



Danville Community College

Last date to WITHDRAW from a class with no grade issued: September 8, 2025
Last date to WITHDRAW without penalty (W grade issued): October 27, 2025

MTH 263: Calculus I
Credit Hours: 4
Fall 2025 & Spring 2026
PGSMST/DCC
(276) 656-0328

Instructor: Kendra Hardy
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Website: www.pgsmst.com
Hours: 12:00 – 3:00 Monday-Friday

PGSMST Student Handbook: (can be found at www.pgsmst.com under the *student area* tab)

Textbook: *Calculus* (5th ed.) Larson & Edwards (provided)

Course Format: In-Person

Course Description: Calculus I presents concepts of limits, derivatives, differentiation of various types of functions and use of differentiation rules, applications of differentiation, antiderivatives, integrals and applications of integration.

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.

Prerequisite(s): Completion of Pre-Calculus with Trigonometry (MTH 167 or MTH 161/162) with a grade of C or better

Course Student Learning Outcomes:

❖ 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 the one-sided limit of a function
- Prove the existence of a limit using the precise definition of the limit
- Determine the continuity of a function
- Calculate vertical and horizontal asymptotes using limits

Textbooks/Supplies:

The student is expected to have the following materials

- ✓ Textbook (provided)
- ✓ Calculator (provided)
- ✓ 3-ring binder (2")
- ✓ Loose-leaf paper
- ✓ Pencils

❖ 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 the equation of the tangent line using the derivative
- Differentiate trigonometric functions
- Apply product, quotient, chain rules
- Apply implicit differentiation and find derivatives of inverse trigonometric functions
- Apply the 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 the 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
- Apply Fundamental Theorem of Calculus to find definite integrals and derivatives
- Find indefinite integrals of polynomials and basic trigonometric and exponential functions
- Apply Net Change Theorem
- Perform integration using substitution
- Find area between curves
- Find average value of a function

Methods of Instruction: A variety of instructional methods will be utilized including but not limited to direct instruction, individual activities, and group activities. Students are encouraged to actively participate in the learning process to ensure mastery of the content. Many examples will be provided through lecture and class activities. As a group, we will work extensively on study habits, appropriate use of the graphing calculator, and student communication – both oral and written.

Grading Policy:

<u>Grading Policy</u>		<u>Semester Grade</u>		<u>Final Grade</u>		<u>Grading Scale</u>	
Formative Assessments (quiz/graded assignment)	40%	1st Nine Weeks	40%	Fall Semester	50%	A	90% - 100%
Summative Assessments (unit tests/projects)	60%	2nd Nine Weeks	40%	Spring Semester	50%	B	80% - 89%
		Semester Exam	20%			C	70% - 79%
						D	60% - 69%
						F	59% or less

- ❖ Grades are non-negotiable.
- ❖ All unit tests will be announced.
- ❖ Students are expected to demonstrate knowledge of course content by *showing* their work/steps. Students must show their work to receive full credit on assessments.
- ❖ Students will have independent assignments (homework) on a regular basis. This work may or may not be graded. Independent assignments are primarily for practice; completion of independent assignments (and studying!) is imperative to student success in this course.

ThinkWave: Grades will be posted in ThinkWave. Students (and parents) should log into Thinkwave and review grades on a regular basis. If there is an error or a concern, please see the instructor immediately. DO NOT wait until the end of the grading period to discuss any questions or concerns.

Absences/Tardies: All students are expected to report to class each day. All students must arrive to class on time (attendance is submitted promptly at 7:45 AM for first block and 9:30 for second block). In order to be counted on time and present, students must be *in class* (not in the hallway, in the building, on the stairs, or in the café). Much material is covered and many assignments are to be completed within a limited amount of time. Should a student miss class, it is the responsibility of the STUDENT to acquire any information that was given that day and to complete any assignments missed. **Be sure to review the attendance policy found in the PGSMST Student Handbook as this will be adhered to strictly.**

Make-up Work: *Your absence is not an extension.* Students will have the same number of days to complete the make-up work as they were absent from school. If make-up work is not completed and turned in within the allotted time, a grade of zero will be recorded. Students are responsible for obtaining make-up assignments from either the instructor or their peers. No make-up work will be allowed for unexcused absences/tardies.

Late Assignments: Assignments turned in after the due date are subject to at least a 10 point per day deduction for each day late.

