



**M 172, Calculus II  
2020-2021**

**Credits: 4**

**Course Start/End Date:** August 26, 2020 – June 9, 2021

**Required [and/or Recommended] Textbook(s):** Calculus for AP (Larson and Battaglia)

**Recommended Materials:** Lined paper, notebook (I highly recommend a graphing notebook), three-ring binder or folder, pencils, eraser, correcting pens, graphing calculator (TI-84C is recommended)

### **INSTRUCTOR INFORMATION**

**Instructor:** Hillary Potuzak

**Phone Number:** 324-2321

**E-mail Address:** hpotuzak@helenaschools.org

**Official Course-related Website:** <https://hhs.helenaschools.org/teachers/hpotuzak/>

**Office Hours/Availability to Students:** M-F 8:25 a.m. – 8:55 a.m. and 2:35 – 3:35 P.M.

**Helena College contact:** Stephanie Hunthausen, Director of K-12 Partnerships,  
stephanie.hunthausen@helenacollege.edu

### **COURSE CONTENT**

**Course Description:** This course is a continuation of Calculus I. Topics include transcendental functions, methods of integration, applications of the integral, infinite series and sequences including Taylor's series, polar coordinates, and parametric equations.

#### **Course Learning Outcomes:**

1. Evaluate integrals using a variety of methods (substitution, integration by parts, partial fraction decomposition, trigonometric substitution).
2. Set up and compute integrals in applied situation, such as finding volumes of solids of revolution, arc length, surface area, work fluid pressure, and centers of mass.
3. Determine convergence/divergence of series via various tests (recognizing geometric series, root test, alternating series test).
4. Be familiar with power series (including interval and radius of convergence) and Taylor series expansions of common functions.
5. Recognize and graph parametric and polar equations, as well as compute areas and arc length of polar curves.

#### **Program/Gen Ed Core Outcomes addressed by this course:**

Solve quantitative problems and interpret solutions.

Understand basic principles and explain the natural world.

## **Institutional Competencies addressed by this course:**

**Diversity:** The student will learn to recognize and value individual, group and cultural differences from and within local, national and global perspectives and contexts.

- Critically examine the cultural, historical, social, economic, and/or political circumstances that produce and shape different social/cultural systems and communities either nationally and/or globally.
- Identify processes by which identities and notions of difference are constructed, reinforced, change over time.
- Examine how power structures, oppressions, and privilege shape the conditions of one or more underrepresented groups as well as various strategies and tools for empowerment, equity, social justice, and inclusion.

**Information Literacy:** The student will learn to locate needed information, managing and evaluating the extracted information and using it critically and ethically.

- Pursue critical inquiry by using authentic questions, curiosity, and a willingness to challenge previously held beliefs in order to make new discoveries.
- Demonstrate persistence, flexibility, and patience in a strategic search for information, while recognizing that it may vary greatly in format, perspective, and value.
- Evaluate content among varied and conflicting perspectives in order to identify authoritative sources.
- Participate actively in scholarly or professional conversation by properly citing past research and accurately representing creators' intended meaning.

**Technology Literacy:** The student will use appropriate technology to access, manage, integrate, or create information, and/or use technology to effectively accomplish a given task.

- Internet and email: web search, web navigation, send and receive email, email attachments, security, messaging
- Operating system operations: locating and executing programs, booting, login, updates
- File management: navigation in OS, create files, folders, copy, delete, rename and upload files, Zip and unzip files, access Flash drive
- Word processing software basics
- Presentation software basics
- Spread Sheet software basics

## **Course Schedule/Topical Outline:**

*Course schedule is subject to change based on the needs of the course.*

### **Quarter 1:**

Unit 1: Limits, Continuity, Differentiation

Unit 2: Differentiation, Applications of Differentiation

Unit 3: Applications of Differentiation, Integration

### **Quarter 2:**

Unit 4: Integration, Applications of Integration

Unit 5: Shell Method, Exponential and Logarithmic Functions

### **Quarter 3:**

Unit 6: Slope Fields, Inverse Trig Functions, Other Integration Methods, Logistic Equations, L'Hopital's Rule

