

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

COURSE: Calculus II, MAT*H256

CRN:

Room and Meeting times:

Instructor:

Office:

Phone:

Email:

Office Hours:

Course Description: A course for mathematics or science majors. Topics include the definite integral and applications of the definite integral to areas, volumes, and length of arc of a plane curve. Also considered are logarithmic and exponential functions, trigonometric functions, inverse trigonometric functions and various techniques of integration. Limits involving indeterminate forms and improper integrals are also discussed. The course concludes with an introduction to infinite series.

Number of Credits: 4 credit hours

Prerequisites: Grade of "C" or better in MAT*H254 (Calculus I).

Required Textbook: *Calculus 9th Edition*, Larson, Edwards, Brooks Cole / Cengage Learning

Calculators: The TI-84 (plus) or TI-83 (plus) calculator will be used regularly in class and will be necessary for some homework assignments.

Course Objectives:

1. Use exponential and logarithmic differentiation to find the derivative of a function.
2. Evaluate an integral by using strategies and/or techniques of integration.
3. Apply L'Hopital's Rule to evaluate a limit, when applicable.
4. Determine the convergence or divergence of a series by using an appropriate test.
5. Solve application problems.

Learning Outcomes: At the end of this course the student will be able to do the following:

- A. Exponential, Logarithmic and Inverse Trigonometric Functions —
 1. Find the derivative for any function containing exponential expressions.
 2. Find the integral for any function containing a simple exponential expression.
 3. Find the derivative for any function containing logarithmic expressions (including those found by the method of logarithmic differentiation).
 4. Find the integral for any function whose antiderivative involves the natural logarithmic function.
 5. Solve a separable differential equation as obtained from applications of the exponential law of growth or decay.
 6. Find the derivative for a function containing inverse trigonometric functions and evaluate an integral whose antiderivative involves the inverse trigonometric functions.
 7. Use L'Hopital's Rule to determine the limit for an expression which initially results in an indeterminate form.
- B. Applications of Integration —
 1. Find the area under the curve or the area between curves.
 2. Find the volume of a solid of revolution using the disc or washer method.
 3. Find the volume of a solid with known cross sections (slicing method).
 4. Find the volume of a solid of revolution using the shell method.
 5. Find the arc length for a smooth curve.
 6. Find the area for a surface of revolution.
- C. Integration Techniques —
 1. Evaluate an integral by any of the following methods:
 - Integration by parts
 - Completing the square
 - Trigonometric substitution
 - Partial fractions
 2. Evaluate an integral involving powers of trigonometric functions by using an appropriate combination of substitution, identities or tables.
 3. Evaluate an improper integral involving infinite limits of integration and/or infinite discontinuities.
- D. Infinite Series —
 1. Determine the convergence or divergence of a sequence by an appropriate method.
 2. Determine the convergence or divergence of any positive term series by applying any of the following tests:
 - Test for divergence
 - Geometric series test
 - Integral test
 - P-series test
 - Direct comparison test
 - Limit comparison test

Instructional Methodology

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

Evaluative Criteria:

NVCC Absences and Attendance Guidelines

- The Faculty expects that each student will exercise personal responsibility regarding class attendance.
- All students are expected to attend every class session of each course for which they are registered.
- Students are responsible for all that transpires in class whether or not they are in attendance, even if absences are the result of late registration or add/drop activity at the beginning of a term as permitted by college policy.
- The Faculty defines excessive absence or lateness as more than the equivalent of one week of class meetings during the semester. Distance Learning courses will use criteria established by the Instructor.
- When presence counts towards a class participation grade, excessive absence or lateness may, at the discretion of the instructor, lower a student's course grade.
- Instructors will maintain attendance records.

At the beginning of each semester, instructors will submit, to the Academic Dean's office, the names of students who have not attended any classes during the first two weeks of classes.

Class Cancellations: With the potential for faculty emergencies or inclement weather, class cancellations or delays are a possibility. If a class is cancelled or delayed, instructors will work with students to plan for make-up assignments for any class time missed. Faculty can plan for this through a variety of ways including, but not limited to, the use of reading days, or extended class time, or online/additional class assignments.

[Cancellation or delay of classes due to inclement weather is made only by the President of the College. To promptly learn of these cancellations or delays, please sign-up for MyCommNetAlert for immediate notifications.]

Make-up Policy:

Academic Honesty Statement: At NVCC we expect the highest standards of academic honesty. Academic dishonesty is prohibited in accordance with the Board of Trustees' student discipline policy 5.2.1 Policy on Student Conduct, Section 3, Paragraph 2. 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 violates the Board policy may fail the course at the discretion of the instructor. (Please see the Student Handbook on the College website for more information

<http://www.nv.edu/Portals/0/Documents/StudentServices/NVCCStudentHandbook.pdf>).