Inclement Weather: If Pittsylvania County Schools are on a one-hour delay, Governor’s School will also be on a one-hour delay. If Pittsylvania County Schools are on a two-hour delay, Governor’s School will be closed for students. If Pittsylvania County Schools are closed, Governor’s School will also be closed. Assignments and/or lectures may be posted on Canvas when Governor’s School is affected by inclement weather. It is the student’s responsibility to check Canvas and complete assignment before their next class meeting.

Cell Phone Policy: Per Executive Order 33, which prohibits cell phones in schools, cell phones and personal electronic devices, including smartwatches, headphones, and any device that connects to phones, are not allowed during the bell-to-bell school day. Devices must be turned off and stored in a backpack or purse, not on the student (for example, pockets of hoodies or clothing, etc.).

Assignments: In order to be successful in this class, all assignments must be completed. Every assignment has value and should be treated as such. Do not complete an assignment simply to turn it in; assignments should be completed with the purpose of showing mastery of the learning objective. It is important that students show their levels of mastery of skills for the instructor to evaluate and provide feedback. Assignments in this class typically build upon one another, and it is expected that students read and reflect upon feedback. Not completing an assignment will make the next assignment difficult or impossible to complete, and not implementing feedback will have negative effects on future assignments.

Student Conduct Policy:

- Students are expected to be active and engaged during each class period.
- Students are expected to show respect to each other and the instructor at all times.

Procedures:

- The student’s first and last name along with the date should be written in the top right-hand corner of every assignment.
- Students must use their PGSMST email to communicate with teachers.

No Generative AI Usage Permitted: *For the duration of this course, the use of Generative AI in assignments is strictly prohibited. Assignments are opportunities for personal growth, critical thinking, and applying your acquired knowledge. Your individual effort is essential in demonstrating your understanding of the course material. Dependence on AI undermines these objectives and compromises the integrity of the learning process. We appreciate your commitment to academic honesty and dedication to upholding this course’s principles by refraining from using Generative AI in your assignments.*

Revisions/Updates to Syllabus:

- Students will be notified of any revisions or updates to course policy and/or the syllabus in class.
- The most current version of the syllabus will be maintained on Google Classroom.

Danville Community College: Additional Campus Policies and Resources

Additional Academic Resources

- Online Learning Resources: <https://danville.libguides.com/canvas>
- Library Resources: <https://danville.edu/library>
- Assistance with Distance Learning: canvas@danville.edu
- Help & Support Link within Canvas Course site: <https://help.instructure.com>
- Help with my DCC Login/Multi-Factor Authentication (MFA): helpdesk@danville.edu or (434) 797-8500

Disability Accommodation Policy

Danville Community College is committed to insuring that students with documented disabilities have the opportunity to take part in educational programs and services in accordance with the requirements of the Americans with Disabilities Act (ADA) of 1990 and Section 504 of the Rehabilitation Act of 1973. Section 508 of the Rehabilitation Act (29 U.S.C. 794d), as amended in 1998, is a federal law that requires agencies to provide individuals with disabilities equal access to electronic information and data comparable to those who do not have disabilities, unless an undue burden would be imposed on the agency. Canvas is compliant with Section 508. Students seeking accommodations must make an appointment with the ADA Coordinator in the Accessibility Services Office. Accommodations will be made in accordance with the Accommodation Letter from the ADA Coordinator. This letter should be presented to the instructor during the first week of class. For more information go to <https://danville.edu/accessibility-services>. For more information on ADA Services: Phone: (434) 797-8490. Email: ada@danville.edu

Testing Center

The Testing Center proctors both make-up tests and distance learning exams. It can also facilitate testing for distance learning students at off-campus locations. The Testing Center is located on the upper-level of the Learning Resources Center. Exams can be administered as paper & pencil, Internet, or secure browser based exams. Tests are proctored during regular LRC hours (<https://danville.libguides.com/hours>). For additional information, contact the Testing Center: Phone: (434) 797-8404 Email: testingcenter@danville.edu

Tutoring

1. **Face-to-Face:** DCC Tutoring Center. Trained peer and professional tutors are available to tutor specific subject areas and to assist students in developing effective learning strategies. Tutoring is designed to support and enhance your classroom learning. DCC's tutorial services are nationally certified by the College Reading and Learning Association. The Tutoring Center is located in the upper level of the Learning Resources Center. For more information on tutoring services: Phone: (434) 797-6432. Email: tutoring@danville.edu.
2. **Online:** Brainfuse is a 24/7 online tutoring service provided free to students at Danville Community College. Students can get help in Math, Biology, Chemistry, Physics, Economics, Accounting, Statistics, Spanish, Writing and more. Access to Brain-fuse is provided through Canvas. If you have any questions about Brainfuse please contact the Tutoring Center: Phone: (434) 797-6432 Email: tutoring@danville.edu

