Naugatuck Valley Community College
STEM Division
Science, Technology, Engineering and Mathematics

Common Course Syllabus
Applied Calculus MAT*H232

COURSE TITLE: Applied Calculus, MAT*H232

COURSE DESCRIPTION: The purpose of this course is to acquaint students not majoring in mathematics or science with a body of mathematical knowledge that may well demand investigation in view of their various academic goals. Topics covered include function theory, inequalities, tangent problems, continuity, limits, derivatives, and integrals.

NUMBER OF CREDITS: 3 credit hours

PREREQUISITE: Grade of "C" or better in MAT*H172 (College Algebra) or an appropriate score on a college placement exam.

COURSE OBJECTIVES:
1. Provide mathematics' students with a general knowledge of differential and integral calculus.
2. Provide students majoring in fields other than mathematics skills useful to those fields.
3. Provide an opportunity for students to explore a fascinating branch of mathematics.

LEARNING OUTCOMES: At the end of this course the student will be able to do the following:
A. Functions and graphs —
   1. Define and recognize linear and quadratic functions.
   2. Sketch the graphs of linear and quadratic functions.
   3. Apply horizontal and vertical and stretching transforms.

B. Limits and continuity —
   1. Calculate rates of change and slope.
   2. Calculate several types of limits.

C. Derivatives —
   1. Define the derivative in terms of a limit.
   2. Find derivatives of polynomials.
   3. Find derivatives of products and quotients.
   4. Use the Chain Rule to find derivatives of powers of functions.

D. Applications of the Derivative —
   1. Use the first derivative to analyze where a function increases or decreases.
   2. Use the second derivative to analyze where a function is concave up or down.
   3. Sketch functions using intercepts, relative extrema, asymptotes and points of inflection.
   4. Optimize functions.

E. Indefinite Integrals —
   1. Find the anti-derivative.
   2. Find the indefinite integral.
   3. Find the particular integral.

F. Definite integrals and applications —
1. Find the definite integral.
2. Apply the Fundamental Theorem of Calculus.

G. Exponential and Logarithmic functions —
1. Define and recognize exponential and logarithmic functions.
2. Sketch the graphs of exponential and logarithmic functions.
3. Find the derivatives of exponential and logarithmic functions.
4. Find the indefinite and definite integrals of exponential and logarithmic functions.

GRADING SYSTEM: For the purpose of computing numerical credit point averages, grades are evaluated as follows for each semester hour of credit. Grades on exams, papers, and quizzes, will be based on this grading system.

Numeric Grade	Acceptable Letter Grade Range to be used by the instructor	Description
90 –100	A– to A	Excellent
80 – 89	B–, B, B+	Above Average
70 – 79	C–, C, C+	Average
60 – 69	D–, D, D+	Below Average
Below 60	F	Failing

CLASS CANCELLATION PROCEDURE: *If the instructor is late, the class is expected to wait 15 minutes before leaving or until informed of a cancellation by a college official. Information on weather related closings/late openings concerning Naugatuck Valley Community College can be obtained through local radio and television stations, or via the college website (http://www.nvcc.commnet.edu).* **NOTE:** *An alternative assignment may be given if classes are canceled due to weather.*

ACADEMIC HONESTY STATEMENT: *At NVCC we expect the highest standards of academic honesty. Academic dishonesty is prohibited in accordance with the Board of Trustee's Proscribed Conduct Policy in Section 5.2.1 of the BOT Policy Manual. This policy prohibits cheating on examinations, unauthorized collaboration on assignments, unauthorized access to examinations or course materials, plagiarism, and other proscribed activities. Plagiarism is defined as the use of another's idea(s) or phrase(s) and representing that/those idea(s) as your own, either intentionally or unintentionally. Anyone who is caught cheating on exams, plagiarizing another's work or published material will fail the course regardless of progress made in the course.*

CHILDREN ON CAMPUS: *With permission of the instructor only – Children must be attended at all times by a responsible adult. The student must notify the instructor or supervisor prior to the beginning of the class or activity that a child is present. Instructors and/or supervisors are authorized to ask the student or program participants to leave should the presence of a child be disruptive.*

CELL PHONE/PAGER USE POLICY: *Students are hereby notified that cellular phones and beepers are allowed in class only if they are turned off or turned to a silent mode. Under no circumstances are telephones to be answered in class. Students who ignore this policy may be asked to leave class. When there are extenuating circumstances that require that a student be available by phone or beeper, the student should speak to the instructor prior to class, so that together they can arrive at an agreement concerning the device.*

STUDENTS WITH SPECIAL NEEDS: *Students who may require accommodations on the basis of a learning disability are encouraged to contact the Coordinator of Learning Disabilities. Students who may require accommodations on the basis of all other disabilities should contact the Coordinator of Disability Services. After providing documentation and completing the disability disclosure process, students are then encouraged to meet with their instructor(s) to discuss the accommodations approved by the appropriate Coordinator and to complete the Accommodations Agreement form. Accommodations are not retroactive, students are therefore encouraged to meet with their instructor(s) at the beginning of each semester. Instructors, in conjunction with appropriate college personnel, will provide assistance and/or accommodations only to those students who have completed the disability disclosure and accommodations process.*