Calculus I
Dual Enrollment
MTH 263
2022-2023

Class Meetings: Virtual - TBD **Room: Web Based On-Line**

Instructor: Kenneth Watson

Email: kenneth.watson@accomack.k12.va.us

Office Hours
To be determined via Zoom

Office Location: Off campus only

Office Phone: Chincoteague High School (757) 336-6166

Academic Department
The instructor is your first and best point of contact for questions or concerns about this class. For issues that are outside the area of the instructor's responsibility, students may contact the ESCC administrative assistant for Academic, Student, and Workforce programs, gpratt@es.vccs.edu or (757)789-1725. Students may contact the ESCC Chair of the Mathematics] department, pweitzel@es.vccs.edu.

Student Email Policy
Students must use their ACPS e-mail account when communicating with the instructor or for other class activities. Students are responsible for checking their ACPS e-mail account regularly, at a minimum of at least once per day.

Instructor Email Response Policy
All e-mail correspondence must include your name and course, and must be sent from an ACPS e-mail. This is not the only course I am teaching; therefore, it is essential that you identify yourself and your course clearly in the e-mail. I cannot use non-ACPS accounts for school communication, so you must use your ACPS e-mail address for all course-related communication. If you e-mail me, I will respond to your e-mail as soon as possible or practical.

Virginia's Community Colleges

MTH 263 - Calculus I

Effective: 2022-03-31

Course Description

Presents concepts of limits, derivatives, differentiation of various types of functions and use of differentiation rules, application of differentiation, antiderivatives, integrals and applications of integration. This is a Passport and UCGS transfer course.
Lecture 4 hours. Total 4 hours per week.
4 credits

General Course Purpose

The general purpose of this first course in a three course sequence is to prepare students for further study in calculus with analytic geometry by providing them with the necessary competencies in finding limits, differentiation and integration.

Course Prerequisites/Corequisites

Prerequisite: Completion of MTH 167 or MTH 161/162 or equivalent with a grade of C or better.

Course Objectives

- Limits
  - Differentiate between the limit and the value of a function at a point

    - Find the limit of a function by numerical, graphical and analytic methods
    - Apply Limit Laws
    - Calculate one-sided limit of a function
    - Prove the existence of a limit using precise definition of the limit
    - Determine the continuity of a function
    - Calculate Vertical and Horizontal asymptotes using limits
- Derivatives and Differentiation Rules
    - Define Derivatives and Rates of Change
    - Compute derivatives of basic functions using the definition of the derivative
    - Differentiate polynomial, rational, radical, exponential and logarithmic functions
    - Find equation of a tangent line using derivative
    - Differentiate trigonometric functions
    - Apply product, quotient, chain rules
    - Apply implicit differentiation and find derivatives of inverse trigonometric functions
    - Apply concept of rates of change to natural and social sciences
    - Apply the concept of related rates
    - Define hyperbolic functions and their derivatives
    - Find linear approximation of a function at a given point
- Applications of Differentiation
    - Calculate local and absolute maximum and minimum values of a function
    - Apply Rolle's Theorem and Mean Value Theorem to study properties of a function
    - Find critical points, and intervals of increasing and decreasing values of a function

    - Find points of inflection and intervals of different concavities
    - Sketch a curve for a given function
    - Apply rules of differentiation to solve optimization problems
    - Find antiderivatives for basic functions using knowledge of derivatives
- Integrals
    - Relate areas to definite integrals using sigma notation, Riemann Sums, and limits. [Note: L?Hopital?s Rule is in Calc II but may be used for instructional purposes here.]
    - Apply Fundamental Theorem of Calculus to find definite integrals and derivatives
    - Find indefinite integrals of polynomials and basic trigonometric and exponential function
    - Apply Net Change Theorem
    - Perform integration using substitution
    - Find areas between curves
    - Find average value of a function

Major Topics to be Included

- Limits
- Derivatives and Differentiation Rules
- Applications of Differentiation
- Integrals

Required Text(s)

Advanced Placement Calculus::Graphing, Numerical, Algebraic, 6th Edition 2020, Demana, Waits, Kennedy, Bressoud, Boardman
ISBN: 9781418300227

Required Additional Materials
1.Graphing Calculator
2.Students must have access to a computer and must have dependable internet access

Course Requirements
Course assignments, quizzes and tests will be posted on Canvas. All work should be submitted by the given due dates.

