Calculus II : MATH 112-005

OPUS NO : 3658

Spring 2015

About the course

Name : MATH 112 or Calculus II, whichever you prefer.
Place : Classes in MSC W304
Time : Classes on MWF 12:00 - 12:50 PM
Book : Stewart, Single Variable Calculus Early Transcendentals, 7/e
Website : http://www.mathcs.emory.edu/~nbhaskh/M112-2015Spring/homepage.html
(We will NOT be using Blackboard too much.)

About me

Name : Nivedita Bhaskhar or N, whichever you prefer.
Email : nbhaskh AT emory DOT edu
Office : MSC W425
Hours : Mon 3:00 - 4:00 PM, Wed 10:00 - 11:00 AM or by appointment.

Before starting

Calculus I (MATH-111 or equivalent) is a prerequisite. Needless to say, a decent grasp of basic algebra will be a big help. Please let me know early on in the course about the scary topics in Calc I, so that we can work through the weak links and stabilize ourselves before the fun stuff starts!

After finishing

You will be able to solve (hard and harder!) integrals and differential equations and compute arc lengths and surface areas. You will know how to
handle infinite sequences and series, Taylor series and approximate functions using polynomials. You will know how to label points on the plane in the polar coordinate system. You might also be possessed with the strange idea that Calculus is fun. Sometimes.

**A, B, C, D, E or F**

There will be about 9 quizzes (so almost weekly!), 3 in-class exams and a cumulative final examination. The break up of points is as follows

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<table>
<thead>
<tr>
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<tbody>
<tr>
<td><strong>Quizzes</strong></td>
<td>20%</td>
</tr>
<tr>
<td><strong>Exams I, II, III</strong></td>
<td>15% each</td>
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<tr>
<td><strong>Final</strong></td>
<td>35%</td>
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Your final grade will be determined by the following grading scale

<table>
<thead>
<tr>
<th>Letter grade</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>A</td>
<td>93 – 100</td>
</tr>
<tr>
<td>A−</td>
<td>90 – 92</td>
</tr>
<tr>
<td>B+</td>
<td>87 – 89</td>
</tr>
<tr>
<td>B</td>
<td>83 – 86</td>
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<tr>
<td>B−</td>
<td>80 – 82</td>
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<tr>
<td>C+</td>
<td>77 – 79</td>
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<tr>
<td>C</td>
<td>73 – 76</td>
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<tr>
<td>C−</td>
<td>70 – 72</td>
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<tr>
<td>D</td>
<td>60 – 69</td>
</tr>
<tr>
<td>F</td>
<td>&lt; 60</td>
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**Exam dates**

<table>
<thead>
<tr>
<th>Exam</th>
<th>Date</th>
<th>Time</th>
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<tbody>
<tr>
<td>Exam I</td>
<td>Feb 11</td>
<td>12:00 - 12:50 P.M.</td>
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<tr>
<td>Exam II</td>
<td>Mar 04</td>
<td>12:00 - 12:50 P.M.</td>
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<tr>
<td>Exam III</td>
<td>Apr 15</td>
<td>12:00 - 12:50 P.M.</td>
</tr>
<tr>
<td>Final</td>
<td>May 4</td>
<td>3:00 - 5:30 P.M.</td>
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Unchangeables

1. The Final exam date and time CANNOT and WILL NOT be changed.

2. The in-class exams during the term are “required midterm examinations” so are subject to the rule described in the link mentioned in (5) below. If you know that you will have to miss an exam in advance, you must contact me well before the exam.

3. There will be NO make up quizzes or exams unless otherwise directed by the Office of Undergraduate Education for valid reasons like illness or university-sanctioned off-campus commitment. Excuses such as travel for other reasons, non-Emory exams, etc., are NOT valid reasons for missing quizzes and exams.

4. If you are absent for a quiz or an exam, you will get a zero score for it.

5. For more information, please see the section Incompletes and Absences in http://college.emory.edu/home/academic/policy/incomplete_absence.html

6. The lowest two quiz-scores will not count towards your grade. This will account for unforeseen absences for whatever reason and in general, make up quizzes will NEVER be administered.

Review sessions and quizzes

There will be review sessions before each midterm and final. And in case of excess enthusiasm, we can even have extra problem sessions! The dates of quizzes are given in the tentative schedule. You will be notified in class well in advance in case there’s any change.

Students with disabilities

Students with disabilities, please consult the Office of Disability Services as soon as possible and contact me, so that we can make arrangements.

