UAB Department of Mathematics

MA 125-8C   Calculus I   Spring 2012   Call # 31922

Course Instructor: Dr. J. S. Hutchison
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E-mail: hutchiso@math.uab.edu
Office Hours: Mon 4-5, Tu 4-5, Th 9:30 to 11
Other times by appointment and by dropping in
Meeting Times: TuTh 5—6:50 PM     Meeting Location: UBOB 108
Prerequisite: Grade of C or better in MA 106, MA 107 or equivalent
Credit: 4 semester hours
Textbook: *Essential Calculus—Early Transcendentals* by James Stewart,
Thomson-Brooks/Cole, 2007 or later, Chapters 1-4

Important Dates:

<table>
<thead>
<tr>
<th>Event</th>
<th>Date</th>
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<tbody>
<tr>
<td>First day of classes</td>
<td>Monday, Jan 9</td>
</tr>
<tr>
<td>M L King Jr. Holiday</td>
<td>Monday, Jan 16</td>
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<tr>
<td>Last Day drop/add</td>
<td>Tuesday, Jan 17</td>
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<tr>
<td>Early Alert Begins</td>
<td>Wednesday, Jan 18</td>
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<tr>
<td>Spring Break</td>
<td>Mar 18-24</td>
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<tr>
<td>Early Alert Ends</td>
<td>Thursday, Mar 22</td>
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<tr>
<td>Last day to withdraw with “W”</td>
<td>Thursday, Mar 29</td>
</tr>
<tr>
<td>Last day of class</td>
<td>Monday, Apr 30</td>
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<tr>
<td>Weather Make-up Days</td>
<td>Tues-Wed, May 1-2</td>
</tr>
</tbody>
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| Major Exams (approximate dates) | Test I: near Tuesday, Jan 31, 2012  
|                              | Test II: near Tuesday, Feb 28, 2012  
|                              | Test III: near Tuesday, Mar 27, 2012  
|                              | Test IV: near Tuesday, Apr 24, 2012  |
| Final Exam                   | Friday, May 4, 2011, 4:30 to 7 PM  
|                              | (Location to be announced.) |

Course Policies

- Please make sure that you are able to receive e-mail through your Blazer-ID account. Your instructor will be communicating important announcements this way.
- Turn off all cell phones during class.
- If you wish to request a disability accommodation please contact Disability Support Services at 934-4205 or at dss@uab.edu.
- The two lowest quiz grades and the two lowest homework grades will be dropped to account for any missed assignments due to illness or any other circumstance. If a test is missed due to a serious verifiable circumstance or official university business, the test grade will be replaced with the properly rescaled final exam score. The instructor will need to be advised of such circumstances at the earliest possibility.
• No books, notes, or calculators will be allowed during any of the tests or quizzes.

Methods of Teaching and Learning:
• 30 class meetings of 110 minutes each consisting of lectures, discussion of examples and homework problems and group work. Time for quizzes and four in-class tests is also included.
• Students are expected to undertake at least 8 hours of private study and homework per week.
• The on-line homework system Enhanced WebAssign will be used. More information follows below on this.

Aims of the Course:
Upon successful completion of the course, a student
• understands limits from a numerical, graphical, and analytic point of view;
• can use limits to define the concepts of continuity and differentiability;
• can demonstrate a solid understanding of the major results of differential calculus;
• can apply the rules of differentiation;
• is able to apply derivatives to problems related to rates of change, linear approximations, optimization, and curve sketching; and
• knows the concepts of antiderivatives.