Required Time-on-Task
To succeed in this course students will have to put time both into zoom meetings and also into out-of-class study. Expect to spend 9-12 hours per week dependent on previous coursework and math background.

Grading/Evaluation Policy

Grading Policy and Procedures 2022-2023

Grade Percentages:

I. Homework	***10%***
II. Classwork	***20%***
III. Quizzes	***30%***
IV. Tests	***40%***

Homework and Classwork

1. Homework will be assigned frequently and posted on Canvas with given due dates

2. Late homework will not be accepted unless the student has an excused absence.
(ACPS : School Policy Applies)

3. Each homework assignment will have a point value of 1 point per problem assigned. Incomplete assignments will be scored on a percentage correct basis.

4. Each student's final homework and classwork averages will be the percentage of the number of points earned divided by the total number of possible points.

5. Students will earn classwork points through Study Plan Problems. The number of required classwork problems will be determined by Chapter. The teacher will assign the number of required problems that should be completed correctly, to earn full credit for classwork. Classwork problems for each chapter should be completed before testing on that chapter.

6. ***Students caught copying another student's assignment will result in <u>both</u> students receiving no credit for the given assignment.***

7. All homework and classwork missed due to excused absence from class <u>must</u> be made up.

<u>Quizzes</u>:

1. Quizzes will be announced and should be completed by given due dates.

2. All quizzes will be averaged to determine a student's quiz average.

3. All quizzes missed due to excused absence must be made up.

<u>Tests:</u>

1. All tests will be announced in advance.

2. Students must make up missed tests due to excused absence.

3. All students are required to take the final exam. The final exam will count 20%

of the overall course grade.

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Late Work Policy
See the Student Handbook for Accomack County Public Schools policy. Work not made up on time will receive a grade of zero.

Make-Up/Missed Test Policy
See the Student Handbook for Accomack County Public Schools policy. Work not made up on time will receive a grade of zero.

Attendance Policy
Per the ESCC college catalog, “Students should be present and on time for all scheduled class and laboratory meetings. If students register after the registration deadline, they are counted absent from all class meetings missed.” When absence from a class becomes necessary, it is the responsibility of the student to inform the instructor prior to the absence whenever possible. The student is responsible for the subsequent completion of all course work missed during an absence. Any instructional material missed and not subsequently obtained and completed will affect the grade of the student, regardless of the reason for the absence. Wee the Student Handbook for Accomack County Public Schools policy. This is a college credit course; your presence in class is expected.

Technology Issues Policy
Computer or internet connection problems are not an acceptable excuse for not completing work. The college library, open areas of the campus, and parking lots provide free internet access. The library lends out laptops and provides additional computer access during hours of operation. Assignments are due by published deadlines regardless of any technology issues experienced by the student. For this reason students should submit assignments well ahead of the deadline.

Never Attended/Course Withdrawal Policy
A student who does not attend one of the first two class meetings (or the equivalent in online courses) may be reported as “Never Attended” and may be dropped from the course. A student who violates the course attendance policy or who is not making satisfactory progress before the completion of 60% of the session, also referred to as the “Last Day to Withdraw without Academic Penalty,” may be dropped from the course and may receive a grade of “W.” However, while the College or instructor may withdraw students as noted in this syllabus and the “Enrollment” section of the college catalog, **students have the responsibility to initiate their own withdrawals from classes** using the Student Information System (SIS).

Student Responsibility

Students bear primary responsibility for their academic success. The instructor, instructional materials, activities, and college support services provide resources for students to draw upon as they work towards their academic goals, but those goals can only be achieved through the diligent and conscientious efforts of the student. Students who have concerns about their learning, their performance, or the operation of the class are strongly encouraged to seek assistance from the instructor and/or college support services.)

Student Conduct
It is the responsibility of each student to comply with all policies in the Student Handbook.

Academic Honesty
It is imperative that students maintain a high degree of individual honor in their scholastic endeavors. Scholastic dishonesty will not be condoned under any circumstances. Generally, scholastic dishonesty is interpreted as cheating on an examination or quiz, which includes giving or receiving information; copying, using unauthorized materials in tests; collaborating during examinations; substituting for another person or allowing substitutions during examination; plagiarizing or submitting work other than one's own; and colluding with another person or persons in submitting work for credit unless such collaboration is approved in advance by the instructor. *Webster's Third International Dictionary* defines plagiarism as follows:

> "Plagiarism--to steal and pass off, as one's own the ideas or words of another; to use without crediting the source; to present as new and original an idea or product derived from an existing source; to commit literary theft."

