

MATH 008: Foundations of Quantitative Reasoning

Welcome to Math 8! This is a mathematics course designed to help you develop quantitative literacy skills that will be meaningful for your professional, civic, and personal lives. The course, designed for students in the Social Sciences and Humanities, provides a solid foundation in quantitative and symbolic reasoning, as well as problem solving techniques needed to be a productive, contributing citizen in the 21st century. Topics include statistics, probability, and modeling with mathematical functions. Course content is situated within real-world problems that you will encounter in your daily life, including personal finance, voting, and the media. This 4-unit course satisfies the Quantitative Reasoning GE requirement and prepares students for statistics and research methods courses required in Social Sciences and Humanities majors.

COURSE LEARNING OUTCOMES

One of the main purposes of this course is for you to improve your reasoning and problem-solving skills. The focus will be on discovering and exploring ideas rather than following procedures.

- **Mathematical Reasoning:** You will read a complex problem requiring quantitative and/or symbolic analysis, use flexibility in selecting a solution strategy, and impose an appropriate mathematical structure or mathematical procedure in solving the problem.
- **Mathematical Habits of Thought:** You will determine the reasonableness and implications of mathematical solutions and will recognize the limitations of the methods used in context.
- **Mathematical Decision-Making:** You will apply mathematical processes and solutions in making personal and societal choices.
- **Mathematical Communication:** You will use appropriate representations to effectively communicate, orally and in writing, quantitative results and mathematical processes.
- **Mathematical Symbols, Techniques & Computation:** You will demonstrate proficiency in the skills supporting mathematical understanding.

BASIC INFORMATION

Class Times and Locations: TTh 11:30-1:20pm in Granite Pass 110

Instructor: Milly Farid - mfarid@ucmerced.edu

Office hours: Tu 9:30 – 11:30am, ACS 329

Learning Assistant: Kalyani Binu Sindhu - kbinusindhu@ucmerced.edu

Office hours: Th 1:45 – 2:45pm, ACS 303

GRADING

- 20% homework assignments
- 20% group projects
- 20% participation of in-class activities
- 20% two midterm assessments
- 20% final presentations

IMPORTANT DATES

The following assessments will take place during regular class hours (11:30am – 2:30pm) in Granite Pass 100.

Midterm 1: Oct 3 (Thursday)

Midterm 2: Nov 14 (Thursday)

Final Presentations: Dec 18 (Thursday)

COURSE MATERIALS

Online Homework Manager (OHM) from Lumen Learning.

In this course you will use OHM Math 8 for your homework assignments and quizzes. You can access and submit your homework, quizzes, and other activities through CatCourses. It is strongly recommended that you purchase these course materials through UC Merced's materials program. The cost is \$35/student for the semester. If you opt out of the materials program, you will be removed from the course materials and assessments. To regain access, you will be required to purchase a Lumen Learning Activation Code through our bookstore. The additional steps in this process may delay your progress on assignments.

COURSE INFORMATION AND TIPS

Homework Assignments: Homework assignments with due dates can be found on our CatCourses site, under the 'Assignments' tab. There will be two assignments each week, due at the start of class on Tuesdays and Thursdays. I acknowledge that sometimes life intervenes despite our best intentions. For this reason, you will have two "late tokens" to use for your homework assignments. These are extensions of 3 days (82 hours) each. You may use them whenever you wish throughout the course.

I encourage you to approach your homework problems as you would a test—study relevant texts, notes, video, etc. before attempting to solve problems. The point of assigning homework is for you to practice applying the concepts learned towards new problems and to gauge your understanding. Please do not rely too much on external tools for the problem sets. You should do your own work to understand the material, and it is easy to get a false sense of security by relying too heavily on outside resources. If you are truly stuck, I encourage you to attend one of the office hours listed above.

Learning Assistants: In addition to the instructor, we will also have a Learning Assistant (LA) as part of the instructional team in our class. LAs are undergraduate students who have recently completed some math courses successfully and can relate to some of the challenges you will face in this course. LAs help facilitate active learning and collaboration activities in the classroom, but they have nothing to do with grading. Their only focus is to help you learn and learn more effectively.

