

- A. Respectful behavior toward everyone in the room is expected at all times. Individual conversations during class are distracting and disrespectful to the instructor and fellow students. Orderliness and organization are essential to learning. Questions and insights are welcomed when appropriate during class. Please refrain from using offensive language at any time.
- B. Please come to class on time. Class will begin with content and homework review, and/or a weekly quiz or unit test. No extended time will be given if you are late. **Missed quizzes will receive a grade of zero (0 points).**
- C. Please come to class prepared with a pen/pencil, a notebook (paper), and your graphing calculator. You **may not borrow** a calculator from a fellow classmate during tests and quizzes. If you come to class without your calculator, you may borrow one for the class period. You **may not** use your cell phone calculator during class unless given prior permission.
- D. **Please SILENCE your cell phone prior to class and place it on the desk in front of you during class.** [Ms. Siebert if cell goes off in class! → ☹]
- E. Rarely can a student be successful in mathematics without significant practice **outside of the classroom!** For college level mathematics, it is relatively standard to spend **two (2) hours** working on course material outside of the classroom for every one hour (1) of classroom instruction. Please plan your time accordingly. Time management will be an important key in your college experience. Time must be spent reading the textbook, reviewing class notes, doing homework, meeting with classmates for review, and scheduling time for extra help if necessary.

5. Extra Help: I will be available for extra help Tuesdays before school and you can also make an appointment with me for periods 1, 5, or 8 via email or at the end of class.

Tutoring is also available from the Math & Science Center located in

Rooms 224/226 in Washington hall on DCC Campus. **Use these resources early & often!**

6. Academic Integrity:

Dutchess Community College is committed to the principles of honesty, integrity, and ethical behavior. It is expected that students will recognize these values and adhere to all aspects of student conduct and academic honesty inside and outside of the classroom.

Academic dishonesty in any form is regarded by the College as a breach of academic ethics and may result in disciplinary action.

Academic dishonesty includes, but is not limited to, the following:

1. Cheating on examinations
2. Plagiarism: the representation of another's ideas or writing as one's own.
Examples include: presenting all or part of another person's published work as something one has written;
paraphrasing or summarizing another's writing without proper acknowledgement (citation);
representing another's artistic or technical work or creation as one's own.
3. Willingly collaborating with others in any of the above actions which result(s) in work being submitted which is not the student's own.
4. Stealing examinations, taking electronic images, falsifying academic records and other such offenses.
5. Knowingly permitting another student to use one's work or cheat from one's examination.
6. Submitting work previously presented in another course without permission of instructor.
7. Unauthorized duplication of computer software.
8. Unauthorized use of copyrighted or published material.

If, based on substantial evidence, an instructor deems that a student is responsible for a violation of the Academic Integrity Policy, the instructor may take the following actions:

- The instructor may require that the student repeat the assignment or examination, or
- The instructor may give the student a failing grade for the assignment or examination, or
- The instructor may give the student a failing grade for the course.

As an institution of higher education, it is incumbent on the College to ensure that students understand and uphold the highest standards of academic honesty and that there be accountability in cases where students repeatedly violate those principles. In order to build an intellectual culture of academic integrity and ensure that students learn appropriate behavior in their academic endeavors, faculty and staff who judge that a student intentionally violates the Academic Integrity Policy shall report said violation to the Office of Academic Affairs.

The Office of Academic Affairs, in consultation with faculty and staff, will be responsible for developing and implementing appropriate academic administrative reporting procedures, educational interventions, disciplinary actions, and appeal processes.

Students' right to privacy will be upheld, and all students shall have the right to appeal any action that results from this process.

COVID-19 Safety Protocols Statement

Only students who are scheduled for an in-person class or have a confirmed appointment are allowed on campus. While on campus, all students must comply with the College's COVID-19 protocols including: requirement to wear face coverings, follow social distancing guidelines and exercise preventative measures that include symptom monitoring and personal safety practices. Every time a student comes to campus they will be required to complete a health screening survey to ensure that they are not symptomatic, have not tested positive, have not been in contact with someone who has tested positive in the last 14 days, and to confirm their recent travel history. This health screening survey must be completed on the day of the class/appointment prior to arriving on campus.

Please note that every building will have a check-in process that will require students to show their DCC ID and confirmation of completing the Health Screening Survey, which indicates clearance to enter the building. Please allow adequate time to complete the check-in process to ensure on-time arrival for class.

All students must display their DCC ID at all times when on campus.

While I fully encourage meaningful interactions and discussions with your classmates and peers about the material and concepts that are presented, ANY and ALL material that you submit for purposes of grading and review MUST BE YOUR OWN! You are encouraged to freely discuss concepts, ideas, homework exercises, course notes, and text book materials with your classmates and tutors, but any submitted documents must reflect your own individual understanding of the course assessment. If I find evidence of copying or sharing of mathematical or written work, you will receive a zero (0) for that assessment.

Starfish

Starfish is an online student engagement tool used to connect students to faculty, staff and support services across campus. Instructors may provide feedback in Starfish that will help the student and advisor/academic

coach understand how a student is doing in a class, so that support can be provided if needed to facilitate student success. Please check your myDCC email and log into Starfish daily. Additionally through Starfish students can access individualized advisement in the ACT Center.

Academic Accommodations

NOTE: Students with disabilities are encouraged to use their accommodations in a timely fashion.

Dutchess Community College makes reasonable accommodations for students with documented disabilities. Students requesting accommodations must first register with the Office of Accommodative Services (OAS) to verify their eligibility. IEPs from high school do not carry over to college. After documentation review and meeting with the student, OAS staff will provide eligible students with accommodation letters for their professors. Students must obtain a new letter each semester and discuss their accommodation plan with their instructors as soon as possible to ensure timely accommodations. The Office of Accommodative Services is located in the Orcutt Student Services Building, Room 103, phone # (845)431-8055.