Children on Campus Policy
Children are not permitted to attend any class meeting. Children may not be left unsupervised in the hallway outside of the classroom. Children under 18 who are not ESCC students are only permitted to visit the campus when supervised by an adult at all times. For more information about this policy, please refer to the ESCC Student Handbook.

Early Alert System
As evidence of our commitment to student success, Eastern Shore Community College has adopted an early alert referral system to support students in their educational pursuits. Faculty and staff use the system to alert and refer students to appropriate campus services for assistance. Students may receive a follow-up call from various campus services as a result of being referred through our early alert system. Participation is optional, but students are strongly encouraged to take advantage of the additional services offered.

Student Support Services
Students are encouraged to take advantage of the many support services available to those at the College, including, but not limited to, free tutoring, computer lab access, library and other learning resources, counseling, academic advising, career advising and scholarships. Please contact the instructor or the above named services for more information.

Disability Accommodations
Eastern Shore Community College complies with the requirements of the Americans with Disabilities Act (ADA) and provides reasonable accommodations to students who are entitled to such accommodations

by law. Students receiving services from the College who have disabilities that require accommodations are responsible for informing the Student Services (studentservices@es.vccs.edu, phone: 757-789-1720) Students must present instructors with their letters of accommodation as soon as possible. The accommodations become effective on the date when the student presents the letter to the instructor; accommodations will not be applied retroactively.

Repeating the Course
Students may attempt to complete a course with a passing grade twice (withdrawing from the course with a grade of 'W' counts as an attempt). In order to receive permission for a subsequent attempt, the student must make an appointment to meet with the counselor Sheryl Williamson, swilliamson@es.vccs,edu, (757)789-1777.

Instructor Lateness/Absence Policy
Typically, the instructor will notify students by email and with a Canvas announcement if a class must be cancelled. If students have not been notified of a class cancellation and the instructor is not present at the start time for the class, students should wait 15 additional minutes in case the instructor was slightly delayed. Students should check email and the class Canvas site within 24 hours for instructions on how to prepare for the next class meeting.

Policy on Contagious Disease
Students should review the college's contagious disease policy published on the ESCC website. Students should remain at home if they have symptoms of a contagious disease that may endanger the health of others at ESCC. Students should contact their instructors by phone or email if they suspect they have contracted a contagious disease that causes them to miss more than a day of class. When students are ready to return to class, they should present to their instructors a doctor's statement or medical clearance that authorizes their return to class. While away from class, students will be expected to maintain progress in all course requirements.

ESCC Alert
Those who sign up for ESCC Alert receive text and email messages about campus emergencies, such as snow closings and dangerous situations. Students are strongly encouraged to sign up for ESCC Alert by visiting the bottom on the college's main web page.

Inclement Weather
In the event of inclement weather, the College provides delay and cancellation information to local radio and television stations and the ESCC Alert notification system. Inclement weather, particularly ice storms and hurricanes, can affect power, cable, and phone lines making it difficult to submit assignments in Canvas. If the College is closed due to inclement weather, any assignments due during the closing will be expected on the first day the College reopens. Check Canvas for details. If students are still experiencing difficulties in transmission of Canvas assignments due to power or other outages, they should utilize another source of internet service to contact the instructor via email to resolve questions and concerns in a timely manner.

Title IX: Sex Discrimination and Violence
Title IX of the Education Amendments of 1972 is a federal civil rights law that prohibits discrimination on the basis of sex in educational programs, activities, admission and employment. Complaints of sex-based discrimination, sexual violence, domestic violence, dating violence, and sexual or gender-based

harassment are governed by the college's Title IX Policy. For information about Title IX or to make a report, please visit the Title IX page on the ESCC website.

Disclaimer

The instructor has attempted to provide a syllabus that is complete and accurate; however, the instructor will modify course policies and the calendar of activities as deemed necessary during the semester. All such changes will be announced on Canvas. It is the student's responsibility to note and attend to all announced changes.