What to do, what not to do

1. During tests, you only need a pen or a pencil (i.e NO calculators, phones, textbooks or notes).
2. Your answer papers must be neat, and legible. If an answer is not easily readable, you will receive no credit. Always show your work, label graphs (be mathematically hygienic!) No work = no credit!

3. Try to be present (physically and mentally!) in all classes. More importantly, be on time. If you do miss any material that is covered, it is your responsibility to look it up.

4. Ringing phones in class is NOT a good thing. Turn them off before class starts.

5. Follow the Honor Code. Always. It applies to all work in this course including quizzes, midterms and the final exam. 
   http://college.emory.edu/home/academic/policy/honor_code.html

6. No collaboration of any kind during any graded test in this class.

7. No cheating. ’Nuff said.

8. You will be assigned homework from time to time. Whilst they will not be collected, the quizzes will build on them. So be prepared.

9. Check the course website frequently. Some of the course notes, tests and solutions will be posted there regularly. We will NOT be using Blackboard.

10. Course announcements will be updated at http://www.mathcs.emory.edu/~nbhashkh/M112-2015Spring/announcements.html

11. Office hours are there for a reason. Use them, and NOT just a day before the exam! Also feel free to email any questions you think require only short answers. I should mostly reply within 12 hours.

12. Free tutoring is also offered to Math 112 students (Tue, Wed and Thu from 5:30pm to 7:30pm in MSC W304).
The plan

Please note that the following schedule is tentative. It might be necessary to make changes to topics and to quiz and midterm dates, but we will try to keep to this schedule as much as possible. You will be notified at least a week prior to any changes made. There will be NO change in the final exam date.

Briefly

*Sections* : 7.1, 7.2, 7.4, 7.7, 7.8, 8.1, 8.2, 9.1 - 9.5, 11.1 - 11.11, 10.2 - 10.4

The final exam will be cumulative and covers everything taught from Day I in this course, so preserve your class notes till the end!

In minute detail

1. **Jan 14 - 16**
   Review (Calc I, exp, log, trig, inv trig functions) : 1.5 - 1.6

2. **Jan 21 - 23**
   Integration (by parts) and trig integrals : 7.1 - 7.2
   *Quiz 1 on Jan 21st on 1.5 - 1.6, Calc I*

3. **Jan 26 - 30**
   Partial fractions, approximate integration : 7.4, 7.7
   *Quiz 2 on Jan 28th on 7.1 - 7.2*

4. **Feb 02 - 06**
   Improper integration, applications of integrals : 7.8, 8.1 - 8.2
   *Quiz 3 on Feb 04th on 7.4, 7.7 - 7.8*

5. **Feb 09** : Exam I review session

6. **Feb 11** : Exam I on 1.5 - 1.6, 7.1 - 7.2, 7.4, 7.7 - 7.8, 8.1 - 8.2

7. **Feb 13**
   Introduction to differential equations : 9.1

8. **Feb 16 - 20**
   More differential equations : 9.2 - 9.4
   *Quiz 4 on Feb 18th on 9.1 - 9.2*
9. **Feb 23 - 27**  
   Bye, DE. Hi, sequences and series : 9.5, 11.1 - 11.2  
   *Quiz 5 on Feb 25th on 9.3 - 9.5*

10. **Mar 02**  
   Finishing up sequences and series : 11.1 - 11.2  
   Brief Exam II review session


12. **Mar 06**  
   Integral test : 11.3

13. **Mar 09 - 13**  
   Spring Break!

14. **Mar 16 - 20**  
   Integral and comparison tests, alternating series : 11.3 - 11.5  
   *No quiz this week!*

15. **Mar 23 - 27**  
   Absolute convergence, ratio, root tests, strategies : 11.6 - 11.7  
   *Quiz 6 on Mar 25th on 11.3 - 11.5*

16. **Mar 30 - Apr 3**  
   Power and Taylor series : 11.8 - 11.10  
   *Quiz 7 on Apr 1st on 11.6 - 11.7*

17. **Apr 06 - 10**  
   Power and Taylor series continued : 11.8 - 11.10  
   *Quiz 8 on Apr 10th on 11.8 - 11.10*

18. **Apr 13** : Exam III review session

19. **Apr 15** : Exam III on 11.3 - 11.10

20. **Apr 17**  
   Applications of Taylor series : 11.11

21. **Apr 20 - 24**  
   Application of Taylor series, Polar coordinates : 11.11, 10.3 - 10.4  
   *Quiz 9 on Apr 22nd on 11.11*

22. **Apr 27** : Last class! Goodbyes, farewells and the final review session

23. **May 04** : Final Exam from 3:00 - 5:30 P.M.