

COURSE DESCRIPTION
CALCULUS II
MA 126–6C

DEPARTMENT OF MATHEMATICS
UNIVERSITY OF ALABAMA AT BIRMINGHAM

Course Instructor: Dr. B. Aslan
Office: CH 479
Phone#: 934-8625
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Office Hours: Monday & Wednesday, 10:30 – 11:30 a.m. or by appointment

Meeting times: MW 12:00 – 1:50 p.m.
Meeting location: HB 309
Prerequisite: Grade of C or better in 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, Chapters 5 — 8 and parts of Chapter 9.

Important dates:

First day of classes: January 7, 2008
Last day to drop/add: January 14, 2008
Martin Luther King Holiday: January 21, 2008
Last day to withdraw with a “W”: March 6, 2008
Spring Break (no classes): March 9 – 15, 2008
Last day of classes: April 23, 2008
Weather make-up day: April 24, 2008
Test I: on or near Wednesday, January 30;
Major exams: Test II: on or near Monday, February 25;
Test III: on or near Monday, March 24;
Test IV: on or near Monday, April 21.
(These dates are approximate and may be slightly shifted due to unforeseen circumstances.)
Final exam: Friday, April 25, 2008, 4:30 – 7:00 p.m. (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.

Date: January 03, 2008.

- 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 have to advise the instructor of such circumstances at the earliest possibility.
- No books, notes, or calculators will be allowed during any of the tests or quizzes.
- A project will be assigned during the term.
- If you 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.

Methods of teaching and learning:

- 29 class meetings of 110 minutes consisting of lectures and discussions of examples and homework problems. 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 online homework system ThomsonNOW 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 center of mass, moments, 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)
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Assessment procedures:

- Student achievement will be assessed by the following measures:
 - **Regular online homework.** Homework will be due more or less one week after assignment. 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 unlimited number of takes is allowed during the week in which the set is available. Homework contributes 15% to the course average. Problems on tests are modeled after homework problems. Staying on top of homework is therefore extremely important.
 - **Sporadic unannounced quizzes.** Quiz problems are taken from the homework problem sets. This allows students to gauge whether they are ready to work problems in a test situation. Quizzes contribute 15% to the course average.
 - **Four 50-minute tests in class** including short questions for which either full credit or no credit is awarded (Part I) as well as problems requiring in depth understanding (including word-problems) for which partial credit is awarded where appropriate. Each test contributes 8% to the course average.
 - **A project assigned during the term.** The project contributes 8% to the course average.
 - **A 150-minute comprehensive final examination** including Part I and Part II type problems. The final contributes 30% 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:

Course performance:	88-100	75-87	62-74	50-61	below 50
Final Grade:	A	B	C	D	F
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Tips:

- Help is available in the Math Study Hall (CH445).
 - 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.
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How to get started on Thomson Now:

- (1) Go to www.ilrn.com and click on *Create An Account*.
- (2) Click on *Student*.
- (3) Choose your school after searching for *Birmingham*.
- (4) Click the radio button under *Course Key* and enter the following course key:

E-4YWHT2RDW6RA5

Click Continue.

- (5) Enter your account information.
- (6) You will receive a confirmation email after registering.
- (7) After your first registration, you can sign in as returning user.

NOTE: If you already have an iLrn account, simply log into your existing account, click on “Register for a Course” under the “Quick Links” menu on the right side of the screen, and enter the above course key as per the instructions.

Ideally you will be able to do homework on your home computer. If this is not possible, you can find many computers on campus which will support iLrn, for example in Sterne Library, in the ETS lab in the education building, or in the Mathematics Computer Lab in CH445 . Many departments also have computer labs, which should be accessible by their majors.

Should you run into technical problems Thomson provides technical support (by either email or phone). The phone number for technical support is (888) 281-2990. Of course, you should also contact the instructor if problems can not be resolved easily.

Sections to be covered: *Essential Calculus — Early Transcendentals* by James Stewart, Thomson-Brooks/Cole, 2007.

- Chapter 10: 10.1 – 10.5, 10.7, 9.1 (from Chapter 9).
- Chapter 5: 5.1 – 5.5.
- Chapter 6: 6.1 – 6.3, 6.6.
- Chapter 7: 7.1 – 7.5, 9.2 and 10.8 (from Chapters 9 and 10, respectively).
- Chapter 8: 8.1 – 8.7.

Common Courtesies for Any Class:

- 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 to 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.
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