DCC Title IX (Sexual Harassment and Misconduct): Your Rights and How to Make a Report

Consistent with its mission, Danville Community College is committed to providing a learning and working environment that emphasizes the dignity and worth of every member of its community. Sexual misconduct, which encompasses a range of behavior used to obtain sexual gratification against another's will or at the expense of another in any form will not be tolerated. Sexual misconduct includes sexual harassment, sexual assault, sexual exploitation, and sexual violence. Sexual harassment is unwelcome conduct of a sexual nature, which can include unwelcome sexual advances, requests for sexual favors, or other verbal, nonverbal, or physical conduct of a sexual nature. Thus, sexual harassment prohibited by Title IX can include conduct such as touching of a sexual nature; making sexual comments, jokes, or gestures; writing graffiti or displaying or distributing sexually explicit drawings, pictures, or written materials; calling students sexually charged names; spreading sexual rumors; rating students on sexual activity or performance; gender-based stalking or bullying; conditioning a benefit on submitting to sexual advances; or circulating, showing, or creating e-mails or websites of a sexual nature. Under Title IX, this constitutes sexual misconduct and includes rape or sexual assault. If you have been the victim of sexual harassment or other sexual misconduct, you have certain rights under Title IX. For additional information regarding your rights, please consult the DCC Title IX website at <https://danville.edu/titleix>.

For college Title IX officials to investigate cases, all faculty, staff members, and students are required to report incidents of sexual harassment including sexual violence in accordance with college policy and federal law. To file a complaint at Danville Community College go to the following link: https://cm.maxient.com/reportingform.php?DanvilleCC&layout_id=1

DCC Student Initiated Grievance Procedure: [DCC Handbook](#)

Emergency Response Procedures:

- Refer to DCC's resource page: [DCC Emergency Response Preparedness](#)
- Sign up for DCC Alert System to receive notification by phone and/or other devices [DCC Alert System](#)

TimelyMD (not applicable to currently enrolled high school students)

Danville Community College students have FREE, 24/7 access to virtual care services with TimelyCare — the virtual health and well-being platform from TimelyMD, designed for college students. Students do not need insurance to access TimelyCare services. It can be accessed in the following ways: In the Canvas course on the left hand menu under "TimelyCare" or by visiting <https://app.timelycare.com/auth/login>

Office of Veterans' Affairs

DCC Campus is a "Military Friendly Campus," and this office is dedicated to helping eligible veterans, dependents, reservists, guardsmen, and disabled veterans (service connected) in the pursuit of education, be it higher education, retraining, vocational skills or just lifelong learning. We will assist veterans in using their earned Veterans benefits through the Department of Veteran Affairs. Please contact Mr. Sam Lowery: Phone: 434 797-8506 Email: sam.lowery@danville.edu

Single Stop Program for Enhanced Student Access to Public Benefits

Single Stop, a one-stop shop for meeting the basic needs of families, is partnering with the Virginia Community College System (VCCS) and Danville Community College (DCC) to help students access public benefits without the hassle of applying through each individual public benefit agency. This resource will confidentially screen candidates for public benefits and provide them with specialized staff follow-up. When a student works with Single Stop to apply for public benefits like the Supplemental Nutrition Assistance Program (SNAP), Women, Infants, and Children Nutrition Program (WIC), and Medicaid, there are no language barriers or waiting in line. The Single Stop screening tool determines eligibility for a wide variety of public benefit programs and dedicated Single Stop staff to help applicants navigate the process, as well as assistance with filing tax returns at no cost. For more information about DCC's collaboration with the Single Stop program: Email: singlestop@danville.edu Visit <https://danville.edu/single-stop>

FERPA: The Family Educational Rights and Privacy Act of 1974, Sec.438, PUB.L. 90-247, as amended, sets forth requirements governing the protection of students' right to privacy in their education records and affords them a right to inspect such records. Visit: [DCC Catalog - Admissions Information](#)

