

**COURSE DESCRIPTION**  
**CALCULUS II**  
**MA 126, FALL 2021**

DEPARTMENT OF MATHEMATICS  
UNIVERSITY OF ALABAMA AT BIRMINGHAM

**Course Instructor:** Dr. Li

**Office:** University Hall, Room 4006

**Phone#, E-mail:** 205-934-2154, jfi@uab.edu

**Preferred method of contact:** Email is the preferred method of contact if you have questions. Please expect a response within 24 hours on weekdays and a slower response on weekends (OR Emails received after 5 pm on Friday will be returned Monday morning). Include “ prefix, course number, and section code ” in the subject line of your email for a faster response. I am available to meet with you in person or virtually via Zoom by appointment during my office hours (see below for my scheduled office hours).

**Office Hours:** MW noon-1pm; you can also email for a private Zoom session.

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**Meeting times and location:** M-Th, 8am-8:50am, UH 2011

**Prerequisite:** Grade of C or better in MA 125 or equivalent.

**Credits:** 4 semester hours.

**Class Lecture Notes:** Download from Canvas; Chapters 2–7.

**Reference Textbook:** *Essential Calculus, Second Edition* by James Stewart, Thomson-Brooks/Cole, 2013, Chapters 4–8,10.

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**Important dates:**

**First day of classes:** Monday August 23, 2021.

**Last day to drop/add classes:** Monday August 30, 2021.

**Labor Day (UAB Holiday):** Monday September 6, 2021.

**Last day to withdraw with a “W”:** Friday October 15, 2021.

**Last day of classes:** Friday December 3, 2021.

**Major tests:** Test 1: Monday Sept. 20, 2021; Class notes 2.3-4; 3.1-4  
Test 2: Monday Oct. 11, 2021; Class notes 4.1-4; 5.1-3  
Test 3: Monday Nov. 1, 2021; Class notes 6.1-8  
Test 4: Monday Nov. 29, 2021; Class notes 7.1-6.

The above dates and sections are tentative; precise dates and test section numbers will be announced in class a week or so before a test.

**Exam Week:** December 6 – December 10, 2021.

**Final exam:** 1:30–4:00pm Wednesday December 8, 2021.

**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, consider taking advantage of their services; see *Student Resources* on the Blazernet website.
  - For disability accommodations contact DSS at 934-4205 or at *dss@uab.edu*.
  - The lowest weekly homework grade 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 that do not have access to the internet are permitted, no books or notes will be allowed during the tests, except that one  $8.5'' \times 11''$  sheet of your own construction may be used in each test/final.
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**Methods of teaching and learning.**

- 50-minute class meetings consisting of lectures and discussions of examples and homework problems. Time for four in-class tests is included.
  - Students are expected to undertake at least 10 hours of private study and homework per week during the term.
  - Thursday class is devoted to a weekly tutorial designed to provide you with assistance in completing the homework assignment for the week. The assignments are always due on Monday of each week. Late submissions will be graded for correctness, but will not count toward the course score.
  - During test weeks, the test will be given in Monday class, and Thursday class of the previous week will be used in similar fashion as a tutorial for your test review problems, which I will distribute at least a week before each test.
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**Aims of the course.** Upon successful completion of the course a student

- 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;
- 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;
- 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.

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**Course content.**

- Basic techniques of integration including substitution, integration by parts, partial fractions and the use of tables.
  - Applications of integration (area, volume, work).
  - Vectors in three dimensions, their geometric and algebraic representation, dot product and cross product.
  - Equations of lines and planes.
  - Vector functions and parametric curves, tangent vectors, arc length, velocity and speed.
  - Sequences and series, power series.
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**Assessment procedures.**

- Student achievement will be assessed by the following measures:
    - **Regular graded homework.** Written homework will be assigned on Monday of each week (except for weeks preceding a test week) and due on next Monday. Homework contributes 40% to the course average. Problems on tests are modeled after homework problems. Staying on top of homework is therefore extremely important.
    - **Four 50-minute tests.** Each test contributes 9% to the course average and typically includes a mixture of shorter questions (or parts of questions) designed to test insight and manipulative skills, together with longer problems requiring in-depth understanding, including “word” problems.
    - **150-minute comprehensive final examination.** The final is comprehensive and contributes 24% to the course average.
  - Your course performance is your course average, which is a number between 0 and 100 obtained by adding the scores, weighted as above, 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**.
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**Tips.**

