HELENA COLLEGE
UNIVERSITY OF MONTANA

M 151, Pre-Calculus
Fall 2022

Credits: 4
Course Start/End Date: 8/23/2022 to 5/25/2023
Course Location/Days/Times: 1:07 p.m. to 2:05 p.m. Monday through Thursday
Required [and/or Recommended] Textbook(s): Glencoe PreCalculus
Required Materials and Aids: Notebook, Textbook, Pencils, Binders, Calculator

INSTRUCTOR INFORMATION

Instructor Name and preferred title: Ms. McMahon
Phone Number: 406-225-3317 Ext. 148
E-mail Address: maryanne.mcmahon@jhs.k12.mt.us
Official Course-related Website: Teams
Office Hours/Availability to Students: 2:08 p.m. to 3:07 p.m.
Helena College contact: Lewis Jackson, Dual Enrollment Coordinator, lewis.jackson@helenacollege.edu

COURSE CONTENT

Course Description: This course is primarily for students who intend to take calculus. Topics include problem solving with two and three dimensional geometry, rational functions, exponential functions, logarithmic functions, trigonometric functions, law of sines, law of cosines, trigonometric identities and equations, vectors and polar coordinates, extend use of magnitude, circles, ellipse, hyperbolas, and sequences and series.

Course Learning Outcomes:
1. Calculate the area, surface area, and volume of standard and non-standard objects (all polygons, prisms and pyramids, and some truncated solids and rotated planar objects);
2. Define trigonometric functions using right triangles;
3. Define trigonometric functions using the unit circle. Utilize both degrees and radians;
4. Calculate and solve trigonometric equations utilizing trigonometric identities (inverse, sum and difference of two angles, double angle, half angle);
5. Solve trigonometric equations, exponential equations, logarithmic equations, rational equations, and equations blending two or more of these equation types;
6. Graph and describe trigonometric, exponential, logarithmic, rational, circular, elliptic, and hyperbolic equations utilizing domain, range, continuous, discontinuous, phase shift, amplitude, period, and asymptotes;
7. Prove trigonometric identities;
8. Solve problems in rectangular, circular, polar, and parametric form;

9. Define and use arithmetic and geometric sequences and series and understand the concept of limit.

Program/Gen Ed Core Outcomes addressed by this course:
Solve quantitative problems and interpret solutions.

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.

Aug. 23, 2022 to September 13, 2022 – Functions: Analyze Graphs, Continuity, End Behavior, Extrema, Parent Functions, Transformations, Operations, Compositions, Inverses and Relations
September 14, 2022 to September 29, 2022 – Power, Polynomial and Rational Functions
October 3, 2022 to October 19, 2022 – Exponential and Logarithmic Functions
October 24, 2022 to November 22, 2022 – Trigonometric Functions – Right Triangle Trigonometry, Radians, Degrees
November 28, 2022 to December 22, 2022- Trigonometric Identities and Equations
Jan. 3, 2023 to January 12, 2023 – Review and Mid Final Exam
January 16, 2023 to January 24, 2023 – Multivariable Linear Systems and Matrix Operations
January 25, 2023 to February 15, 2023 – Conic Sections – Ellipses, Circles, Hyperbolas, Parabolas, Rotations, Parametrics
February 20, 2023 to March 10, 2023 – Vectors
March 13, 2023 to March 30, 2023 – Polar Coordinates and Complex Numbers
April 3, 2023 to April 27, 2023 – Sequences and Series
May 1, 2023 to May 12, 2023 – Review and Final Exam

Critical Dates:
Exams:
September 13, 2022: Function Exam
September 29, 2022 : Power, Polynomial and Rational Function Exam
October 19, 2022: Exponential and Logarithmic Function Exam
November 21, 2022: Trigonometric Function Exam
December 22, 2022: Trigonometric Identities and Equations Exam
January 11, 2023: Mid Final Exam
January 23, 2023: Multivariable Linear Systems and Matrix Exam
February 15, 2023: Conic Section Exam
March 10, 2023: Vector Exam
March 30, 2023: Polar Coordinate and Complex Number Exam
April 27, 2023: Sequence and Series Exam
May 12, 2023: Final Course Exam

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

Grade Calculation Procedure:

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%) | |

I will round-up to whole number, so an 89.45 will round up to an 89.5, which rounds up to a 90 A-.)

