



SCIENCE, TECHNOLOGY, ENGINEERING AND MATHEMATICS (STEM) DIVISION
 1400 TANYARD ROAD, SEWELL, NJ 08080
 856-468-5000

MAT 122-01: CALCULUS II
Spring 2016 SYLLABUS
15 WEEKS
LECTURE HOURS/CREDITS: 4/4

INSTRUCTIONAL METHOD: Lecture

Greg Buthusiem, Instructor
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Office: CC 157; Phone: 856-415-2175
Office Hours: Posted

It is the responsibility of the student to review the RCGC Information and Policies, as well as the Online Syllabus at www.rcgc.edu/syllabi

TEXTBOOK AND COURSE MATERIALS

- Calculus by Larson, 10th Edition, ISBN #9781285057095, Publisher: Cengage

Please see current textbook prices at www.rcgc.bncollege.com

PREREQUISITES

MAT 108 is the prerequisite for MAT 122.

GENERAL COURSE DESCRIPTION

This is a study of integral calculus and its applications. Topics include areas bounded by curves, volumes and surface areas of solids and revolution, arc length, integration by special methods, improper integrals, transcendental functions and infinite series.

MAT 122 CORE COMPETENCIES

This course focuses on one of RCGC’s Core Competencies:

- Quantitative Knowledge and Skills

STUDENT LEARNING OUTCOMES: MAT 122 - CALCULUS II

Successful completion of MAT 122 will help students:	RCGC Core Competencies	Evaluation / Assessment
1. Differentiate and integrate transcendental functions.	- Quantitative Knowledge and Skills	- Tests and Quizzes
2. Use integrals in applications.	- Quantitative Knowledge and Skills	- Tests and Quizzes
3. Apply a variety of integration techniques to evaluate definite and indefinite integrals.	- Quantitative Knowledge and Skills	- Tests and Quizzes
4. Work with infinite sequences and series.	- Quantitative Knowledge and Skills	- Tests and Quizzes

EVALUATION AND ASSESSMENT

Grading Distribution

Category	Percent of Final Grade
Test #1	25%
Test #2	25%
Test #3	25%
Final Exam	25%

The Final Exam can replace you lowest test grade. Periodically problems will be assigned and are optional to be turned in as extra credit. There are NO makeup tests!

Grading Scale

The following grading scale will be used in this course:

93% - 100% = A	73% - 77.9% = C
90% - 92.9% = A-	70% - 72.9% = C-
88% - 89.9% = B+	68% - 69.9% = D+
83% - 87.9% = B	63% - 67.9% = D
80% - 82.9% = B-	60% - 62.9% = D-
78% - 79.9% = C+	Below 60% = F

CLASS POLICIES

Attendance – Students attain maximum academic benefit through regular attendance. Therefore, students are expected to attend all class sessions that they are scheduled. Students are advised that attendance at each class is expected and will be recorded. Failure to attend each class could jeopardize the student’s successful completion of the course. Absence will not be considered a valid excuse for not being prepared for the next class. If an unexpected emergency preventing attendance arises, the instructor should be notified on the day of the missed class.

Tests/Make-up Tests – No make-up tests or quizzes will be given in MAT 122, however the final exam can replace a missed or lowest test grade.

Homework – Students should expect to spend at least two hours working outside of class for every hour spent in class. Specific assignments will be given in class.

Electronics – Cell phone and texting devices detract from active learning time in the classroom and therefore, are not permitted during class time

Academic Integrity – In its most elementary form, academic integrity encompasses the principles of an honest, fair and continuing pursuit of the truth, and means that students are expected to do and be responsible for their own work. Therefore, cheating, plagiarism, fabrication, collusion or any other violation of academic integrity is not acceptable and the instructor will impose an academic sanction which is reasonable and commensurate with the violation.

MAT 122 TOPICAL OUTLINE

Logarithmic, Exponential, and Other Transcendental Functions

- The Natural Logarithmic Function: Differentiation
- The Natural Logarithmic Function: Integration
- Exponential Functions: Differentiation and Integration
- Bases Other than e and Applications
- Inverse Trigonometric Functions: Differentiation
- Inverse Trigonometric Functions: Integration

Applications of Integration

- Area of a Region Between Two Curves
- Volume: The Disk Method
- Volume: The Shell Method
- Arc Length and Surfaces of Revolution

Integration Techniques, L'Hôpital's Rule, and Improper Fractions

- Integration by Parts
- Trigonometric Integrals
- Trigonometric Substitution
- Partial Fractions
- Indeterminate Forms and L'Hôpital's Rule
- Improper Integrals

Infinite Series

- Sequences
- Series and Convergence
- The Integral Test and p -Series
- Comparisons of Series
- Alternating Series
- The Ratio and Root Tests
- Power Series
- Representation of Functions by Power Series
- Taylor and Maclaurin Series

Parametric Equations and Polar Coordinates

- Plane Curves and Parametric Equations
- Parametric Equations and Calculus
- Polar Coordinates