Topics and Careers in Mathematics
Spring 2024
MATH 150 - 001 CRN 44078

Meeting: Thursdays, 2-2:50pm in Wubben Science 115

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Office hours: MWF 3-3:50pm TR 1-1:50pm **(no appointment necessary)**

Math 150 is a fun introduction to the wide world of mathematics, including our math concentrations and math-based careers out there. I'm excited to have you on our team of explorers!
-Dr. Miles

Prerequisite: C or better in Math 151 (Calculus I) or Math 135 or Math 131 (any of these courses may be taken concurrently with Math 150).

Required Material: there is no text for this course.

Course Description: Introduction to the nature of mathematical thinking. Advanced topics and applications of mathematics and statistics will be presented at an introductory level. Career options will be investigated.

In class:	Explorations, discussions, guests, major/alumni panels, presentations
Response Papers:	≈1.5 page, open responses to our class explorations
Activities:	Various small activities
Projects/Presentations:	Research a math-based career and a fun mathematics topic

Course Student Learning Outcomes:
Upon satisfactory completion of this course, the student will be able to:

- Investigate, discuss, and respond to advanced mathematical concepts and ideas, presented at an introductory level.
- Use critical thinking and problem-solving skills in discussions of and responses to new mathematical concepts.
- Demonstrate persistence and skill in exploration, conjecture, and generalization.
- Investigate careers that require a strong background in mathematics and statistics.
- Use LaTeX, a mathematics typesetting program, to typeset a simple assignment.

Activities: These include a variety of short assignments such as:

- Writing a "mathematical thought" paper (short essay) on a specified topic
- Working through LaTeX code
- Submitting questions for panelists or topics for projects

*No late Activity submissions will be accepted since most of these will be time-sensitive.

Response Papers: Many of our class meetings will be spent learning and discussing a new mathematical concept. In response to each of these topics, you will be assigned a short assignment that might include:

- Writing a short essay based on the activity or presentation completed in class
- Answering related questions based on hands-on activities completed in class
- Completing an investigation into a new, related topic (perhaps picking a new mathematical term and figuring out its definition or watching a math video and discussing it in class)

Submissions *will be accepted* up to one week after the submission deadline (with 20% reduction). Extensions beyond one week will be considered only in the case of a long-term excused absence such as due to illness. Such a situation requires documentation and must be approved (in advance, if possible). Only the **four** highest scoring responses will be graded.

Projects: During the semester, you will complete two "research" projects. The first will be a short project in which you research a career for which a mathematics major would be well suited. The second project will involve mathematics content. Each of the projects will include a a presentation component. The second project will serve as your final exam in the course and will be presented during finals week (exact date/time determined later).
Projects will NOT be accepted late except in cases of documented emergencies. Such a situation must be approved by me (in advance, if possible).

> **AI Statement:** You may use ChatGPT (or other generative AI) as a **search engine**, giving you ideas of what to search for on other websites. You may **not** copy content from ChatGPT or have it rewrite portions of your work.

Mathematics rightly viewed possesses not only truth but supreme beauty.
-Bertrand Russell

Participation: Each student in this class has chosen to be part of this community of learners, and continuing in this class carries an obligation to contribute to and respect our community (both in-person and online). This looks like coming to class a few minutes early, asking questions, engaging in discussions and activities, and interacting with other students. Distracting or negative behavior (e.g. using your cell phone during class, consistently coming late, unprofessional communication) disrupts our learning environment and may hurt your grade. (Students who persist in inappropriate behavior may be administratively dropped from the class.)

There is a 10-point participation grade for each class period: 5 points are given for being present, and up to 5 points are given for positive and interactive participation that day.

Attendance: I value your attendance and contribution very much. Since the vast majority of the learning and work for this class occurs during class time, your presence is incredibly important for the atmosphere of collaborative learning we look to create - *so come to class every week!* Absences can also affect your course score: in general, missing more than one **unexcused** class will result in a 10% course grade deduction for each additional class missed. For example, if your calculated course grade is 95%, but you have two unexcused absences, then your final course grade would be 95% - 0.1(95%) = 85.5%. That said, please do not come to class if you are ill. Accommodations will be made for students absent for COVID-related reasons – in this situation, please email me as soon as possible.

Grade Computation:

Activities	10%
Response Papers	30%
Projects	30%
Participation	30%

The following percentages of the maximum semester score determine your grade:
90% earns an A, 80% earns a B, 70% earns a C, and 60% earns a D.

Doing mathematics should always mean finding patterns and crafting beautiful and meaningful explanations.
-Paul Lockhart

Course Communication
All course communication from me will be made via D2L Announcements. Individual communication and reminders may be sent to your CMU email. *Be sure to check the D2L Announcements and your CMU email regularly*. Note that you can (and should!) set D2L to send you an email notification when Announcements (or other course updates) have been made. For instructions on setting up notifications, see How to Set up D2L Notifications.

Email is the best way to communicate with me. If you send me (or your other instructors!) an email, please include the title of the course in the subject line (e.g. [Math 150]). I typically respond within 24 hours M-F. See the "Appropriate Email Etiquette" D2L Announcement for details on proper email etiquette.

Credit Hours Policy: An undergraduate student should expect to spend on this course a *minimum of two hours outside of the classroom for every hour in the classroom*. The outside hours may vary depending on the number of credit hours or type of course. More details are available from the faculty member or the department office and in CMU's Curriculum Policies and Procedures Manual.

Academic Honesty: Cheating is serious offense and will be treated as such. Cheating is any act of academic dishonesty, which includes using another person's work as though it was your own or knowingly permitting another student to use your work. Note that this includes failing to include appropriate in-text citations in papers and assignments. The basic rule of thumb is that…

every time you write down ***anything*** that did not come out of your own head/knowledge, ***you must cite it!***

Duplicated or plagiarized assignments will receive grades of zero. A second offense will result in a failing grade for the course for all those involved. Again, from the university's code of integrity: *By submitting work which is not your own, you may forfeit the opportunity to continue as a student.*

Please read the student code of conduct in your student handbook or online: http://www.coloradomesa.edu/student-services/maverick-guide.html

EAS: In coordination with Educational Access Services, reasonable accommodations will be provided for qualified students with disabilities. Students should contact Educational Access Services at 970-248-1856 or Houston Hall, Suite 108 as soon as possible.

Tentative Schedule, Spring 2024

Class Date	Plan
25-Jan	Introductions
1-Feb	Exploration 1
8-Feb	Exploration 2
15-Feb	Exploration 3
22-Feb	Exploration 4
29-Feb	Exploration 5
7-Mar	Careers in Math
14-Mar	Project 1 Presentations
21-Mar	Spring Break
28-Mar	Future Planning
4-Apr	Exploration 6
11-Apr	Exploration 7
18-Apr	Introduction to LaTeX
25-Apr	Exploration 8
2-May	Math Major Panel
9-May	Math Alumni Panel
Finals Week	Project 2 Presentations

The above schedule may be changed at the discretion of the instructor.

Math 150 Questionnaire Assignment – Fill out and turn in our 2nd class

A. Syllabus Confirmation

I have read and understood the syllabus for this course.

_____ _____

Signature Date

B. Background Information

Name (Print Clearly)	
How Your Name is Pronounced	
Year in College	

Fill in the following table with all previous and current math/stat/related college-level courses.

	Course Name	**When (Semester/Year)**
1		
2		
3		
4		
5		
6		

What is your intended major? _____

Why are you taking this course? _____

What is your hometown? _____

What's something interesting about you?

Other (Please comment below on any other information that you would like me to be aware of.)