A student may not obtain a transcript notation of "W" in a course if there exists substantial reason to believe the student has engaged in academic misconduct in the course. A transcript notation of "W" will only be permitted for such students when the final resolution results in finding the student did not commit academic misconduct in the course.

Children on Campus: For the purpose of this policy, children are defined as minors under the age of 18 who are not enrolled in a Naugatuck Valley Community College course or program. Children must be attended at all times by a responsible adult. Children may accompany an adult to class on an occasional basis and only with the prior permission of the class instructor. In an emergency situation that is not repetitive, a request may be made to the instructor of the course or supervisor of the activity for permission to bring a child to class or on campus. The student must notify the instructor or supervisor prior to the beginning of the class or activity that a child is present. Pre-k, elementary and high schools that are not in session are not emergency situations. Arrangements must be made for child care outside of NVCC.

It is expected that this accommodation will be made only when there is no disruption to the teaching and learning process. Instructors and/or supervisors are authorized to ask the student or program participant to leave should the presence of the child be disruptive.

Children are never permitted in any test, exam or final exam session.

(Full policy can be found in the NVCC Student Handbook)

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-ADA: Students who may require academic adjustments on the basis of a learning disability are encouraged to contact the Counselor for Students with Learning Disabilities (Terry Latella K519C). Students who may require adjustments on the basis of all other disabilities should contact the Coordinator of Disability Services (Laurie Novi K519D). After providing documentation and completing the disability disclosure process, students are then encouraged to meet with their instructor(s) to discuss the adjustments approved by the appropriate disabilities contact and to complete the Adjustments Agreement form. Adjustments 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 adjustments only to those students who have completed the disability disclosure and academic adjustments process.

Continuing Notice of Nondiscrimination

Naugatuck Valley Community College does not discriminate on the basis of race, color, religious creed, age, sex, national origin, marital status, ancestry, present or past history of mental disorder, learning disability or physical disability, sexual orientation, gender identity and expression or genetic information in its programs and activities. In addition, the College does not discriminate in employment on the additional basis of veteran status or criminal record.

The following individual has been designated to handle nondiscrimination policies regarding disability policies: **Robert Divjak, Director of Facilities/Section 504/ADA Coordinator, Room C216, Naugatuck Valley Community College, 750 Chase Parkway, Waterbury, CT 06708; 203-575-8235.** The following individual has been designated to handle nondiscrimination policies regarding sex discrimination as well as other forms of prohibited discrimination: **Jacque Swanson, Associate Director of Human Resources/Title IX Coordinator, Room K704, Naugatuck Valley Community College, 750 Chase Parkway, Waterbury, CT 06708; 203-575-8043.**

Official Student Email:

As of January 1, 2013, new and current Naugatuck Valley Community College students were given an official student email address through Microsoft Office 365. This email address is the primary mode of communication with the college. Emails will no longer be sent to personal email accounts. In the near future, the Office 365 account will also give free access to web applications of Microsoft Word, Excel, PowerPoint and OneNote. Visit nv.edu/email for details on setting up your account or for help, call or visit IT: 203-575-8092 or nv.edu/IT.

Course Outline:

Internet Related Sites:

Tutoring Resources:

The Academic Center for Excellence (ACE), provides tutoring in math, sciences, English and writing, and numerous other subjects. Students can learn about the full range of tutoring and other student success services by going by the ACE in E500 Ekstrom Hall, visiting its webpage at <http://www.nv.edu/Student-Life/ACE-Tutoring>, or by calling (203) 596-8717.

<u>Hours:</u>	Monday & Tuesday	8 am – 8 pm
	Wednesday & Thursday	8 am – 7 pm
	Friday	8 am – 4 pm
	Saturday	10 am – 3 pm
	Sunday	12 pm – 4pm

Library Resources:

The Max R. Taurig Library is located on the 4th and 5th floors of the L building. The library has books, journals, databases, research guides, DVDs and CDs to support the college curriculum, as well as copies of all the textbooks used at NVCC. The online journal databases, ebooks, and streaming videos can be accessed via the library website at www.nv.edu/library or through the Library tab in MyCommNet.

Hours: Monday and Tuesday	8 am – 8 pm
Wednesday and Thursday	8 am – 6 pm
Friday	8 am - 4:30 pm
Saturday and Sunday	10 am – 2 pm

Phone: (203) 575-8024

Email: library@nv.edu

Academic Affairs
8/15/14