Unit 7: Improper Integrals, Sequences, Series

### **Quarter 4:**

Unit 8: More Series

Unit 9: Parametrics, Polars, Vectors

## **Critical Dates:**

End of Quarter 1: October 30, 2020

End of Quarter 2: January 15, 2021

Semester 1 Tests: January 19-21, 2021

End of Quarter 3: April 2, 2021

End of Quarter 4: June 4, 2021

Semester 2 Tests: June 7-9, 2021

*Course schedule and critical dates are subject to change based on the needs of the course.*

## **Grade Calculation Procedure:**

There are three categories that will make up your quarter grades.

### **Classwork and Homework: 10%**

Homework assignments will be due the day after they are assigned.

### **Quizzes: 30%**

Quizzes will be given throughout each unit.

### **Tests: 60%**

Tests will be given at the end of each unit.

Students may retake any summative assessments (chapter tests) for full credit **ONE TIME**. Preparedness for the second, more rigorous, assessment will be at the teacher's discretion and may include additional practice session(s) outside of class time. Re-takes must be taken outside of class and scheduled with the teacher and completed before the end of the semester. **Re-take scores will replace the original test score.**

Semester grades will be made up of 40% from each quarter and 20% from a semester final.

### **Grading Scale:**

Letter grades for the course will be assigned based on the following percentages:

	A (94-100%)	A- (90-93.9%)
B+ (87-89.9%)	B (83-86.9%)	B- (80-82.9%)
C+ (77-79.9%)	C (73-76.9%)	C- (70-72.9%)
D+ (67-69.9%)	D (63-66.9%)	D- (60-62.9%)
	F (0-59.9%)	

### **Instructor's Educational Philosophy:**

Students and faculty each have responsibility for maintaining an appropriate learning environment. Those who fail to adhere to such behavioral standards may be subject to discipline in accordance with Helena College's Student Code of Conduct. Professional courtesy and sensitivity are especially important with respect to individuals and topics dealing with differences including, but not limited to race, ethnicity, nationality, culture, religion, politics, veterans status, sexual orientation, gender, gender identity/expression, age, or disability. Class rosters include students' legal names, but I will gladly honor your request to address you by an alternate name or preferred gender pronoun.

### **Classroom Behavior/Expectations:**

#### **Food & Drink:**

Snacks and drinks with a screw on lid are allowed in the classroom unless it becomes a problem or distraction.

#### **Electronic Devices:**

Your electronic devices are not allowed in class. If you have a device out during the class period, you will be asked to take your device(s) to the office where it is officially recorded. Please refer to the student handbook for the full electronic device policy

### **Extra Credit/Late Work Policy:**

Any work that is late must be turned in to the late box. Late work will only be accepted until the unit test. Keep in mind that if you are not doing the work, then you ARE behind. When you fall behind you WILL struggle with the assessments and WILL NOT meet the standards! Also, I cannot guarantee that you will be given timely feedback on assignments if you turn them in late.

If you are absent for an assessment the expectation is that you will make it up the following day before or after school.

### **Attendance and/or Participation Requirements:**

#### **Attendance:**

Please be here and be on time. The more time you spend in class the more I can teach you!

#### **Tardies:**

After four tardies (per semester) I will assign lunch detention. After that, I will write a referral. For further tardy policy information, please refer to the handbook.

#### **Participation:**

Since your active engagement in lessons will dramatically impact your learning, I expect you to be fully engaged throughout each lesson. I will do all I can to keep the lessons engaging, fast-paced, safe, and fun.

*Official Helena College attendance/excused absence, course withdrawal, incomplete grade, and grade appeal policies and procedures are located in the Academic Information section of the 2019-2020 catalog on the Helena College website.*

### **Additional Resources/Information:**

**As a Helena College student, you have access to the same tools and resources as students attending on-campus classes.**

- Advising
- IT Services
- Tutoring & Research Assistance
- Bookstore
- Library
- Helena College email address

### **Official (Email) Communication:**

The College provides each student with a free email account that is to be used in all communication with college personnel. Official notifications will be sent to students through this account, as well.

