g. cylindrical coordinates
   h. spherical coordinates
   i. change of variables and Jacobians.

6. Students will be able to define, determine, and/or solve problems involving:
   a. vector fields
   b. line integrals
   c. line integrals independent of path
   d. Green’s theorem
   e. surface integrals
   f. the divergence theorem
   g. Stokes’ theorem
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 contribute to your Best Test Average.

A. Test Reviews in MathXL: For each test, there is a “Test Review” homework assignment in MathXL. Rather than counting toward your homework grade, these test reviews will count as bonus points on the test. These Review assignments are due at class-time (5:00 p.m.) on each Test Day.

- A score of 90-100% on the MathXL Test Review will earn 2 bonus points on the class test.
- A score of 80-89% on the MathXL Test Review will earn 1 bonus point on the class 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 or 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)
   OR
2. volunteer for 8 hours (4 hours + 4 hours = 5 points × 2)
   OR
3. donate blood once (5 points) + volunteer for 4 hours (5 points)

D. I have several copies of An Inconvenient Truth and Who Killed the Electric Car? on DVD. You can “check out” a copy of these DVDs from me, watch them, and fill out the worksheet about the movie (the worksheets are located on my website: http://www.hccfl.edu/faculty-info/brooke-quinlan.aspx). Each movie/worksheet is worth 2 bonus points. If you have already seen one or both 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 both movies and complete the worksheets, you can get 4 total bonus points.

Bonus Point Opportunities Summary:

- 2 points for each Homework Set = 10 points
- Blood donation/volunteer work points from options B and/or C = 10 points
- 2 points for each movie times 2 movies = 4 points
- TOTAL NUMBER OF BONUS POINTS AVAILABLE IN THE COURSE = 24

All bonus points get added to the "Tests" portion of your grade. No bonus points will be added to the final exam, "You Try", homework, 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.

★Last day to withdraw without a grade: Friday, October 26th★
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<th>Date</th>
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