



Calculus I (honors)

MTH 229H-101 || CRN: 2795 || Fall 2023

- Instructor:** Dr. Tom Cuchta
Time: 11:00-11:50 MTWRF
Location: WAEC 3119
E-mail: cuchta@marshall.edu
Office: Smith Hall 721
Walk-in office hours: See my website <http://tomcuchta.com>. They may change throughout the semester without notice. Alternate office hours may always be scheduled via e-mail.
Class webpage: <https://tomcuchta.com/teach/classes/2023/MTH229H-Fall2023-Marshall/>
Textbook: none required (Calculus by James Stewart 8th edition is a decent reference)
Course Description: An introduction to calculus and analytic geometry for honors students, emphasizing critical thinking. Limits, derivatives, and integrals of the elementary functions of one variable, including transcendental functions.
FREE math tutoring: Virtual and drop-in tutoring (SH625) are offered by the math department: <https://www.marshall.edu/math/tutoring/>
Calculator policy: Calculators will not be permitted on exams.
Attendance policy: Every class meeting should be attended by the student in its entirety, but attendance itself will not be recorded for a grade. If a class is missed, it is the *student's responsibility* to find out what was missed.
Online Homework: Homework will be administered through Marshall University's Webwork server. Our course is located at the following URL: <https://webwork.marshall.edu/webwork2/F23-MTH-229H-Cuchta/>
Presentations: Presentations by students will occur often and will be "low pressure" in that there will be opportunity for improvement on any presentation. Each presentation should be 5-10 minutes long and the "work" for that presentation (the solution, the derivation, etc being talked about) must be submitted to the instructor. Each presentation will be scored by the instructor using a presentation rubric (supplied in Blackboard). Followup work (including presenting again) may be assigned to improve the presentation score on a given presentation. Students will give no more than four presentations in the semester.
Quizzes: Quizzes will be given randomly and will be unannounced in advance. 20% of the lowest-scored quizzes will be dropped.
Exams: There will be three one-hour exams in this course.
Final exam: There will be a cumulative final exam in this course at the time defined by the registrar's office.
Make-up exam policy: If an exam is to be missed due to an excused absence (defined as in this page), then it is the *student's responsibility* to arrange an alternative time to take the exam at least one week before the exam is given. If the student misses an exam due to an unexcused absence, the exam may be replaced with the percentage earned on the final exam. The unexcused absence policy applies *only once*.
University policies: Various university policies such as Academic Dishonesty, Academic Dismissal, Academic Forgiveness, Academic Probation & Suspension, Affirmative Action, Pre-Finals Week, D/F Repeat Rule, Excused Absence, Inclement Weather, Sexual Harassment, Students with Disabilities, and University Computing Services Acceptable Use can be found at the Marshall University academic affairs webpage here: <https://www.marshall.edu/academic-affairs/policies/>

		Grade	Percentage Range
Grading policy:	WeBWork Homework	20%	A $90\% \leq \text{Points Earned} \leq 100\%$
	Quizzes	15%	
	Presentations	15%	B $80 \leq \text{Points Earned} < 90$
	Hour exams	30%	C $70 \leq \text{Points Earned} < 80$
	Final exam	20%	D $60 \leq \text{Points Earned} < 70$
			F $0 \leq \text{Points Earned} < 60$

MTH 229H-101 **ESTIMATED** Calendar Fall 2023

Week	Topics	Exams
21 Aug – 25 Aug	Functions and limits	
28 Aug – 1 Sep		
4 Sep – 8 Sep		
11 Sep – 15 Sep	Differentiation and its applications	<i>EXAM 1 – 15 September</i>
18 Sep – 22 Sep		
25 Sep – 29 Sep		
2 Oct – 6 Oct		
9 Oct – 13 Oct		
16 Oct – 20 Oct		<i>EXAM 2 – 20 October</i>
23 Oct – 27 Oct		
30 Oct – 3 Nov	Antidifferentiation and its applications	
6 Nov – 10 Nov		
13 Nov – 17 Nov		<i>EXAM 3– 17 November</i>
20 Nov – 24 Nov		<i>THANKSGIVING BREAK</i>
27 Nov – 1 Dec		
4 Dec – 8 Dec		<i>FINALS WEEK</i>

Learning Outcomes

Outcome	Practice	Evaluate
1. Students will have an understanding of the fundamental concepts of calculus and an appreciation of its many applications.	Quizzes, home-work, presentations	Exam question
2. Develop critical thinking skills by asking students to convert real-world problems into forms suitable for calculus and interpret the results of calculus in real-world problems.	Quizzes, home-work, presentations	Exam question
3. A deeper understanding of the mathematics that is used in their science and engineering courses.	Quizzes, home-work, presentations	Exam question
4. Students will develop facility in using graphing calculators to solve mathematics problems.	Quizzes, home-work, presentations	Exam question
5. <i>Reasoning</i> : Calculus is a collection of reasoning techniques that allows one to understand how changing quantities behave. This understanding is fundamental to progress in science and engineering. Students will use mathematical reasoning in their study of calculus concepts to verify properties of the concepts they study, and they will use scientific reasoning to determine whether possible solutions are reasonable for a given situation.	Quizzes, home-work, presentations	Exam question
6. <i>Representations</i> : Students will work with information specified in verbal, graphical, tabular, and symbolic forms. Many problems will require students to take information in one of these forms, analyze it, and create a solution in a different form. Students will be required to produce verbal explanations of the meanings of mathematical concepts, both in general and in the context of specific problems.	Quizzes, home-work, presentations	Exam question
7. <i>Information literacy</i> : To solve the applied problems in this course, students must determine which information in the problem is relevant to the solution, access this information and use it to obtain a mathematical solution, and then translate the mathematical solution back into the language of the original problem.	Quizzes, home-work, presentations	Exam question