Attendance: Attendance is mandatory. This course is based on discussion and in-class group work. I want you to keep up and succeed. For this to happen, you should attend every class, participate in class discussions, and actively contribute to your group. I know that things come up sometimes, so please email me at least 24 hours in advance if unexpected circumstances arise and you must miss class.

Keep a notebook. Bring it to lectures, discussion sections, and office hours. Write only on the front side of each page. Working only on the right-hand page will leave the left-hand page blank and available for notes and corrections.

Attend office hours. You have a unique opportunity to speak to your professor and your LA to clarify ideas, ask questions, or even just tell us how things are confusing. Attending office hours is free, you don't have to stay for the full hour, and you don't have to have an agenda. You are welcome to stop by just to chat!

Create study groups. Meet the people sitting next to you in class, exchange phone numbers, and schedule a time to work together outside of class. This will be invaluable for you as the semester progresses, and will make learning more enjoyable and effective.

ADDITIONAL INFORMATION

Special Accommodations. The University of California, Merced is committed to creating learning environments that are accessible to all. If you anticipate or experience physical or academic barriers based on a disability, please feel welcome to contact me privately so we can discuss options. In addition, please contact Student Accessibility Services (SAS) at (209) 228-6996 or disabilityservices@ucmerced.edu as soon as possible to explore reasonable accommodations. All accommodations must have prior approval from Student Accessibility Services on the basis of appropriate documentation.

If you anticipate or experience barriers due to pregnancy, temporary medical condition, or injury, please feel welcome to contact me so we can discuss options. You are encouraged to contact the Dean of Students for support and resources at (209) 228-3633 or online.

We will make every effort to accommodate all students who, because of religious obligations, have conflicts with scheduled exams, assignments, or required attendance. Please speak with the instructor during the first week of classes regarding any potential academic adjustments or accommodations that may arise due to religious beliefs during this term.

Use of AI Tools. This course acknowledges the growing presence of AI tools in academic settings. You may use AI tools to support your learning in this course, such as:

- Tutoring tools to review your learning, clarify confusions, or summarize your notes. Remember that these tools may not always provide accurate information, so cross-check with course materials.
- Testing agents to generate practice questions and check your knowledge. Use these to supplement, not replace, the study materials provided in the course.

Do not use generative AI to complete your homework assignments. Remember, while AI tools can be helpful, they are not a substitute for your own critical thinking and learning. Use them responsibly to enhance, not replace, your own work and understanding. If you have any doubts regarding the correct use of these tools, please contact your instructor for clarification.

Academic Integrity. Academic integrity is the foundation of an academic community and without it none of the educational or research goals of the university can be achieved. All members of the university community are responsible for its academic integrity. Existing policies forbid cheating on examinations, plagiarism and other forms of academic dishonesty, including the use of 'homework help' websites, since submitting others' work as your own is a violation of the UC Merced Academic Honesty Policy. Moreover, all course materials, including 3rd party materials like the homework system, are subject to copyright. Distributing or posting any course content without written permission is expressly prohibited and illegal. UC Merced students are held to high standards of personal and professional conduct in compliance with the UC Merced Academic Honesty Policy and the UCM Code of Student Conduct, which can be found at the Office of Student Rights and Responsibilities Policies website at <https://osrr.ucmerced.edu/policies>. Violations of these policy will result in a score of 0 on relevant assessment items.

Withdrawal Policy: You may drop this course without paying a fee and without further approval before Wednesday, Sept. 14. Between the fourth week of instruction and until the end of the tenth week of instruction, a student may withdraw from a course for emergency reasons or for good cause with the signed approval of the instructor and confirmation by the dean of the school with which the student is affiliated, provided: (1) the student is not on special probation, (2) dropping the course would be to the educational benefit of the student, and (3) the student is not being investigated for academic dishonesty in that course. The student must submit a petition including a written description of the special circumstances warranting this action and must attend class until the petition is approved. Please see the UC Merced General Catalog for more details.