NORTHWESTERN CONNECTICUT COMMUNITY COLLEGE

COURSE SYLLABUS

Course Title: Calculus II   **Course #: MAT 256**

The course will continue where a first semester calculus course ended. Topics include applications of integration, integration techniques, sequences and series, and differential and integral calculus applied to parametric and polar functions. Knowledge of this subject-matter is essential for those pursuing studies in the physical sciences, engineering, mathematics or a host of other fields. Students are assumed to have a good grasp of differentiation and some basic exposure to elementary integration.

The use of a graphing calculator is required in the course (TI-83 plus or TI-84 plus). 4 credits

Prerequisite: C or better in Calculus I (Mat 254).

Goals: It is the goal of the course to:

1.   Cause the student to be an active learner.
2.   Aid the student to develop increased confidence in their ability to conceptualize and perform mathematics.
3.   Enhance the student's understanding of fundamental principles underlying calculus.
4.   Prepare the students to apply calculus to other disciplines.
5.   Inspire students to continue the study of mathematics.
6.   Provide an experience wherein students enjoy learning and applying mathematics.

Outcomes: At the end of this course, a student should be able to:
1.   Use integrals to determine the area between two curves, the volume of a solid of revolution, the arc length of a graph of a function and the surface area of a solid of revolution.
2.   Use integration to solve problems from physics such as the mass of a planar lamina, determining the center of mass of a planar lamina, and work.
3.   Apply various integration techniques (integration by parts, trigonometric substitution, partial fractions and integration by tables) to solve various integration problems.
4.   Apply numerical methods (Midpoint rule, Trapezoid rule, Simpson's Rule) to approximate definite integrals.
5.   Evaluate improper integrals.
6.   Solve basic differential equations
7.   Determine the behavior of a series using various techniques and tests such as the Integral test, Ratio test and Root test.
8.   Approximate functions using polynomials.
9.   Integrate and differentiate power series.
10.   Graph and analyze parametric equations.
11.   Find the derivative of parametric functions.
12.   Convert between Cartesian and polar coordinates.
13.   Graph simple polar functions.
14.   Differentiate and integrate polar functions.

College Policies

Plagiarism: Plagiarism and Academic Dishonesty are not tolerated at Northwestern Connecticut Community College. Violators of this policy will be subject to sanctions ranging from failure of the assignment (receiving a zero), failing the course, being removed/expelled from the program and/or the College. Please refer to your "Student Handbook" under "Policy on Student Rights," the Section entitled "Student Discipline," or the College catalog for additional information.

Americans with Disabilities Act (ADA): The College will make reasonable accommodations for persons with documented learning, physical, or psychiatric disabilities. Students should notify Dr. Christine Woodcock, the Counselor for Students with Disabilities. She is located at Green Woods Hall, in the Center for Student Development. Her phone number is 860-738-6318 and her email is cwoodcock@nwcc.edu.

School Cancellations: If snowy or icy driving conditions cause the postponement or cancellation of classes, announcements will be made on local radio and television stations and posted on the College's website at www.nwcc.edu. Students may also call the College directly at **(860) 738-6464** to hear a recorded message concerning any inclement weather closings. Students are urged to exercise their own judgment if road conditions in their localities are hazardous.

Some course content as presented in Blackboard Learn is not fully supported on mobile devices at this time. While mobile devices provide convenient access to check in and read information about your courses, they should not be used to perform work such as taking tests, quizzes, completing assignments, or submitting substantive discussion posts."

Sexual Assault and Intimate Partner Violence Resource Team: NCCC is committed to creating a community that is safe and supportive of people of all gender and sexual identities. This pertains to the entire campus community, whether on ground or virtual, students, faculty, or staff.
Sexual assault and intimate partner violence is an affront to our national conscience, and one we cannot ignore. It is our hope that no one within our campus community will become a victim of these crimes. However, if it occurs, NCCC has created the SART Team - Sexual Assault and Intimate Partner Violence Resource Team - to meet the victim's needs.
SART is a campus and community based team that is fully trained to provide trauma-informed compassionate service and referrals for comprehensive care. The team works in partnership with The Susan B. Anthony Project to extend services 24 hours a day, 7 days a week throughout the year.

The NCCC team members are:

Name	Phone	Location
Ruth Gonzalez, PHD	860-738-6315	Greenwoods Hall Room 220
Susan Berg	860-738-6342	Greenwoods Hall Room 223
Kathleen Chapman	860-738-6344	Greenwoods Hall Room 110
Michael Emanuel	860-738-6389	Founders Annex Room 308
Gary Greco	860-738-6397 (V) 860-469-3138 (VP)	Founders Hall Room 101
Robin Orlomoski	860-738-6416	Business Office Room 201
Patricia Bouffard, Ex-Officio	860-738-6319	Founders Hall Room 103

At NCCC we care about our students, staff and faculty and their well-being. It is our intention to facilitate the resources needed to help achieve both physical and emotional health.