Course Content:
• Motivation: Slopes of curves, tangents, velocity, and other difference quotients
• Definition of limit, limit laws, limits involving infinity
• Continuity and classification of discontinuities (singularities), Intermediate Value Theorem
• Tangents, velocities, other rates of change, definition of derivative, and derivatives as functions
• Derivatives of polynomial, exponential, and trigonometric functions
• Product and quotient rules
• Chain rule, implicit differentiation, related rates
• Derivatives of inverse trigonometric and logarithmic functions
• Indeterminate forms, L’Hopital’s Rule
• Linear approximation and Newton’s Method
• Maximum and minimum values, Mean Value Theorem, shapes of curves
• Optimization Problems
• Antiderivatives, motion problems

Assessment Procedures
Student achievement will be assessed in the following ways:

a. Regular on-line homework. Homework will normally be due one week or less after a section is assigned. Feedback is provided when wrong answers are given. Students are able to retake the assignments (with randomly changed parameters) to obtain correct answers. A limited number of submissions is allowed during the time the set is available. Homework contributes 9% to the course average. Problems on tests are modeled after homework problems and quizzes. Staying on top of the on-line homework (as well as working daily practice problems) is therefore extremely important.

b. Quizzes and In-Class Group Projects. Quiz problems are modeled after homework problems and the group projects. This allows students to gauge whether they are ready to
work problems in a test situation. Quizzes and the group projects contribute **16%** to the course average.

c. Four 50-minute in-class tests which will include short questions involving basic skills (Part I), as well as problems requiring in-depth understanding (Part II). Each test contributes **10%** to the course average.

d. A 150-minute comprehensive final examination including Part I and Part II type problems. The final exam contributes **35%** to the course average.

- Your course performance is your course average (including the final exam score). This is a number between 0 and 100.

- Your final grade is determined according to the following table:

<table>
<thead>
<tr>
<th>Course performance</th>
<th>88-100</th>
<th>75-87</th>
<th>62-74</th>
<th>50-61</th>
<th>Below 50</th>
</tr>
</thead>
<tbody>
<tr>
<td>Final Grade</td>
<td>A</td>
<td>B</td>
<td>C</td>
<td>D</td>
<td>F</td>
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</tbody>
</table>

In addition, your grade may be raised by a strong performance on the final exam (normally at most one letter grade).

**TIPS**

- Help is available in the Math Learning Lab (HHB 202). Exact schedule will be posted on the math website [www.math.uab.edu](http://www.math.uab.edu). There will be **special tutoring hours for calculus.**
- Past exams given in Calculus I are posted on the math website [www.math.uab.edu](http://www.math.uab.edu) for student practice. Click on **Test Bank.**
- Regular class attendance, working steadily and regularly, and seeking help when needed will all increase your chances to succeed in this course.
- Remember that being a full-time student is a full-time job.

**How to get started on Enhanced WebAssign (the on-line homework):**

The following document and video link should walk you through the registration process and give you additional information on Enhanced WebAssign: [http://tinyurl.com/EWA-student-registration](http://tinyurl.com/EWA-student-registration)

Basic information on how to get started on WebAssign also appears below:

1. Go to [www.webassign.net](http://www.webassign.net) and click on **I Have a Class Key** in the sign in link.

2. Enter the following course key: **uab 9621 4878**

   and proceed. (If prompted for your institution, enter *uab*).

3. When prompted to purchase an access code, select… **“trial period”**. (You do not need to purchase an access code at this time. However, you must purchase an access code within two weeks for you to continue using the system beyond the two week trial period. The system will prompt you to enter your access code when the deadline approaches. (Your book may have an access code bundled with it. You must use it.)
(3) After your first registration, you can sign in as a returning user.

(4) Should you run into technical problems Enhanced WebAssign provides technical support online and/or by phone.


- Chapter 1: 1.3 – 1.6
- Chapter 2: 2.1 – 2.8, 4.6 (from Chapter 4)
- Chapter 3: [3.1 – 3.2 Review] 3.3, 3.5, 3.7
- Chapter 4: 4.1 – 4.5, 4.7

Common Courtesies for Any Class

- If you need to leave class early, it is polite to tell the instructor before the class starts. Class attendance is expected.
- Please arrive for class a few minutes early so that class can begin without interruption. If there is a problem, let the instructor know.
- Putting your head on your desk resting or sleeping during class is rude. If you need sleep, please go to your room or home, not class.