NORTHWESTERN CONNECTICUT COMMUNITY COLLEGE
Course Syllabus

Course Title: Intermediate Algebra, Precalculus Prep   **Course #** MAT* 137P

Course Description: 4 credits

This course is a further study of algebra and mathematical modeling of functions and relations represented by tables, graphs, words, and symbols. Polynomial functions and expressions with special attention to linear, quadratic, exponential, rational, and radical functions are studied. There is an emphasis on modeling and applications for all topics. This course meets for an hour longer each week than MAT*137 to allow for more time to cover topics that are useful in MAT* 186. *This course fulfills graduation requirements in many degree programs at NCCC. Check with your Academic Advisor if you intend to transfer to a 4-year college or university and wish to complete your math requirements while at Northwestern. MAT* 137P typically transfers as a general elective, not as a math course.*

Prerequisite:

A grade of C or better in MAT 085, 095, or 094, or satisfactory scores on the math placement test, SAT, or ACT.

Goals:
Students will:
1. Exhibit perseverance, ability, and confidence to use mathematics to make sense of and solve problems
2. Perform mental arithmetic and use proportional reasoning.
3. Analyze problem situations through numerical, graphical, symbolic and/or verbal approaches and modeling.
4. Use appropriate tools strategically in solving problems.
5. Recognize patterns, draw inferences
6. Communicate and interpret results
7. Demonstrate an understanding and appreciation of the usefulness of mathematics in everyday life

Outcomes:

At the completion of MAT*137P, the student will be able to do the following:

Linear Functions
1) Provide multiple representations (e.g., words, symbols, graphs, tables) of linear functions by hand and/or using technology
2) Determine identifying characteristics of linear functions
3) Model and solve real world applications with linear functions (e.g., car depreciation) and systems of linear equations
4) *Solve linear inequalities and absolute value equations and inequalities*

Quadratic Functions and/or Expressions
1) Provide multiple representations of quadratic functions or expressions by hand and/or using technology
2) Determine identifying characteristics of quadratic functions or expressions (e.g., factors)
3) Evaluate, simplify, and perform operations on quadratic functions or expressions
4) Solve quadratic equations algebraically (e.g., factoring, completing the square, and quadratic formula with rational solutions) and/or graphically
5) Solve real world applications involving quadratic equations and functions

Exponential Functions and/or Expressions
1) Provide multiple representations (e.g., tables, graphs, symbols) of exponential functions or expressions by hand and/or using technology
2) Determine identifying characteristics of exponential functions or expressions
3) Evaluate, simplify, and perform operations on exponential functions or expressions
4) *Identify exponential functions within real world applications*
5) *Solve simple exponential equations using the properties of exponentials*

Rational Functions and/or Expressions
1) Provide multiple representations of simple rational functions or expressions by hand and/or using technology
2) Determine identifying characteristics of rational functions or expressions
3) Evaluate, simplify, and perform operations on simple rational functions or expressions
4) Solve rational equations algebraically and/or graphically
5) Solve real world applications involving rational functions

Radical Functions and/or Expressions
1) Provide multiple representations of simple radical functions or expressions by hand and/or using technology, with primary emphasis on square root
2) Determine identifying characteristics of radical functions or expressions
3) Evaluate, simplify, and perform operations on simple radical functions or expressions
4) Solve radical equations algebraically and/or graphically
5) Solve real world applications involving radical functions
6) Identify imaginary numbers

Basic Geometry and Trigonometry
1) *Calculate lengths of sides, interior angles, and exterior angles of polygons*
2) *Apply circle properties to solving problems*
3) *Evaluate sine, cosine, and tangent using the unit circle*
4) *Write sine, cosine, and tangent ratios for any angle*
5) *Solve right triangles using trigonometric ratios and the Pythagorean Theorem*
6) *Identify similar triangles & compute unknown angles and sides using proportions*

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.

Use of Electronic Devices: 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:

Ruth Gonzalez, Ph.D.	860-738-6315	Green Woods Hall Room 207
Susan Berg	860-738-6342	Green Woods Hall Room 223
Kathleen Chapman	860-738-6344	Green Woods Hall Room 110
Michael Emanuel	860-738-6389	Founders Hall Annex Room 308
Seth Kershner	860-738-6481	Library
Jane O'Grady	860-738-6393	Founders Hall Annex Room 212
Robin Orlomoski	860-738-6416	Business Office Room 201
Patricia Bouffard, Ex-Officio	860-738-6319	Founders Hall Room 103
Savannah Schmitt		Student Representative

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.