Patrick & Henry Community College

MTH 263-G2 - **Calculus I**
2025-2026
Jenny J. Whittaker

OFFICE LOCATION: PHCC West Hall, room 202

OFFICE HOURS: M-F 11:00 AM – 2:30 PM, or by appointment

OFFICE PHONE: 276-656-0328 ext. 3

E-MAIL ADDRESS: jwhittaker@pgsmst.com

CLASS MEETING TIME: M/W 9:25 AM – 10:55 AM

CLASSROOM LOCATION: PHCC West Hall, room 224

MODE OF DELIVERY: face to face

COURSE CREDITS: 4

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

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

A. 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.

B. 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

C. TEXTBOOK(S) AND REQUIRED TOOLS OR SUPPLIES

No Textbook

Supplies

- Pencils
- One 1-2" 3-ring binder to include Notes/Homework, Quizzes/Tests, Projects/Labs
- Loose-leaf paper
- TI-84 Graphing calculator (may be checked out from the school)
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D. STUDENT EVALUATION

Grades will be calculated using the points system (i.e. $\frac{points\ earned}{points\ possible}$ x 100). Each assignment will be worth a certain point value depending on the level of difficulty. Students will be assessed in various ways, including, but not limited to, homework assignments, activities, assessments, and projects.

<u>9 weeks grading periods are calculated by the following. Each grading period grade is 40% of your final grade.</u>

- **Homework**
  - For each lesson, students will be provided a note sheet and practice problems to complete for homework.
  - Students will discuss homework daily with a study partner. This will be followed by a class discussion led by the students.
  - Homework should be kept in a three-ring binder and should be organized chronologically by lesson number of the assignment included at the top of the page.

- **Quizzes – 50 points**
  - There will be 2-3 quizzes on the material you have learned for each unit. These quizzes are cumulative.
  - Quizzes will be completed in class and will be taken individually with the use of notes.

- **Tests – 100 points**
  - A test will be given at the end of each unit. Tests are a combination of multiple choice and free-response questions.
  - Tests will be completed in class and will be taken individually without the use of notes or other resources.

- If your test grade is higher than your quiz average, your quiz grade will be adjusted to match your test score.

- **Projects – 50 or 100 points**
  - Students will be assigned projects throughout the semester to assess students' mastery of course content.
  - Depending on the level of difficulty, projects will be worth 50 points or 100 points as specified on the grading rubric provided with the project guidelines.
  - Projects not submitted by the due date will incur a 20% deduction per day after the due date.

- **Final Exam - 100 points**
  - Individual Project (100 points) – Student will select their own question and parameter of interest, collect data, present descriptive statistics, and support their findings with inferential statistics. Student will submit a typed report of their findings. A rubric will be provided for expectations. ***This project will not be accepted late.***

Semester Exam Policy

All students are expected to take semester exams on the day scheduled. Only in a rare case, such as illness confirmed by a physician, death in the family, or a required base school activity confirmed by a student's principal will a make-up be allowed. **All exceptions to the examination schedule must be approved ahead of time by the Director.** If a student does not report for a semester examination due to an emergency, the Governor's School office must be notified on the day of the exam by the student's parent/guardian. Failure to follow this policy may result in a grade of zero (0) for the exam.

E. GRADING SCALE:

A	90 - 100
B	80 - 89
C	70 - 79
D	60 – 69
F	59 – below

Grades are calculated as follows
Quarter 1 – 40%
Quarter 2 – 40%
Final Exam – 20%

A student earning a grade of C or higher will earn college credit for this course

F. EXPECTATIONS FOR STUDENT SUCCESS

- Be present for each class
  - Students should email the instructor when missing a class. All lessons will be recorded and uploaded into the Canvas Module for that date. Make sure to watch the videos and complete the accompanying assignments by the due date.

- Students should submit a note to Mrs. East within 24 hours of the student's return with a valid reason for student's absence. ***No make-up work will be allowed*** for unexcused absences.
- Students should see instructor the day returning from a missed class to ask questions pertaining to the lecture and/or assignment.
- Students should make arrangements to make up quizzes/tests if missed due to absence.

- Submit all work on time.
  - Students should submit all work by the due date. Assignments not submitted by the due date will incur a 20% deduction per day after the due date.
  - Work that is to be submitted on Canvas should be uploaded in the Assignment Tab for the specified assignment. Work should be scanned and uploaded as one document. To submit assignments on Canvas, click on the link for the assignment, then upload the file, preview the file to ensure that all portions or problems are present, then click the "submit" icon. Log out, log back in, and make sure to double check that your submission went through. "Canvas must not be working" is not an excuse for late work.

- Check grades often
  - Although all lessons are available and all work is submitted through Canvas, grades will be entered in ThinkWave. Please make sure to check these every day. If there is a problem, see me immediately. DO NOT wait until the end of the 9 weeks to discuss a problem.
  - If you are caught cheating, that grade will be recorded as a zero.

- Create a fun learning environment.
  - Students may have drinks in the classroom, provided the drink has a screw-on cap. Students must leave their area clean.
  - Students should show respect for classmates and instructor, listen carefully, and not interrupt someone who is talking.
  - Cell phones and apple watches may not be used in class unless permission is given by the instructor. All other devices must remained closed unless needed for an assignment. Phones and apples watches must be placed in silent mode and placed in your personal designated area upon entering the classroom.