Unit	Lesson	Topic	Assessment
UNIT 1: Limits (Intro)	Intro	Introduction - PreAssessment	
	Lesson 1.1	Limits of Graphs	Formative Assessment (1.1)
	Lesson 1.2	Limits by Algebraic Techniques	Formative Assessment (1.1-1.2)
	Lesson 1.3	Limits of Piecewise Functions	Formative Assessment (1.3-1.4)
	Lesson 1.4	Limits of Absolute Value Functions	
	Lesson 1.5	Limits of Square Root and Radical Functions	Formative Assessment (1.5)
	Lesson 1.6	Proving Limits	
	Unit 1	Unit 1 Test	SUMMATIVE ASSESSMENT
UNIT 2: Limits (Advanced Topics)	Lesson 2.1	Transcendental Limits	Formative Assessment (2.1)
	Lesson 2.2	Infinite Limits	Formative Assessment (2.2-2.3)
	Lesson 2.3	Limits Approaching Infinity	
	Lesson 2.4	Composition and Properties of Limits	Formative Assessment (2.4-2.5)
	Lesson 2.5	Continuity of Functions	
	Lesson 2.6	Intermediate Value Theorem	
	Unit 2 Test	Unit 2 Test	SUMMATIVE ASSESSMENT
	UNIT 3: Derivatives (Intro)	Lesson 3.1	Definition of a Derivative
Lesson 3.2		Basic Derivative Rules	Formative Assessment (3.2)
Lesson 3.3		Product Rule	Formative Assessment (3.3-3.4)
Lesson 3.4		Quotient Rule	
Unit 3		Unit 3 Test	SUMMATIVE ASSESSMENT
UNIT 4: Derivatives (Advanced Topics)	Lesson 4.1	Trigonometric Derivatives	Formative Assessment (4.1)
	Lesson 4.2	The Chain Rule	
	Lesson 4.2	The Chain Rule	Formative Assessment (4.2)
	Lesson 4.3	Higher Order Derivatives	Formative Assessment (4.3-4.4)
	Lesson 4.4	Tangent Lines	
	Lesson 4.5	Rates of Change - Velocity	Formative Assessment (4.5)
	Unit 4	Unit 4 Test	SUMMATIVE ASSESSMENT
1 st Semester Exam	Exams	Exams	SUMMATIVE ASSESSMENT 1st Semester Exam
	Exams	Exams	
	Exams	Exams	
	Exams	Exams	
	Exams	Make-Up Exams	

Unit	Lesson	Topic	Assessment	
Unit 5: Derivatives (Advanced Topics)	Lesson 5.1	L'Hopital's Rule	Formative Assessment (5.1-5.2)	
	Lesson 5.2	Inverse Trigonometric Derivatives		
	Lesson 5.3	Implicit Differentiation	Formative Assessment (5.3)	
	Lesson 5.4	Related Rates		
	Lesson 5.5	Derivatives of Hyperbolic Functions	Formative Assessment (5.5)	
	Unit 5	Unit 5 Assessment		SUMMATIVE ASSESSMENT
Unit 6: Applications of Derivatives	Lesson 6.1	First Derivative Test		
	Lesson 6.2	Second Derivative Test	Formative Assessment (6.1-6.2)	
	Lesson 6.3	Curve Sketching	Formative Assessment (6.3)	
	Lesson 6.4	Mean Value Theorem, Rolle's Theorem	Formative Assessment (6.4-6.5)	
	Lesson 6.5	Optimization		
	Lesson 6.6	Differentials		
	Unit 6	Unit 6 Assessment		SUMMATIVE ASSESSMENT
Unit 7: Integration (Intro)	Lesson 7.1	Area, Summation/Sigma Notation		
	Lesson 7.2	Riemann Sums	Formative Assessment (7.1-7.2)	
	Lesson 7.3	Sigma Notation		
	Lesson 7.4	Limit Definition of Area	Formative Assessment (7.3-7.4)	
	Lesson 7.5	Basic Integration	Formative Assessment (7.5-7.6)	
	Lesson 7.6	1 st Fundamental Theorem of Calculus		
	Unit 7	Unit 7 Assessment		SUMMATIVE ASSESSMENT
Unit 8: Integration (Advanced Topics)	Lesson 8.1	Properties of Integrals, Average Value	Formative Assessment (8.1)	
	Lesson 8.2	U-Substitution	Formative Assessment (8.2)	
	Lesson 8.3	Natural Log and Trig Integration	Formative Assessment (8.3-8.4)	
	Lesson 8.4	2 nd Fundamental Theorem of Calculus		
	Lesson 8.5	Net Change Theorem		
	Unit 8	Unit 8 Assessment		SUMMATIVE ASSESSMENT
	***** End of Year Activities (AP Testing/Awards/Field Trips) *****			
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2 nd Semester Exam	Exams	Exams	SUMMATIVE ASSESSMENT 2nd Semester Exam	
	Exams	Exams		
	Exams	Exams		
	Exams	Exams		
	Exams	Make-Up Exams		