- Help is available in the Math Learning Lab, if you can't find me.
  - Working steadily, regularly attending class, and asking lots of questions when you are stuck (a practice I strongly encourage !), all increase your chances of success.
  - Ultimately, you are in charge of your mathematics education, but I am more than willing to help you chart a effective path through the Calculus wilderness.
  - Remember, being a full-time student is a full-time job.
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**Class Schedule.**

Week	Monday	Thursday	next Monday
08/23 – 08/27	First Class	Tutorial	HW1 due
08/30 – 09/03		Tutorial	HW2 due
09/06 – 09/10	Labor Day Holiday	Tutorial	HW3 due
09/13 – 09/17		Test 1 Review	
09/20 – 09/24	Test 1	Tutorial	HW4 due
09/27 – 10/01		Tutorial	HW5 due
10/04 – 10/08		Test 2 Review	
10/11 – 10/15	Test 2	Tutorial	HW6 due
10/18 – 10/22		Tutorial	HW7 due
10/25 – 10/29		Test 3 Review	
11/01 – 11/05	Test 3	Tutorial	HW8 due
11/08 – 11/12		Tutorial	HW9 due
11/15 – 11/19		Test 4 Review	
11/22 – 11/26	Thanksgiving Break		
11/29 – 12/03	Test 4	Final Review/Last class	
12/06 – 12/10		Final Exam 1:30–4:00pm	

**UAB DSS Accessibility Statement.** The University of Alabama at Birmingham is committed to providing an accessible learning experience for all students. If you are a student with a disability that qualifies under Americans with Disabilities Act (ADA) and Section 504 of the Rehabilitation Act, and you require accommodations, please contact Disability Support Services for information on accommodations, registration and procedures. Requests for reasonable accommodations involve an interactive process and consist of a collaborative effort among the student, DSS, faculty and staff. If you are registered with Disability Support Services, please contact DSS to discuss accommodations that may be necessary in this course. If you have a disability but have not contacted Disability Support Services, please call (205) 934-4205, visit their website, or their office located in Hill Student Center Suite 409.

**UAB Title IX Statement.** The University of Alabama at Birmingham is committed to providing an environment that is free from sexual misconduct, which includes gender-based assault, harassment, exploitation, dating and domestic violence, stalking, as well as discrimination based on sex, sexual orientation, gender identity, and gender expression. If you have experienced any of the aforementioned conduct we encourage you to report the incident. UAB provides several avenues for reporting. For more information about Title IX, policy, reporting, protections, resources and supports, please visit UAB Title IX web page for UAB's Title IX, UAB's Equal Opportunity, Anti-Harassment, Duty to Report, and Non-Retaliation policies.

**Academic Integrity Code.** The purpose of the Academic Integrity Code is to support our academic mission and to maintain and promote academic integrity. All students in attendance at UAB are expected to pursue all academic endeavors

with integrity, honor, and professionalism and to observe standards of conduct appropriate to a community of scholars.

**Student Conduct Code.** The purpose of the University of Alabama at Birmingham (University) student conduct process is to support the vision, mission, and shared values of the University and the tenets of the University's creed, The Blazer Way. Through a student-focused and learning-centered lens, the process strives to uphold individual and community standards; foster an environment of personal accountability for decisions; promote personal growth and development of life skills; and care for the well-being, health, safety, and property of all members of the University community. The Student Conduct Code (Code) describes the standards of behavior for all students and student organizations and outlines students rights and the process for adjudicating alleged violations. It is set forth in writing in order to give general notice of non-academic prohibited conduct. The Code should be read broadly and is not designed to define non-academic conduct in exhaustive terms. All students and student organizations are expected to conduct themselves in accordance with the Code. The current version of the Code, which may be revised periodically, is available from the Office of Student Conduct & Outreach or online.