WHAT A STUDENT CAN EXPECT FROM THE INSTRUCTOR

- On any day that a student is absent from class, the student will be able to access the recorded lesson and proceed as if he/she were in class.
- Homework posted on Canvas upon a student's absence from class will be assessed, and feedback provided within 48 hours.
- The instructor will evaluate and return quizzes and tests work promptly with feedback.

- The instructor will be available before school by 7:15 A.M., between classes, and after governor's school for tutoring.
- Continuous support, assistance, and encouragement.
- Timely responses to emails. Students should email the instructor using their pgsmst email accounts and emails should be sent to jwhittaker@pgsmst.com. I check my email frequently each day to answer any questions about homework, assignment clarification and will answer quickly. If outside of school hours, responses may be delayed, but I do still try to respond quickly.

G. STUDENT SUPPORT/DISABILITY STATEMENT:
Patrick & Henry Community College is committed to providing equal educational opportunities and appropriate academic accommodations to students with disabilities, in compliance with Section 504 of the Rehabilitation Act and the Americans with Disabilities Act (ADA). If you have a disability or believe you may require reasonable accommodations to successfully complete this course, please contact the Accessibility Specialist, located in the Walker Fine Arts Building, Room 235, at 276-656-0257 or accessibility@patrickhenry.edu, to discuss your needs confidentially. Early contact is encouraged to ensure timely access to accommodations and services.

H. EMERGENCY INFORMATION
See below for pertinent safety information.
https://www.patrickhenry.edu/campus-safety/alert-systems/

J. IMPORTANT DATES TO REMEMBER:
The school calendar is available at the following link: www.pgsmst.com .

K. SPECIFIC COLLEGE POLICIES
Academic Integrity

Academic integrity is a fundamental value of the P&HCC community. All students are expected to exhibit conduct keeping with the values of honesty, trust, fairness, respect, and responsibility. Behavior that violates this fundamental value will be handled in accordance with the college's Academic Integrity Policy
The link to the Academic Integrity Policy is
https://www.patrickhenry.edu/wp-content/uploads/2025/01/Academic-Integrity-Policy-REV1.7.2025.pdf
Other policies associated with student conduct may be found here:
https://catalog.patrickhenry.edu/content.php?catoid=10&navoid=625
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 and creativity are 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.

Inclement Weather
If Henry County schools are delayed one hour, Governor's School will open one hour late. If Henry County schools are delayed two hours, Governor's School classes will be cancelled. If Henry County schools are closed, Governor's School is closed, and classes do not meet. Henry County/Martinsville workdays do not impact classes at Piedmont Governor's School.

- Assignments and/or lectures may be posted on Canvas on days when Governor's School classes are affected by inclement weather. It is the student's responsibility to check Canvas and complete the assignments before their next class meeting.
- A link will be established on Canvas where students should submit homework that is due on a day where governor's school is cancelled. Homework should be posted by 7:00 AM of the day the assignment is due.

Testing Center and Learning Lab
The Testing Center and Learning Lab are located on the first floor of the Learning Resource Center (LRC) on the main campus. Students enrolled in face-to-face classes may be required to make up missed tests in the Testing Center. Online classes require the use of Respondus Lockdown or Respondus Monitor or similar proctoring programs. In some cases, students outside the service region may be required to take proctored tests at a different site. If this is the case, students must complete the Student-Proctor Agreement form (see form for proctor requirements/guidelines).
https://www.patrickhenry.edu/wp-content/uploads/2024/03/StudentProctor.pdf
Tutoring and Academic Support

Free individual and group tutoring is available both in-person and online at P&HCC. Students can access Brainfuse, our primary platform for academic support, through Canvas or their MyP&HCC portal. Live help from a Brainfuse tutor is available 24/7. To connect with a P&HCC tutor, use the Tutor Match feature within Brainfuse to view subjects and schedule a session with our on-site staff.
For more information, visit: www.patrickhenry.edu/tutoring. If students need further assistance, they may contact Tutoring Coordinator, Greg Morrison, at gmorrison@patrickhenry.edu, or Coordinator of Academic Services, Valandrea Dillard, at vdillard@patrickhenry.edu.

L. STUDENT LEARNING OUTCOMES

Students may note in Canvas that student learning outcomes have been reported for the course (this does not apply to all courses). If the outcomes constitute a graded assessment or are part of a larger graded assessment, those outcomes are part of your course grade (see section D on "Student Evaluation"). Otherwise, the outcomes do not impact your course grade. Ask the instructor if you have questions regarding student learning outcomes.

M. OTHER POLICIES

All P&HCC policies are applicable to this class whether explicitly indicated in this syllabus or not.

N. QUIZ/AFFIDAVIT

To confirm each student has read and understands the syllabus and has been provided access to the syllabus, he/she must complete the syllabus affidavit. The syllabus affidavit is available on Canvas and must be completed by August 25.

Patrick & Henry Community College

MTH 263-G2 **Calculus 1**

Fall 2025 – Spring 2026 INSTRUCTOR: Jenny Whittaker

M. AFFIDAVIT

My signature below indicates that I have read and understand this syllabus.

Student Name (Print)_____ Parent/Guardian Name _____

Student Signature _____ Parent/Guardian Signature _____

Date _____ Date _____

Note: *This syllabus is subject to change at the discretion of the instructor. It is the responsibility of the student to keep abreast of these changes.*

This syllabus conforms to the Patrick & Henry Community College syllabus guidelines.