

COURSE DESCRIPTION
CALCULUS II
MA 126–OD, SUMMER 2019

DEPARTMENT OF MATHEMATICS
UNIVERSITY OF ALABAMA AT BIRMINGHAM

Course Instructor: Professor Alexander Blokh
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Website: <http://people.cas.uab.edu/~ablokh/teach.html>

Meeting times: MTuWTh 11:30-13:00.
Meeting location: HHB126.
Prerequisite: Grade of C or better in MA 125 or equivalent.
Credits: 4 semester hours.
Textbook: *Essential Calculus, Second Edition* by James Stewart, Thomson-Brooks/Cole, 2013, Sections 10.1-10.5, 10.7-10.8, 4.1-4.5, 5.1-5.3, 5.6, 5.8, 6.1-6.3, 6.6, 7.1-7.2, 7.6, 8.1-8.7.

Important dates:

First day of classes: Monday June 03, 2019.
Last day to drop/add classes: Monday June 10, 2019.
Independence Day (UAB Holiday): Wednesday July 04, 2019.
Last day to withdraw with a “W”: Friday July 05, 2019.
Last day of classes: Friday August 02, 2019.
Test 1: Thursday June 13, 2019; 10.1-10.5, 10.7;
Major tests: Test 2: Thursday July 11, 2019; 4.1-4.5, 5.6, 5.8, 6.1-6.3, 6.6;
Test 3: Thursday July 25, 2019; 7.1-7.2, 7.6, 10.8, 8.1-8.7.
The above dates and relevant sections are tentative; precise dates and test section numbers will be announced in class at least one week before a test.
Final exam: 4:15-6:45pm Wednesday August 7, 2019; room 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 you are contacted by the Early Alert Program, you should consider taking advantage of the services offered. These are listed in the *Student Resources* section of the Blazernet website.
- For disability accommodations contact DSS at 934-4205 or at *dss@uab.edu*.
- The two lowest weekly 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 advise the instructor of such circumstances at the earliest possibility **before** the exam takes place.
- While calculators are permitted, no books, notes will be allowed during any of the tests. If you need a basic formula, just ask me.

Methods of teaching and learning.

- 35 class meetings of 90 minutes duration consisting of lectures and discussions of examples and homework problems. Time for three in-class tests is included.
- Students are expected to undertake at least 15 hours of private study and homework per week during the term.
- The homework is assigned every Monday and is due in class on Monday a week. Late submissions will be graded for correctness, but will not count toward the course score.
- One class (typically the last class each week, or sometimes the last half of the last class) is devoted to a weekly in-class tutorial designed to provide you with assistance with the homework assignment for the week.

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, and arc length;
- knows the basic techniques of integration;
- is able to apply Calculus concepts to problems in Physics and Engineering;
- 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.

The understanding of a concept is demonstrated by an ability to solve pertinent problems related to that concept.

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, indefinite integrals and antiderivatives.
- Basic techniques of integration including substitution, integration by parts, partial fractions and the use of tables.
- Applications of integration (area, volumes, arc length).
- Applications to Physics and Engineering.
- Sequences and series, power series.

Assessment procedures.

- Student achievement will be assessed by the following measures:
 - **Regular graded homework.** Written homework will be assigned on Monday of almost every week and due in class on Monday a week. Homework contributes 30% to the course average. Problems on tests are modeled after homework problems. Staying on top of homework is therefore extremely important.
 - **Three 90-minute in-class tests.** Each test contributes 15% to the course average and typically includes a mixture of shorter questions designed to test manipulative skills, together with longer problems requiring in-depth understanding, including “word” problems.
 - **150-minute comprehensive final examination.** The final is comprehensive and contributes 25% to the course average.
- Your course performance is your course average, which is a number between 0 and 100 obtained by adding the weighted scores from the homework, tests, and final.
- 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
- After the final exam score and grades have been entered, grades may be checked via <https://www.uab.edu/cas/mathematics/resources> under the heading **Check Grades**.

Tips.

- Help is available in the Math Learning Lab (HHB202).
- Working steadily and regularly attending class increases your chances of success.
- Remember, being a full-time student is a full-time job.