COURSE DESCRIPTION
CALCULUS II
MA 126-8C
FALL 2013

DEPARTMENT OF MATHEMATICS
UNIVERSITY OF ALABAMA AT BIRMINGHAM

Course Instructor: Terrence Muthoka
Office: CH 457
Phone#: (205) 934-2154
Office Hours: Tuesday 2pm - 4pm in HH202 (or by appointment)

Meeting location: CH 327
Prerequisite: Grade of C or better in MA 124, MA 125 or equivalent
Credits: 4 semester hours
Textbook: Essential Calculus — Early Transcendentals by James Stewart, Thomson-Brooks/Cole, 2007; Topics to be covered can be found in Chapter 10 and Chapters 5 — 8.

Important dates:
First day of classes: August 27, 2013,
Labor Day Holiday: September 2, 2013
Last day to drop without paying full tuition: September 3, 2013,
Last day to withdraw with a “W”: October 25, 2013
Fall Break: November 25 – 29, 2013,
Last day of class: December 5, 2013

Test I: near Thursday, September 12; 10.1-10.5, 10.7;
Test II: near Thursday, October 3; 5.1-5.5, 6.1-6.2;
Test III: near Thursday October 24; 6.3, 6.6, 7.1–7.2, 7.6, 10.8
Test IV: near Thursday, November 21; 8.1–8.7

(These dates are approximate and may be slightly shifted due to unforeseen circumstances.)
Final exam: 1:30 - 4:00 PM, Wednesday, December 11 (Location to be announced.)
Course policies:

- Please make sure that you are able to receive e-mail through your Blazer-ID account. Official course announcements may be sent to that address.
- If your are contacted by the Early Alert Program, you should consider taking advantage of the services it offers. Various services to assist you are also listed in the Student Resources section of the Blazernet web site.
- If you wish to request a disability accommodation please contact DSS 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. You must contact instructor of such circumstances before the exam takes place.
- No books, notes, or calculators will be allowed during any of the tests or quizzes.

Methods of teaching and learning:

- Class meetings of 1 hour and 50 minutes consisting of lectures and discussions of examples and homework problems. Time also includes quizzes and four in-class tests.
- Students are expected to undertake at least 10 hours of private study and homework per week.
- The online homework system Webassign will be used (look for more information below).

Aims of the course:

Upon successful completion of the course a student

- understands the concept of a vector, can perform basic vector calculations, and is able to use vectors to describe lines and planes in space;
- understands the concept of vector-valued functions, and is able to use vector functions to describe parametric curves, tangent vectors and velocity;
- understands the concept of definite integral;
- is able to apply the definite integral to find volumes, work, arc length, etc;
- knows the basic techniques of integration;
- is able to apply the concepts of Calculus to problems in Physics and Engineering such as work etc;
- is able to determine the convergence/divergence of improper integrals, sequences, and infinite series; and
- can find power series representations of functions and use them for approximation, evaluation of integrals and limits, etc.
Course content:
- Vectors in three dimensions, their geometric and algebraic representation, dot product and cross product
- Equations of lines and planes
- Vector-valued functions and parametric curves, tangent vectors, velocity and speed
- Riemann sums, the definite integral, area and distances
- The fundamental theorem of calculus
- Basic techniques of integration (substitution, integration by parts, partial fractions, use of tables)
- Applications of integration (area, volumes, arc length)
- Applications to Physics and Engineering
- Sequences and series, power series (Taylor/Maclaurin series)

Assessment procedures:
- Student achievement will be assessed by the following measures:
  - Regular online homework. Homework will be due on most Mondays. Feedback is provided when wrong answers are given. Students are encouraged to retake the homework problems (with randomly changed parameters) until they obtain correct answers. An limited number of takes is allowed (up to a maximum of three) during the week in which the set is available. Homework contributes 10% to the course average. Problems on tests are modeled after homework problems. Staying on top of homework is therefore extremely important.
  - Unannounced quizzes. Quiz problems are similar to the homework problem sets. This allows students to gauge whether they are ready to work problems in a test situation. Quizzes contribute 5% to the course average.
  - Four tests including short questions with limited partial credit (Part I) as well as problems requiring in depth understanding (including word-problems) for which partial credit is awarded where appropriate. Each test contributes 13% to the course average.
  - A 150-minute comprehensive final examination including Part I and Part II type problems. The final contributes 33% 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>
</tr>
</tbody>
</table>

After the final exam score and grades have been entered, grades can be checked through the web site:
www.math.uab.edu, teaching resources/check grades.
Tips:
• Help is available in the Math Learning Lab (HH 202); M–Th 9–8, F 9–5.
• By working steadily and regularly, you will increase your chances to succeed in this course.
• Remember, being a full-time student is a full-time job.

How to get started on Enhanced WebAssign:
1. Go to www.webassign.net and click on I HAVE A CLASS KEY in the signin link.
2. Enter the following course key for MA 126 8C, 5–6:50 PM:
   
   uab 3792 3560

   and proceed. (If prompted for your institution, enter uab)
3. When prompted to purchase an access code, select “... trial period” (Do not 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.)
4. After your first registration, you can sign in as returning user.
5. Should you run into technical problems Enhanced WebAssign provides technical support online and/or by phone.

• Chapter 10: 10.1 – 10.5, 10.7.
• Chapter 5: 5.1 – 5.5.
• Chapter 6: 6.1 – 6.3, 6.6.
• Chapter 7: 7.1 – 7.4, 7.6
• Chapter 8: 8.1 – 8.7.