### **Academic Dishonesty Definition/Policy Statement:**

Helena College expects its students to adhere to a high standard of academic integrity. It is a violation of academic integrity standards and the student code of conduct to present the ideas, designs, works, or words of another person as one's own efforts, or to permit another person to do so. The following guidelines are intended to clarify these issues for students, faculty, and administration.

The College will regard the following acts as violations of academic integrity constituting academic dishonesty. Although the list and descriptions are not intended to be exhaustive of all types or instances of academic dishonesty, they are presented as examples of

behavior to avoid. It is explicitly the student's responsibility to avoid academic dishonesty of all kinds, and each student is required to seek guidance in advance of taking any questionable action, including but not limited to those enumerated, below.

**Plagiarism:** A student will be considered in violation of standards for academic integrity if they submit an assignment in any form (written, oral, graphic, or computer-generated, etc.) which consists wholly or partially of the words, work, or ideas of another individual without giving the original author proper credit. A similar violation would occur in cases where a student submits a paper or other project/assignment for one course that was originally created for another course even if that student was the originator of the paper/project/assignment in the first instance. Similarly, using facts, figures, graphs, charts or information without acknowledging the source constitutes plagiarism, which may occur verbally, in written form, through computer programs and files, research methods, designs, particular distinctive words or phrases, ideas and images or any other information that was created by another person without acknowledgement of that person's role in its creation. Inadvertent or unintentional misuse or appropriation of another's work (such as relying heavily on source material that is not expressly acknowledged) is still considered plagiarism.

**Copying/Cheating:** A student will be considered in violation of academic integrity standards if they gain, or attempts to gain, credit for work by dishonest or deceptive means. Examples include the use of crib notes, cheat sheets, books, or any other material or electronic device as aids in an examination or any other graded exercise, unless the instructor of the class has given explicit permission to use such materials. Collaboration with another student on an examination or other graded exercise, unless the instructor has given permission, also constitutes copying. It is the policy of the College to prohibit phones, smart watches, and other similar devices during examinations. Prior to administering an examination, instructors will require all such devices are turned off and stored in an inaccessible place. Failure to comply with this policy will constitute a violation of the academic integrity policy. If a student is found in possession of such a device during an examination, they will be assigned a score of 0 for the examination. Further examples include: copying assignments from another source (classmate, etc.); working with others on exams or homework that is not explicitly permitted by the instructor to be collaborative; looking at another student's paper or screen during an exam or assignment; disclosing exam content to others during an exam, or after completion of an exam, including allowing such information to be disclosed to you; and/or attempting to or allowing another person to complete assignments for another person (such as in an online course). The above examples are meant to illustrate violations of the principle of academic integrity, and are not intended to be all-inclusive. Additional instances of dishonesty that are not explicitly identified in the above list will nevertheless be treated as violations.

**Contributing to Academic Dishonesty:** A student will be considered in violation of academic integrity standards if they willfully assist another student in an act of academic dishonesty. Academic dishonesty will not be tolerated. Academic sanctions for a first violation are at the discretion of the instructor and range from a failing grade for the particular assignment to a failing grade in the course in which the academic dishonesty

occurs. When a faculty member assigns a failing grade on the basis of academic dishonesty, they shall notify the affected student(s), the appropriate unit administrator (Director or Division Chair), as well as the Associate Dean of Academic & Student Affairs of the violation and provide any and all supporting documentation to the Associate Dean of Academic & Student Affairs. Record of the infraction will be kept on file in the office of the Associate Dean of Academic & Student Affairs, although no further official action will be taken unless/until a second infraction is reported. In cases of repeated offenses, the Associate Dean of Academic & Student Affairs will administer a range of disciplinary sanctions up to and including expulsion from the College. Students retain their right to due process and may refer to the Student Handbook or the Associate Dean of Academic & Student Affairs regarding any disciplinary sanctions.

**Disclaimer Regarding Changes to Syllabus:**

This syllabus is subject to change as deemed necessary by the instructor to fulfill the changing needs of the class. Changes to the syllabus will be posted/located on my school website.