



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

Department Chair: Janet Delaney  
Program Coordinator: Kristina Fleming

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**Course Code:** MA 202

**Course Title:** Differential Equations

**Department:** Mathematics

**Semesters Offered:** Fall, Spring

**Course Description:** This course covers the application of differential equations and their standard methods of solution. Topics include linear differential equations of the first and higher orders, linear equations of the second order, numerical approximations, and series solution.

**Prerequisites:** MA 121

**Credits:** 4

**Lecture Hours:** 4

**Lab/Studio Hours:** 0

**Clinical/Fieldwork Hours:** 0

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**Required Textbook/Materials:** A First Course in Differential Equations with Modeling Applications, by Zill

*\*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:

1. Identify ordinary linear differential equations.
2. Solve linear differential equations of first and second order.
3. Solve the applications of linear differential equations.
4. Solve differential equations by power series.
5. Solve differential equations with Laplace Transform.
6. Solve systems of differential equations.
7. Solve differential equations using Euler's method.
8. Solve mathematical problems using appropriate technological tools.

**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)

- Introduction to Differential Equations
- First-Order Differential Equations
- Higher-Order Differential Equations
- Modeling with Higher-Order Differential Equations
- Series Solutions of Linear Equations
- Laplace Transform
- Systems of Linear First-Order Differential Equations
- Numerical Solutions of Ordinary Differential Equations (Euler Method, Runge-Kutta Method)

**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](http://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](mailto: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.