Title IX

Dutchess Community College is committed to maintaining a positive campus climate and will not tolerate any form of sexual harassment including sexual assault, sexual violence, and sexual misconduct. It is the responsibility and obligation of all members of the College community to report and/or to assist others in reporting incidents of sexual harassment.

Please direct all Inquiries and reports related to sexual harassment and sexual violence to:

Title IX Coordinator: Esther Couret, Director of Human Resources
Dutchess Community College, Bowne Hall, Room 118
53 Pendell Road, Poughkeepsie, NY 12601
(845) 431-8673
esther.couret@sunydutchess.edu

For information regarding the DCC sexual harassment and sexual violence policy and resources go to:
https://dutchess.open.suny.edu/webapps/portal/execute/tabs/tabAction?tab_tab_group_id=_1_1

For anonymous reports go to Share at DCC: <https://www2.sunydutchess.edu/cgi-bin/share-at-dcc/index.php>

DCC - MAT 221

Course Title: Analytic Geometry and Calculus I

Credits: 4

Course Description: This course is the first of a three-semester sequence developing calculus for the student majoring in engineering, mathematics, or the sciences. Topics include the derivative, limits, continuity, differentiability, the definite integral, the Fundamental Theorem of Calculus, techniques of differentiation (including for transcendental functions), applications of differentiation, mathematical modeling and computer applications. A graphing calculator from the TI-83/84 family of calculators is required for this course.

Prerequisite: MAT 185 with a grade of at least C, OR 1 year of high school Precalculus with a grade of at least C AND Compass Trigonometry Score of at least 46, OR permission of the department.

Textbooks: *Calculus Concepts & Contexts*, James Stewart, (4e, 2010), Brooks/Cole, Cengage Learning

Mathematica Basics: An Introduction for using Mathematica at Dutchess Community College, Halsey

Calculator: A graphing calculator from the TI-83 or TI-84 family is required for homework and tests. Any calculator with a built in CAS is not allowed on tests.

Chapters Covered: Part of 1,2,3,4,5, part of 6, part of 7

Essential Skills with Technology: The following skills will be emphasized regularly throughout the course, and students will be required to show proficiency with these skills.

[M- Mathematica, GC – Graphing Calculator]

- (M & GC) Define functions
- (M & GC) Graph functions and work with window settings
- (M & GC) Create tables to investigate function behavior
- (GC) Use the Calc Intersect to solve graphically
- (M) Solve symbolically and numerically
- (M) Evaluate symbolically and numerically
- (GC) Use department-supplied programs
- (M) Annotated project reports

MAT221 Learning Outcomes & Syllabus

Student Learning Outcomes

Students will be able to:

1. Compute limits of the elementary functions, including limits involving infinity. Distinguish between ordinary limits and limits of indeterminate forms. Choose an appropriate method of either exact evaluation or numerical approximation.
2. Compute derivatives of elementary functions by applying, as appropriate, the formal definition of the derivative, numerical approximation or differentiation rules.
3. Apply differentiation and limits to solving basic problems involving function estimation, function behavior, and optimization.
4. Evaluate simple definite integrals using, as appropriate, Riemann sums or the Fundamental Theorem of Calculus, and interpret the results.
5. Use the language of calculus to explain and interpret the mathematics used in the problem solving process.
6. Use a graphing calculator and computer algebra system to investigate, illustrate and apply the concepts of calculus.

Tests, Projects and Other Graded Material:

- At least 3 full unit tests, 3 or 4 substantial projects using Mathematica.

- A comprehensive final exam. The final may include both test and project components, or may be just a test. All finals will include some types of questions chosen by the department.
- Quizzes, turn-in homework, discussions, etc. as specified by your teacher.

Introduction to semester and Introduction to Mathematica (5 hours): Quick review of select topics from Chapter 1. Begin to use *Mathematica*. Time will be given for preliminary work with *Mathematica* during Lab time over the first few weeks, but students MUST continue work with learning the program as part of their out of class work.

Limits and Continuity (6 hours): 2.2 The Limit of a Function; 2.3 Calculating Limits Using the Limit laws; 2.4 continuity; 2.5 Limits Involving Infinity - Project using Mathematica

The Derivative (10 hours) : 2.1 The Tangent and Velocity Problems; 2.6 Derivatives and Rates of Change; 2.7 the Derivative as a Function; 2.8: What Does f' Say about f ? - Test and/or Project

Differentiation Rules, Linear Approximations and L'Hopital's Rule (15 hours): 3.1 Derivatives of Polynomials and Exponential Functions; 3.2 The Product and Quotient Rules; 3.3 Derivatives of Trigonometric Functions; 3.4 The Chain Rule; 3.5 Implicit Differentiation; 3.6 Inverse Trigonometric Functions and Their Derivatives; 3.7 Derivatives of Logarithmic Functions; 3.8 Rates of Change in the Natural and Social Sciences (optional); 3.9 Linear Approximations and Differentials; 4.5 Indeterminate Forms and L'Hopital's Rule - Test and/or Project

Applications of the Derivative (11 hours): 4.1 Related Rates; 4.2 Maximum and Minimum Values; 4.3 Derivatives and the Shapes of Curves; 4.4 Graphing with Calculus and Calculators; 4.6 Optimization Problems - Test and/or Project

Antiderivatives and Integrals (8 hours): 4.8 Antiderivatives; 5.1 Areas and Distances; 5.2 The Definite Integral; 5.3 Evaluating Definite Integrals & the First Fundamental Theorem of Calculus

Review and Final Assessment (5 hours)