Passaic County Community College
Academic Year: 2023-2024
Standard Syllabus

Department Chair: Janet Delaney
Program Coordinator: Kristina Fleming

Course Code: MA 120 **Course Title:** Calculus I

Department: Mathematics **Semesters Offered**: Fall, Spring , Summer

Course Description: This course covers the study of the concepts of limits, continuity, derivatives, and differentiation of algebraic and trigonometric functions. It also includes applications of the derivative, maxima, and minima and introductions to anti-derivatives, Riemann Sum, and the Fundamental Theorems.

Prerequisites: MA 109 *or* Test Placement *or* permission of the Department Chairperson

Credits: 4 **Lecture Hours:** 4 **Lab/Studio Hours:** 0 **Clinical/Fieldwork Hours:** 0

Required Textbook/Materials: Calculus by Anton; **Some sections of the course may use Open Educational Resources*

Additional Time and Supplemental Requirements: Based on a 15 week semester, students are required to spend an additional 8 hours per week on assignments outside of class time.

Course Learning Outcomes: Upon successful completion of this course, students will be able to:

- Discuss the basic concepts and theorems of differential calculus, including limits and continuity.
- Apply the basic concepts and theorems of differential calculus, including limits and continuity.
- Apply the relationship between tangent lines, rates of change, and the derivative.
- Differentiate functions (polynomial, rational, and trigonometric functions).
- Integrate functions (polynomial, rational, and trigonometric functions).
- Analyze the behavior of functions (critical points, points of inflection, intervals of increase, decrease and concavity).
- Use the derivative to solve various application problems, such as related rates, optimization, and graph sketching.

General Education Outcomes: Upon successful completion of this course, students will be able to:

1. Students will translate quantifiable problems into mathematical terms.
2. Students will use arithmetic, algebraic, geometric or statistical methods to solve problems.

General Education Outcomes: This is not a general education course.

Grading Standard: Final evaluation of class performance will be based on the following:

Participation	5%
Homework	10%
Tests	60%
Final Exam	25%
Total	100%

**Subject to change or could vary slightly by course section*

Course Content:

Schedule and suggested topics, readings, and assignments subject to change based on instructor and instructional resource)

- Limits and Continuity
- The Derivative
- The Derivative in Graphing and Applications
- Integration

Department Policies:

ACADEMIC HONESTY POLICY – The Mathematics department at Passaic County Community College highly values the honesty and the integrity of each student while helping them to pursue their academic goals. All students must abide by the following academic honesty policy. Students are expected to be honest and ethical at all times in their completion of any coursework. Any dishonesty will not be tolerated in this course. This includes, but is not limited to, cheating, plagiarizing, facilitating acts of academic dishonesty by others, having unauthorized possession of examinations, submitting work of another person, or obtaining solutions from any website or outside source. Students who are found to be dishonest will receive academic sanctions, such as an "F" grade on the assignment or exam, and the instructor will reserve the right to report the incident to the Academic Affairs Office for possible further disciplinary action.

CALCULATOR POLICY – Graphing calculators without symbolic operations ability are permitted in any calculus sequence course. Therefore, permitted calculators include TI-83, TI-83 Plus, and TI-84. TI-84 Plus and higher (including the TI n-spire) calculators are not permitted. Cell phone calculators are also not permitted. The instructor reserves the right to limit the use of the calculator on certain course assessments.

College Policies:

For Information regarding:

- PCCC's Academic Integrity Code
- Student Conduct Code
- Student Grade Appeal Process

Please refer to the PCCC Student Handbook and PCCC Catalog

Panther Alert: The College will announce delayed openings, closings, and other emergency situations through the Panther Alert System. Students are encouraged to sign up for Panther Alert Notifications by logging into their student accounts through the PCCC website at www.pccc.edu and following Panther Alert System instructions.

Notification for Students with Learnings Disabilities: If you have a disability, and believe you need accommodations in this class, please contact the Office of Accessibility Services at 973-684-6395, or email ods@pccc.edu. You should do so as soon as possible at the start of each semester. If you require testing accommodations, you must remind me (the instructor) one week in advance of each test.