Calculus III

MAT 207 – Wesleyan College

Syllabus

Summer 2023, May 29 - June 30

Professor Contact Information

Professor: TBA

Office Hours: by appointment

Contact Information: TBA

> **Text/ISBN:** *Calculus*, 10th Edition, Ron Larson. ISBN: 1285057090
>
> **You are required to purchase access to the online homework system: WebAssign. This comes with access to an e-book, so purchasing the physical textbook is optional. You will also need a graphing calculator (TI recommended).**

Policies and Procedures

Course Goals
Topics include parametric equations, vectors in the plane and 3-space, directional derivatives and curvature, quadric surfaces, cylindrical and spherical coordinates, differential calculus of functions of two and three variables and multiple integration.

Prerequisites
MAT 206 Calculus II or equivalent

Credit Hours
3

Participation and Grading
Your grade in this course will be determined by your performance in the following categories:

Assignments	Percentage
Online Homework	15%
Written Assignments	10%
Exams	50%
Final Exam	25%
Total	**100%**

Grading Scale:

The grading scale in the class will be as follows:

      A=90-100%

      B=80-89%

      C=70-79%

      D=60-69%

      F=59% And Below

You may track your running point total throughout the term via our course site. Please be aware, however, that the course grade you see in the site will reflect only assignments and activities you have already completed and that your professor has graded.

Academic Integrity

Wesleyan's College expects student to show integrity in all of their work. Cheating, plagiarism, unauthorized collaboration, inventing or falsifying information, turning in work for more than one class without authorization, or helping someone else are all violations of the Honor Code and are not tolerated. Any of these forms of cheating will not be tolerated and will be grounds for a grade of zero on the exam or assignment and a grade of F for the course, in addition to any penalties imposed by the Provost.

Potential Changes to Course Schedule

The following week-to-week schedule is a general plan for the course. Deviations may be necessary and will be announced in advance via announcement and/or e-mail. Students should check their course site announcements and emails at least once every twenty-four hours throughout the term to watch for updates regarding this course.

Course Schedule

Week 1

Vectors & the Geometry of Space
Section 11.1: Vectors in the Plane
Section 11.2: Space Coordinates & Vectors in Space
Section 11.3: The Dot Product of Two Vectors
Section 11.4: The Cross Product of Two Vectors in Space
Section 11.5: Lines and Planes in Space
Section 11.6: Surfaces in Space
Section 11.7: Cylindrical and Spherical Coordinates

Week 2:

Vector-Valued Functions & Functions of Several Variables
Section 12.1: Vector-Valued Functions

Section 12.2: Differentiation and Integration of Vector-Valued Functions
Section 12.3: Velocity & Acceleration
Section 12.4: Tangent Vectors & Normal Vectors
Section 12.5: Arc Length & Curvature
End of Exam #1 Material

Section 13.1: Introduction to Functions of Several Variables
Section 13.2: Limits and Continuity
EXAM #1 (Chapters 11 & 12)

Week 3

Functions of Several Variables & Multiple Integration
Section 13.3: Partial Derivatives
Section 13.4: Differentials
Section 13.5: Chain Rules for Functions of Several Variables
Section 13.6: Directional Derivatives and Gradients
Section 13.7: Tangent Planes & Normal Lines
Section 13.8: Extrema of Functions of Two Variables
Section 13.9: Applications of Extrema
Section 14.1: Iterated Integrals & Area in the Plane

Week 4

Multiple Integration & Vector Analysis
Section 14.2: Double Integrals & Volume
Section 14.3: Change of Variables: Polar Coordinates
Section 14.5: Surface Area
Section 14.6: Triple Integrals & Applications
Section 14.7: Triple Integrals in Other Coordinates
End of Exam #2 Material

Section 14.8: Change of Variables: Jacobian
EXAM #2 (Chapters 13 & 14, excluding 14.8)

Week 5:

Vector Analysis
Section 15.1: Vector Fields
Section 15.2: Line Integrals
Section 15.3: Conservative Vector Fields and Independence of Path
Section 15.4: Green's Theorem
FINAL EXAM (Cumulative)

Civility in the Academic Community

Students, faculty, and staff are expected to treat one another with respect in all interactions both during class meetings and on the Moodle course site. Rude, disruptive and/or disrespectful behaviors as determined by a faculty member interfere with other students' rights and with the professor's ability to teach. Therefore, any student exhibiting unacceptable behaviors during a class meeting or Moodle collaborative activity will be asked to leave and will be counted absent for that class period or activity. Failure to cooperate with this process will result in disciplinary action that may include withdrawal from the class or dismissal from the College. Violations will be reported to the Provost.

Disabilities Statement

Wesleyan College is committed to equal education, full participation and access to facilities for all students. Any student who requires reasonable academic accommodations, use of auxiliary aids or facility access for a class must first register with Disability Resources by contacting Jill Amos, Director of Disability and Advocacy Services, jamos@wesleyancollege.edu or (478) 757-5219. If reasonable accommodations are established, students should request Accommodation Letters from Disability Resources then schedule an appointment to meet with the professor to determine how the accommodations will be implemented for each class as early in the semester as possible. Accommodations require advance notice to implement and will not be retroactively administered for the semester. Accommodations that decrease the integrity of a course will not be approved.

Privacy in Teaching & Learning Spaces

In order to promote an environment in which ideas may be freely expressed, the interior offices; in-person and virtual classrooms; and Moodle course sites at Wesleyan are private spaces. The unauthorized creation of photographic images, audio recordings, or video recordings of students or faculty in these spaces is considered to be disruptive behavior which may result in a student's removal from class according to the professor's discretion. The distribution of unauthorized images or recordings, or of class meeting recordings shared by a professor for instructional purposes, without the express written permission of the College is strictly prohibited and is subject to disciplinary action by the Provost of the College.