

Howard University, Mathematics Department
Course : Calculus III, Math 158-01,

Fall Semester 2024

Place and Time: MWRF : ILH 116 2:10 P.M. - 3:00 P.M.

Contact Information

- Office : ASB 219
- Office Hours : MW 11:10 A.M. - 12:00 P.M., TH-F 1-2pm and by appointment
- E-mail address : ssitaraman AT howard.edu (NOT bison.howard.edu)

I. Course Description

This course will extend the concepts of limits, differentiation, and integration to two or more dimensions. Topics will include vector valued functions, partial differentiation, directional derivatives, optimization, multiple integration, Fubini's Theorem, line and surface integrals, and the theorems of Green, Gauss and Stokes.

II. Course Objectives

A student completing the course successfully will be able to:

- Analyze space curves including their curvature, arc length, velocity, and acceleration.
- Analyze surfaces using partial differentiation and the gradient operator.

- Solve optimization problems in several variables.
- Find areas, volumes, and moments using multiple integrals.
- Combine the concepts of surfaces, space curves and vector fields into multiple integrals and surface integrals.
- Apply the Fundamental Theorems of Calculus in multiple dimensions : The fundamental Theorem for Line Integrals, Green's Theorem, Stokes' Theorem, Gauss' Theorem.

IV. Materials

- Textbook (required) : Calculus : Early Transcendentals, 9th ed. e-textbook, James Stewart.
- Graphing calculator (recommended) : TI-84, TI-83+, or TI-83.
- Web assign account (included with purchase of e-textbook).
- Recommended that you enrol in webassign course by first using code you got from book purchase to register at [cengage.com](https://www.cengage.com) and then use the code "howard 1929 1378" to register in course. It gives you access to e-book, practice problems, tutorials, etc.,

V. General Rules

To ensure courtesy and decorum headphones should be turned off, and cell phones and laptops should be turned off/closed except when directed by the instructor. The student is expected to read and to understand the contents of this document. If the instructor makes any changes to this document, they will be announced in class in a timely manner. The student is responsible for being aware of any such changes, even if the student is absent when an alteration to this document is announced.

VI. Grading

The instructor will use the following weights to compute the grade of each student.

2 Tests (best of 3)	100 points each	1/3 of grade
Best 7 Quizzes	30 points each	1/3 of grade
Final Exam	200 points	1/3 percent of grade

- **Tests**
The student will be required to complete at least 2 of 3 tests which will be administered during class time. The date for the test will be announced at least one week before it is given. A student may attempt each of these tests for a grade only once.
- **Quizzes**
At least 8 quizzes will be administered, and the highest 7 scores will count toward the student's grade. There will be no make-ups

for quizzes. A student may attempt each quiz only once for a grade.

- **Final exam:** This exam can include material that encompasses any of the topics covered in the course. The student is required to take the final exam at this designated time. A student may attempt the final exam for a grade only once.

- **Absence policy**
A student who is absent from class is responsible for obtaining the subject material and/or information disseminated during class.

- **Unscheduled campus closure policy**
If Howard University is closed for students when a test is scheduled, the student will complete the test during the first 2:10 P.M. - 3:00 P.M. class period that occurs when student attendance resumes.

- **Excused absence policy for scheduled test, graded assignment**
If a student is absent from class when a test is administered, the teacher will only excuse the absence if the student provides documentation which satisfies the following criteria :
 - (a) The document indicates that the student was absent for a reason which the instructor determines to be legitimate.

 - (b) The document is written and signed by a qualified individual and contains verifiable contact information.

- (c) The document indicates the dates and time of the student's absence, which must include the time and day the test was administered and if necessary any period of continued absence immediately following the test.

A student planning to make up a test must present supporting documentation to the instructor within two class periods of returning and make-up the test within the time period designated by the teacher.

A student who expects to be absent prior to a test must provide supporting written documentation at least two class periods before the test date. In such a situation the student can only make up the test before the announced test is administered to the class. In this case it is the responsibility of the student to make arrangements with the instructor to take a test prior to the announced date.

If the absence of the student is not deemed excusable by the teacher, or the student does not follow the protocol for an excused absence, this student will receive a grade of zero for the missed test.