

MATH 2302—Calculus II
Four Semester Hours

QV
11/13

PREREQUISITES:

University Requisite: C or better in MATH 2301

Other: The prerequisite for this course is C or T or better in 2301 Calculus I (or equivalent). This course replaces Math 263B and Math 263C from the quarter system.

COURSE DESCRIPTION:

Second course in calculus and analytic geometry with applications in the sciences and engineering. Includes techniques of integration, conic sections, polar coordinates, infinite series, vectors and vector operations.

METHODS OF COURSE INSTRUCTION:

All material for this course is print-based. Instructor and students communicate and exchange materials through postal mail.

E-PRINT OPTION:

In this course, an option exists to use e-mail to submit your lesson assignments. Your assignment will be returned to you either as an e-mail attachment or as a hard copy sent through the postal mail, depending on the preferences of the instructor and/or program.

TEXTBOOKS AND SUPPLIES:

Stewart, James. *Essential Calculus: Early Transcendentals*. Brooks/Cole, 2007.
[ISBN: 9781133112280]

This book is suitable both for liberal arts students and for students of engineering, science, and other technical areas. It is written in a clear, concise manner and contains many examples to illustrate various concepts and theorems of Calculus and many problems to help you practice and test your knowledge. All odd-numbered problems have answers in the appendix. Most of the problems in your writing assignments are odd-numbered, so that you can check your work before submitting it to me for grading.

Calculator

Using hand-held calculators is an option and not necessary to do the writing assignments, but you may use them to do calculations and to check your work. Calculators are **not required** and may not be used on examinations.

NUMBER OF LESSONS:

The course has ten lessons complete with graded assignments and two supervised course examinations. Specific instructions are given in each lesson. To do the writing assignments well, you need first to complete the reading assignments and have a good understanding of all new concepts, definitions, and theorems. The lessons include:

- Lesson 1: Integration by Parts, Partial Fractions, and Approximation of Integrals
- Lesson 2: Improper Integrals; Applications of Integrals to in Areas and Volumes
- Lesson 3: Some Applications of Integrals: Work, Moments, Center of Mass, and Solving Differential Equations
- Lesson 4: Sequences and Series
- Lesson 5: Other Tests of Convergence, Absolute and Conditional Convergence, and Power Series
- Lesson 6: Midcourse Examination Information
- Lesson 7: Representation of Function by Power Series; Taylor and Maclaurin Series
- Lesson 8: Parametric Curves, Curves in Coordinates
- Lesson 9: Vector Calculus
- Lesson 10: Equations of Lines, Planes, Cylinders, and Quadratic Surfaces
- Lesson 11: Vector Functions and Motions in Space
- Lesson 12: Final Examination Information

TYPES OF WRITING ASSIGNMENTS:

I suggest that you complete one lesson every two weeks. Each lesson contains one or more reading assignments and a writing assignment, which you are to submit for my evaluation. Each writing assignment will ask you to solve a number of problems from the textbook. These problems should be worked in detail (showing all your work), so that I can follow your line of reasoning in the solutions of the problems and can comment on your solutions. This will help you understand what you have done right and wrong and will help you on future assignments.

GRADING CRITERIA:

Writing Assignments	30%
Midcourse	35%
Final	35%