

COURSE DESCRIPTION
CALCULUS II – MA 126 - 8C
CALL # 51932
FALL 2022

DEPARTMENT OF MATHEMATICS
UNIVERSITY OF ALABAMA AT BIRMINGHAM

Course Instructor: Professor M.N. Nkashama
Office: UH 4033
Phone#: (205) 934-2154 (Math Department)
E-mail: nkashama@uab.edu
Office Hours: Monday 11:00 AM – 1:00 PM (or by appointment)

Meeting times: TR 5:00 PM – 6:50 PM
Meeting location: UH 2005
Prerequisite: Grade of C or better in MA 125, MA 225 or equivalent
Credits: 4 semester hours
Textbook: *Essential Calculus, 2nd Edition* by James Stewart, Thomson-Brooks/Cole, 2013 (**must have Enhanced WebAssign Access Code**); Topics to be covered can be found in Chapters 5 — 8 and Chapter 10. (See below for more detail.)

Important dates:

First day of class: August 22, 2022
Last day to drop/add (without paying full tuition): August 29, 2022
Labor Day Holiday: September 05, 2022
Last day to withdraw with a “W”: October 14, 2022
Fall/Thanksgiving Break: November 21 – 27, 2022
Last day of class: December 02, 2022

Test I: near Tuesday, September 13;
Sections: 4.5, 5.1 – 5.3, 5.6, 5.8, 6.1 – 6.3;
Test II: near Tuesday, October 04;
Sections: 6.5-6.6, 7.1–7.3, 7.6;
Major exams (tests): Test III: near Tuesday, October 25;
Sections: 8.1 – 8.7;
Test IV: near Thursday, November 17;
Sections: 10.1–10.5, 10.7 – 10.8

(These dates are approximate and may be slightly shifted due to unforeseen circumstances.)

Common Final exam: Wednesday, December 07, 1:30 PM – 4:00 PM (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 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.
 - If you wish to request a disability accommodation please contact DSS at 934-4205 or at dss@uab.edu (see below).
 - 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 serious verifiable circumstances 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 **before** the exam takes place. A missed final exam gets a score of zero.
 - No books or notes will be allowed during any of the tests or quizzes.
 - Calculators which do not have access to the internet will be allowed during tests and/or quizzes.
 - A $5'' \times 8''$ Quick Reference Card made by the student will also be allowed on all major exams (tests and final exam), but not on quizzes.
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Methods of teaching and learning:

- Class meetings of 110 minutes consisting of lectures and discussions of examples and homework problems. Time also includes quizzes and four (**50-minute**) 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).
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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.

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.

Assessment procedures:

- Student achievement will be assessed by the following measures:
 - **Regular homework.** Homework will be due generally on Mondays. Feedback is provided online when wrong answers are given. Students are encouraged to retake the homework problems (with randomly changed parameters) until they obtain correct answers. Online homework contributes 5% to the course average.
In addition to the online homework, regular (on-paper) homework will also be assigned to be turned in on paper for grading. (See below for the contribution of the on-paper homework to the course average.)
Please keep in mind that problems on tests are usually 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.
 - **Class Attendance and group work** The roll will be taken at the beginning of each class meeting. If you are unable to attend class, you must email me **before** that class takes place and bring a **verifiable excuse** later. Students will also be required to work in small groups under the supervision of the course instructor.
 - Quizzes, on paper-homework and group work contribute 25% to the course average.
 - **Four in class tests** including short questions with no or 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 10% 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

- 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); M–Th, 9:00 AM –8:00 PM, F 9:00 AM –3:00 PM. It is closed during official UAB holidays and breaks. Limited hours are available during final exams.
- Past exams given in Calculus II are posted on the math dept website www.math.uab.edu for student practice. Click on *Calculus Testbank* under the *Student Resources* link.
- 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 *sign in* link.
- (2) Enter the following course key for MA 126 – 8C, 5:00 PM – 6:50 PM:
uab 4636 3813
and proceed. (If prompted for your institution, enter *uab*)
- (3) When prompted to purchase an access code, select “... **trial period.**” (However, you must enter a ‘permanent’ 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.) **If you already have an active WebAssign account associated with this edition of the textbook, you may simply add this course to your account by using the above Course Key.**
- (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.
<https://webassign.com/support/student-support/>

Sections to be covered: *Essential Calculus, 2nd Edition* by James Stewart, Thomson-Brooks/Cole, 2013.

- Review for Chapter 4: 4.2 – 4.5.
 - Review for Chapter 5: 5.1 – 5.3.
 - Chapter 5: 5.6, 5.8.
 - Chapter 6: 6.1 – 6.3, 6.5 – 6.6.
 - Chapter 7: 7.1 – 7.3, 7.6.
 - Chapter 8: 8.1 – 8.7.
 - Chapter 10: 10.1 – 10.5, 10.7 – 10.8
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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.