GAVILAN COLLEGE
5055 Santa Teresa Blvd
Gilroy, CA 95023

Course Outline

COURSE: MATH C2220 DIVISION: 20 ALSO LISTED AS: MATH 1B

TERM EFFECTIVE: Fall 2027 CURRICULUM APPROVAL DATE: 05/12/2026

SHORT TITLE: CALC II: EARLY TRANSCENDENTALS

LONG TITLE: Calculus II: Early Transcendentals

Units	Number of Weeks	Type	Contact Hours/Week	Total Contact Hours
4	18	Lecture:	4	72
		Lab:	0	0
		Other:	0	0
		Total:	4	72

Out of Class Hrs:	144.00
Total Learning Hrs:	216.00

COURSE DESCRIPTION:

A second course in differential and integral calculus of a single variable. Topics include applications of integration, techniques of integration, infinite sequences and series, and the calculus of parametric and polar equations. This course is primarily intended for Science, Technology, Engineering, and Mathematics (STEM) majors. Part 2: Also known as MATH 1B. C-ID(MATH 220). PREREQUISITE: Calculus I: Early Transcendentals (MATH C2210), or equivalent, or placement as determined by the college's multiple measures assessment process.

PREREQUISITES:

Calculus I: Early Transcendentals (MATH C2210), or equivalent, or placement as determined by the college's multiple measures assessment process.

CREDIT STATUS: D - Credit - Degree Applicable

GRADING MODES

L - Standard Letter Grade

REPEATABILITY: N - Course may not be repeated

SCHEDULE TYPES:

02 - Lecture and/or discussion

05 - Hybrid

71 - Dist. Ed Internet Simultaneous

72 - Dist. Ed Internet Delayed

STUDENT LEARNING OUTCOMES/COURSE OBJECTIVES:

By the end of this course, a student should:

1. Apply integration to find areas and volumes.
2. Evaluate definite and indefinite integrals using a variety of integration formulas and techniques.
3. Use integration to solve applications such as work or length of a curve.
4. Evaluate improper integrals.
5. Determine convergence of sequences and series.
6. Represent functions as power series.

COURSE CONTENT:

1. Applications of integration to areas between curves and volumes, including volumes of solids of revolution
2. Techniques of integration, including integration by parts, trigonometric substitution, and partial fraction decomposition
3. Numerical integration, including trapezoidal and Simpson's rules
4. Improper integrals
5. Additional applications of integration, such as work, arc length, area of a surface of revolution, moments and centers of mass, separable differential equations, growth and decay
6. Introduction to sequences and series
7. Multiple tests for convergence of sequences and series
8. Power series, radius of convergence, interval of convergence
9. Differentiation and integration of power series
10. Taylor series expansion of functions
11. Parametric equations and calculus with parametric curves
12. Polar curves and calculus in polar coordinates

Part 2:

Curriculum Approval Date: 05/12/2026

METHODS OF INSTRUCTION:

Instruction will follow a standard lecture/discussion format. Extensive homework will be assigned in order to assure mastery of the concepts covered in class. Students will also be required to utilize technology to enhance their understanding of the material.

OUT OF CLASS ASSIGNMENTS:

Required Outside Hours 144

Assignment Description

Reading assigned text book sections, reviewing textbook examples and class notes (20 hours)

Completing assigned homework problems; group projects (100 hours)

Studying for a test, reviewing problem-solving techniques (20 hours)

Online discussions (4 hours)

METHODS OF EVALUATION:

Other methods of evaluation

Evaluation Percent 100

Evaluation Description

Students should demonstrate their mastery of the learning objectives and their ability to devise, organize, and present complete solutions to problems.

Examples of potential methods of evaluation include, but are not limited to, exams, quizzes, homework, classwork, technology-based activities, laboratory work, projects, and research demonstrations.

Methods of evaluation are at the discretion of local faculty.

REPRESENTATIVE TEXTBOOKS:

Calculus: Single Variable Calculus Early Transcendentals. 9th ed., Stewart, J., et al., Cengage, 2021 or a comparable textbook/material.

ISBN: ISBN-13: 978-1337613927

13 Grade Verified by: Microsoft Word

Strang, G., Herman, E., et al. (2016 & Web 2025). Calculus Volume 2. OER: OpenStax. https://openstax.org/details/books/calculus-volume-2/

Briggs, W., et al. (2019). Calculus: Early Transcendentals. 3rd ed.: Pearson.

Hass, J., et al. (2023). Thomas' Calculus: Early Transcendentals. 15th ed.: Pearson.

ARTICULATION and CERTIFICATE INFORMATION

GAV GE:

GAV B4
GAV Area 2

CSU GE:

CSU B4

IGETC:

IGETC 2A

CALGETC:

CALGETC Area 2

CSU TRANSFER:

Transferable CSU

UC TRANSFER:

Transferable UC

SUPPLEMENTAL DATA:

Basic Skills: N
Classification: Y
Noncredit Category: Y
Cooperative Education:
Program Status: 1 Program Applicable
Special Class Status: N
CAN: MATH20
CAN Sequence: MATH SEQ BC
CSU Crosswalk Course Department: MATH
CSU Crosswalk Course Number: 220
Prior to College Level: Y
Non Credit Enhanced Funding: N
Funding Agency Code: Y
In-Service: N
Occupational Course: E
Course Control Number: CCC000204947
Sports/Physical Education Course: N
Taxonomy of Program: 170100
CIP: 270101