廣西大學 GUANGXI UNIVESITY

Course Title:	Calculus III		
Course Number:	1010083		
Semester:	Summer 2026		
Total Contact Hours:	56 Hours	**Instructor:**	TBA
Credits:	4	**Email:**	TBA
Class Schedule:	TBA	**Office Location**:	TBA

Course Prerequisite(s): None

Course Description:

This course extends calculus concepts to functions of several variables, covering vector calculus, partial derivatives, multiple integrals, and vector fields. Students will learn to analyze functions in three-dimensional space and apply calculus tools to problems in physics, engineering, and economics. The course emphasizes both theoretical understanding and practical problem-solving skills.

Required Textbook: Stewart, J. (2016). Calculus: Early Transcendentals (8th ed.). Cengage Learning.

Learning Outcomes: *After completing* this **course***, students will able to*

- Analyze and graph functions of several variables in three-dimensional space;
- Compute partial derivatives and apply them to optimization problems;
- Evaluate multiple integrals in various coordinate systems;
- Understand and apply vector calculus concepts including gradient, divergence, and curl;
- Use Green's, Stokes', and Divergence theorems to relate different types of integrals.

Homework Assignments:

- The assignments will be posted on the course web page at least one week before the due date.

- The due dates of the assignments will be also indicated by the instructor.
- Late homework is not accepted.

Grading Evaluation:

EXAMS	PERCENT	GRADE	PERCENTAGE
Assignments	20%	A+	96-100
Quizzes	20%	A	90-95
Midterm Exam	20%	A-	85-89
Final Exam	40%	B+	82-84
Total	100%	B	78-81
		B-	75-77
		C+	71-74
		C	66-70
		C-	62-65
		D	60-61
		F	< 60

Course Outline:

Class Number	Topics
1	Three-Dimensional Coordinate Systems
2	Dot Product and Projections
3	Cross Product and Applications
4	Equations of Lines and Planes
5	Cylinders and Quadric Surfaces **Quiz 1**
6	Vector Functions and Space Curves
7	Derivatives and Integrals of Vector Functions
8	Arc Length and Curvature
9	Functions of Several Variables

10	Limits and Continuity in Multiple Variables
11	Partial Derivatives
12	**Midterm Exam**
13	Tangent Planes and Linear Approximations
14	Chain Rule for Multiple Variables
15	Directional Derivatives and Gradient Vectors
16	Maximum and Minimum Values
17	Lagrange Multipliers **Quiz 2**
18	Double Integrals over Rectangles
19	Double Integrals over General Regions
20	Double Integrals in Polar Coordinates
21	Applications of Double Integrals
22	Triple Integrals in Cartesian Coordinates
23	Triple Integrals in Cylindrical/Spherical Coordinates
24	**Final Exam**

Attending Policy：

Regular and prompt attendance is required. Under ordinary circumstances, you may miss two times without penalty. Each absence over this number will lower your course grade by a third of a letter and missing more than five classes may lead to a failing grade in the course. Arriving late and/or leaving before the end of the class period are equivalent to absences.

Policy on "Late Withdrawals"：

In accordance with university policy, appeals for late withdrawal will be approved ONLY in case of medical emergency and similar crises.

Academic Honesty：

Guangxi University expects all students to do their own work. Instructors will fail assignments that show evidence of plagiarism or other forms of cheating, and will also

report the student's name to the University administration. A student reported to the University for cheating is placed on disciplinary probation; a student reported twice is suspended or expelled.

General Expectations: Students are expected to

- Attend all classes and be responsible for all materials covered in class and otherwise assigned;
- Complete the day's required reading and assignments before class;
- Review the previous day's notes before class and make notes about questions you have about the previous class or the day's reading;
- Participate in class discussions and complete required written work on time;
- Refrain from texting, phoning or engaging in computer activities unrelated to class during the class period;
- While class participation is welcome, even required, you are expected to refrain from private conversations during the class period.

Special Needs or Assistance：

If you have a documented learning disability, a medical condition, or any other circumstance that may affect your ability to learn or to demonstrate your learning in this course, please contact the Administrative Office promptly. Our goal is to work with you to provide appropriate accommodations, not to let extraneous circumstances unfairly impact your assessment.