



---

**JOHN CABOT UNIVERSITY**

COURSE CODE: "MA 298"  
COURSE NAME: "Calculus II"  
SEMESTER & YEAR: **Summer Session I 2024**

**SYLLABUS**

**INSTRUCTOR:** Barry Griffiths  
**EMAIL:** bgriffiths@johncabot.edu  
**HOURS:** MTWTH 11:10 AM 1:00 PM  
**TOTAL NO. OF CONTACT HOURS:** 45  
**CREDITS:** 3  
**PREREQUISITES:** Co-requisite: MA 350 Linear Algebra  
**OFFICE HOURS:** 10-11am on the outdoor balcony of the Guarini Campus

---

**COURSE DESCRIPTION:**

This course builds on the fundamentals of the calculus of one variable, and includes infinite series, power series, differential equations of first and second order, numerical integration, and an analysis of improper integrals. It also covers the calculus of several variables: limits, partial derivatives, and multiple integrals.

**SUMMARY OF COURSE CONTENT:**

The course is a further development of calculus at a more advanced level. After covering traditional topics such as techniques of integration, differential equations and the study of several variables, attention is given to applications (constrained optimization, Lagrange multipliers, Numerical approximation, Taylor series, etc.).

**LEARNING OUTCOMES:**

Upon successful completion of this course, students should be able to:

- Calculate the limiting value of a geometric and telescoping series.
- Determine whether a given series converges or diverges.
- Calculate the dot product, cross product, and angle between two vectors.
- Determine the equations of lines and planes in three-dimensional space.
- Calculate limits of two variable functions.
- Find the partial derivatives of two variable functions.
- Maximize and minimize two variable functions.
- Set up and calculate double integrals using rectangular and polar coordinates.
- Set up and calculate triple integrals using rectangular, cylindrical, and spherical coordinates.
- Parameterize lines and curves in two and three-dimensional space.
- Set up and calculate line integrals.
- Apply the Fundamental Theorem of Line Integrals and Green's Theorem.

**TEXTBOOK:**

NONE

**REQUIRED RESERVED READING:**

NONE

**RECOMMENDED RESERVED READING:**

NONE

**GRADING POLICY**

**-ASSESSMENT METHODS:**

Assignment	Guidelines	Weight
3 Quizzes	Three short quizzes will be given. They will be of a similar standard to the homework questions assigned, and will contribute 15% towards your overall score.	15%
5 Homework Assignments	Homework will be assigned from each section covered, and then collected during the last day of each week. It will be graded on the basis of completion, mathematical accuracy, and presentation, and will contribute 15% towards your overall score.	15%
2 Exams	There will be two exams. They will each contribute 35% towards your overall score.	70%

**-ASSESSMENT CRITERIA:**

A 90-100% A- 87-89%  
B 80-86% B- 77-79%  
C 70-76% C- 67-69%  
D 60-66% D- 57-59%  
F 0-56%

**-ATTENDANCE REQUIREMENTS:**

It is strongly recommended that you attend all lectures due to the pace of the course. Two points will be deducted from graded work that is not collected.

You cannot make-up a major exam (midterm or final) without the permission of the Dean's Office. The Dean's Office will grant such permission only when the absence was caused by a serious impediment, such as a documented illness, hospitalization or death in the immediate family (in which you must attend the funeral) or other situations of similar gravity. **Absences due to other meaningful conflicts, such as job interviews, family celebrations, travel difficulties, student misunderstandings or personal convenience, will not be excused.** Students who will be absent from a major exam must notify the Dean's Office prior to that exam. Absences from class due to the observance of a religious holiday will normally be excused. Individual students who will have to miss class to observe a religious holiday should notify the instructor by the end of the Add/Drop period to make prior arrangements for making up any work that will be missed. The final exam will be given on the 21st of June.

**ACADEMIC HONESTY**

As stated in the university catalog, any student who commits an act of academic dishonesty will receive a failing grade on the work in which the dishonesty occurred. In addition, acts of academic dishonesty, irrespective of the weight of the assignment, may result in the student receiving a failing grade in the course. Instances of academic dishonesty will be reported to the Dean of Academic Affairs. A student who is reported twice for academic dishonesty is subject to summary dismissal from the University. In such a case, the Academic Council will then make a recommendation to the President, who will make the final decision.

**STUDENTS WITH LEARNING OR OTHER DISABILITIES**

John Cabot University does not discriminate on the basis of disability or handicap. Students with approved accommodations must inform their professors at the beginning of the term. Please see the website for the complete policy.

---

**SCHEDULE**

---

Monday May 20 – Sequences & Series

Tuesday May 21 – Sequences & Series

Wednesday May 22 – Sequences & Series

Thursday May 23 – Review, **Quiz**

Monday May 27 – Vectors & Dot Product

Tuesday May 28 – Cross Product & Equation of a Line

Wednesday May 29 – Equation of a Plane & Quadric Surfaces

Thursday May 30 – Review, **Quiz**

Monday June 3 – Functions of Two Variables & Limits

Tuesday June 4 – Partial Derivatives & Linear Approximations

Wednesday June 5 – Chain Rule & Optimization

Thursday June 6 – **EXAM 1**

Monday June 10 – Lagrange Multipliers & Coordinate Systems

Tuesday June 11 – Double Integrals

Wednesday June 12 – Double Integrals

Thursday June 13 – Review, **Quiz**

Monday June 17 – Triple Integrals

Tuesday June 18 – Parametric Equations & Vector Functions

Wednesday June 19 – Vector Fields & Line Integrals

Thursday June 20 – Conservative Vector Fields & Green's Theorem

Friday June 21 – **EXAM 2**