Homework: 5 points daily – 4 points effort and 1point accuracy (one /two exercises of my choice). Late work will only
earn a maximum of 3.5 points. When given time to do homework in class, you are expected to do so!
Tests/Quizzes: Study and be prepared. All tests and quizzes must be made up within **four school days** after returning from an extended absence. You'll receive half-credit on any test or quiz that is not made up within this time limit. If you are absent the **day before** a test or quiz, you are required to make it up immediately upon return except in extenuating circumstances. If you are only absent **on** the day a test or quiz is given, you are required to take it on the day that you return.
Notebooks: Notes will be checked randomly for 10 quiz points each quarter. Take notes daily so that you have material to refer to when doing homework and preparing for quizzes/tests.
Quarter Grades: 45% tests 40% quizzes 15% homework
Semester Grades: 85% Qtrs. Avg. 15% semester exam

Instructor's Educational Philosophy:
Ask me questions, work together, attend class, engage in classroom activities, respect each other and work hard! I am here to help you do your personal best. We are a TEAM that is responsible, respectful and helps each other! Go Panthers!!!!

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:
 1) All rules outlined in the JHS handbook
2) No swearing or teasing
3) No food or drinks allowed in class.
4) All students are expected to be in class for the entire period. Passes will only be given in an emergency.
5) Come to class with required materials or be prepared for a possible 2-point reduction in your daily homework grade.
6) The consequences for cheating are as follows:
a) Receive a zero on the homework, test, or quiz. The person you are cheating from may also receive a zero.

b) Academic integrity is critical to character development and the educational process. Students found to have engaged in cheating or plagiarism shall be subject to district and school discipline policies.
7) **Absolutely no electronic device usage (phones, watches, ipods etc.) use in class unless directed by me to do so for class activities. Your cell phone has to be placed in the classroom "parking lot" when you arrive to class. I need your undivided attention during class. No texting, social media, etc. will be allowed to interfere with your safety, the safety of others and the learning environment. I will take your electronic device and turn it in to the office staff at my earliest convenience if you violate this rule!**

Extra Credit/Late Work Policy and Attendance Policy:

1) Parent(s) or guardian(s) will be called when absences or tardiness are affecting a student's progress.
2) Poor attendance or excessive tardiness may result in grade reduction.
3) Pre-approved (activity, family vacations, etc.) absences must obtain advance make-up. Homework, tests and quizzes will be made up in advance unless prior arrangements have been made between you and I.
4) You will have two days for a single excused absence to make up missed work. This includes the day you are absent. If you are absent for multiple consecutive days, after the first day's absence you will have one day per absence to make up missed work. Quizzes/tests will be made up outside of class by appointment.
5) Tardiness may result in missed quizzes/tests, which cannot be made up or allowed extended time.
6) Guidelines in the JHS handbook will be adhered to regarding tardies, excused absences and unexcused absences.

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 2022-2023 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 school 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 Violations: 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 assignment to a failing grade in the course in which the academic dishonesty occurs. When a faculty member assigns a failing grade based on academic

dishonesty, they shall notify the affected student(s) and the appropriate Division Director of the violation and provide all supporting documentation to the Division Director. Record of the infraction will be kept on file in the office of the Division Director, although no further official action will be taken unless/until a second infraction is reported. In cases of repeated offenses, the Executive Director of Compliance and Financial Aid will be notified and 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 Executive Director of Compliance and Financial Aid regarding any disciplinary sanctions.

Accessibility and Accommodations:
Do you have a visual impairment? Are you hard of hearing? Can you concentrate better if you stand or walk around in class? Do you have a short term medical or physical disability? Do you have ADHD or a learning disability? These are just a few examples of disabilities that are accommodated in higher education. In the event you encounter any barrier(s) to full participation in this course due to the impact of a disability, please contact the Disability Resources Office. The coordinator in the Disability Resources Office can meet with you to discuss the barriers you are experiencing and explain the eligibility process for establishing academic accommodations. If you have already been approved for accommodations through the Disability Resources Office, please schedule an appointment so we can implement your accommodations.
Disability Resources Office
(406) 447-6965
disabilityresources@helenacollege.edu
Office location: DON 139C

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 in the classroom and verbally stated by Ms. McMahon