



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 264: Calculus II
Credit Hours: 4
Fall 2025 & Spring 2026
PGSMST/DCC
(276) 656-0328

Instructor: Kendra Hardy
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Phone: 434-766-6647 (office)

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: Continues the study of calculus of algebraic and transcendental functions including rectangular, polar, and parametric graphing, indefinite and definite integrals, methods of integration, and power series along with applications. Features instruction for mathematical, physical and engineering science programs.

General Course Purpose: The general purpose of this second course in a three course sequence is to prepare students for further study in calculus with analytic geometry as well as topics such as linear algebra and differential equations so that they meet the necessary competencies in integration, algebraic and transcendental functions, graphing, power series and their applications.

Prerequisite(s): Completion of MTH 263 (Calculus I) with a grade of C or better

Course Student Learning Outcomes:

❖ Applications of Integration

- Compute volumes by cross-section
- Compute volumes by disk-washer
- Compute volumes by shells
- Compute Work (spring, rope)
- Compute Work (pumping liquids)
- Compute Arc Length
- Compute Areas of surfaces of revolution
- Compute Applications dealing with the center of mass

❖ Techniques of Integration: *To be applied, as appropriate, to polynomial, rational, radical, exponential, logarithmic, trigonometric, inverse, and hyperbolic functions*

- Integrate by parts
- Calculate trigonometric integrals of various powers
- Calculate integrals by trigonometric substitution
- Define the indeterminate forms and apply L'Hopital's Rule
- Calculate improper integrals
- Integrate by partial fractions
- Integrate using Tables and Software
- Approximate integrals using Trapezoidal and Simpson's Rules along with error estimation

❖ Infinite Sequences and Series

- Write the definition of and understand Sequences
- Write the definition of and understand introductory Series
- Determine convergence by the integral test
- Determine convergence by the comparison test
- Determine convergence by the alternating series test
- Determine absolute convergence (ratio, root tests)
- Apply strategies for testing series
- Work with power series
- Represent functions as power series
- Find Taylor, Maclaurin series and polynomials
- Calculate Taylor and Maclaurin series

❖ Parametric Curves and Polar Coordinates

- Represent curves by parametric equations
- Perform calculus with parametric curves
- Use and graph with polar system
- Calculate areas and lengths in polar coordinates
- Define the conic forms in polar form

Textbooks/Supplies:

The student is expected to have the following materials

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

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: Integration	Intro	Introduction to Calculus II	
	Lesson 1.1	Integration	Formative Assessment (1.1)
	Lesson 1.2	U-Substitution	Formative Assessment (1.2-1.3)
	Lesson 1.3	Change of Variable	
	Lesson 1.4	Trapezoidal Rule/Simpsons Rule	
	Unit 1	Unit 1 Test	SUMMATIVE ASSESSMENT
Unit 2: Integration (Advanced Topics)	Lesson 2.1	Long Division	Formative Assessment (2.1-2.2)
	Lesson 2.2	Completing the Square	
	Lesson 2.3	Trig Integration	Formative Assessment (2.3-2.4)
	Lesson 2.4	Trig Substitution	
	Unit 2	Unit 2 Test	SUMMATIVE ASSESSMENT
Unit 3: Integration (Advanced Topics)	Lesson 3.1	Integration by Parts	Formative Assessment (3.1-3.2)
		Partial Fraction Decomposition	Formative Assessment
	Lesson 3.2	Integration using PFD	Formative Assessment (3.1-3.2)
	Lesson 3.3	L'Hôpital's Rule	Formative Assessment (3.3-3.4)
	Lesson 3.4	Improper Integrals	
	Unit 3	Unit 3 Test	SUMMATIVE ASSESSMENT
Unit 4: Integration Applications	Lesson 4.1	Area Between Two Curves	Formative Assessment (4.1)
	Lesson 4.2	Volume: The Disc Method	Formative Assessment (4.2-4.3)
	Lesson 4.3	Volume: The Washer Method	
	Lesson 4.4	Volume: The Shell Method	
	Lesson 4.5	Volume: Cross-Section	
	Unit 4	Unit 4 Test	SUMMATIVE ASSESSMENT
Unit 5: Integration Applications	Lesson 5.1	Arc Length	
	Lesson 5.2	Surfaces of Revolution	Formative Assessment (5.1-5.2)
	Lesson 5.3	Work: Spring, Rope, Pump	Formative Assessment (5.3)
	Lesson 5.4	Center Mass	
	Unit 5	Unit 5 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 6: Sequences (Intro)	Lesson 6.1	Factorials	Formative Assessment (6.1-6.2)
	Lesson 6.2	Sigma Notation	
	Lesson 6.3	Introduction to Sequences	Formative Assessment (6.3-6.4)
	Lesson 6.4	Convergence of a Sequence	
	Lesson 6.5	Bounded & Monotonic	Formative Assessment (6.6)
	Lesson 6.6	Series	
	Lesson 6.7	Telescoping Sequences	Formative Assessment (6.7-6.8)
	Lesson 6.8	Geometric Sequences	
	Unit 6	Unit 6 Assessment	SUMMATIVE ASSESSMENT
Unit 7: Series	Lesson 7.1	Integral Test	Formative Assessment (7.1-7.3)
	Lesson 7.2	P-Series Test	
	Lesson 7.3	Direct Comparison Test	
	Lesson 7.4	Limit Comparison Test	Formative Assessment (7.4-7.6)
	Lesson 7.5	Alternating Series	
	Lesson 7.6	Absolute & Conditional Convergence	
	Lesson 7.7	The Ratio Test	Formative Assessment (7.7-7.8)
	Lesson 7.8	The Root Test	
	Unit 7	Unit 7 Test	SUMMATIVE ASSESSMENT
Unit 8: Series	Lesson 8.1	Power Series	Formative Assessment (8.1-8.3)
	Lesson 8.2	Derivatives/Integrals of Power Series	
	Lesson 8.3	Representation of Functions	
	Lesson 8.4	Functions from Derivatives/Integrals	Formative Assessment (8.4-8.6)
	Lesson 8.5	Maclaurin Series	
	Lesson 8.6	Binomial Series	
	Lesson 8.7	Taylor Polynomials	
	Unit 8	Unit 8 Test	SUMMATIVE ASSESSMENT
Unit 9: Parametric Equations and Polar Curves	Lesson 9.1	Plane Curves & Parametric Equations	Formative Assessment (9.1-9.4)
	Lesson 9.2	Parametric Derivatives	
	Lesson 9.3	Slope and Tangent Lines	
	Lesson 9.4	Concavity	Formative Assessment (9.5-9.7)
	Lesson 9.5	The Polar Coordinate System	
	Lesson 9.6	Basic Polar Graphs	
	Lesson 9.7	Slope & Tangent Lines of Polar Curves	
	Lesson 9.8	Conics in Polar Form	
	Unit 9	Unit 9 Test	SUMMATIVE ASSESSMENT
	***** End of Year Activities (AP Testing/Awards/Field Trips) *****		
***** End of Year Activities (AP Testing/Awards/Field Trips) *****			
2 nd Semester Exam	Exams	Exams	SUMMATIVE ASSESSMENT 2nd Semester Exam
	Exams	Exams	
	Exams	Exams	
	Exams	Exams	
	Exams	Make-Up Exams	