Real Variables I
MTH 650-101,102 || CRNs: 2875, 2876 || Fall 2025

Instructor:	Dr. Tom Cuchta (`cuchta@marshall.edu`)
Time:	3:30–4:45 TR
Credits:	3 graduate credit hours
Location:	Smith Hall 509 (+virtual for online students only)
E-mail:	cuchta@marshall.edu
Office:	Smith Hall 614 (walk into room, turn left – my office is inside!)
Office phone:	304-696-3050
Open 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. I can be contacted for office hours in person, by email, phone, or thru Teams.
Class webpage:	All course information will be posted to the class webpage: https://tomcuchta.com/teach/classes/2025/MTH650-Fall2025-Marshall/
Textbook:	"*Measure, Integration & Real Analysis*" (16 August 2025) by Sheldon Axler. Book available **for free** on author's webpage: https://measure.axler.net/
Recommended text:	"*Supplement for Measure, Integration & Real Analysis*" by Sheldon Axler. Available **for free** on author's webpage: https://measure.axler.net/
Course Description:	A study of measure and integration and related topics.
Prerequisites:	MTH528
Weekly homework:	Weekly homework will be assigned. Each homework is worth 25 points. Only part of the homework will be graded and solution for those problems will be provided.
Attendance policy:	Notes from class are accessible by students at all times. Merely missing class will not count against your grade.
Presented problems:	Each student will present one assigned problem to the class every three weeks. Each presentation is to be done within that three week period. Problems will be assigned by instructor. After correct presentation, the solution will be nicely written up and shared to all students for inclusion on a future exam. Each of these is worth 40 points (20 for presentation and 20 for writeup).
Exams:	There will be three regular exams in the course. Each is worth 100 points.
Online exams:	Online students will do their exam with camera on. The solved exam will be emailed to the instructor within 10 minutes of the scheduled end of class, unless otherwise given extra time.
Final exam:	There will be a cumulative final exam in this course worth 200 points.
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/`

Grading policy:

			Grade	Percentage Range
Weekly homework (WH)	25%		A	$90\% \leq$ **Percent Earned (PE)** $\leq 100\%$
Presented problems (P)	15%		B	$80 \leq$ **PE** < 90
Hour exams (HE)	35%		C	$70 \leq$ **PE** < 80
Final exam (FE)	25%		D	$60 \leq$ **PE** < 70
			F	$0 \leq$ **PE** < 60

$$\textbf{PE}=0.25(\text{WH}) + 0.15(\text{P}) + 0.35(\text{HE}) + 0.25(\text{FE})$$

Health and Safety Information

All members of the Marshall University community are expected to always observe health and safety protocols. This includes general health and safety protocols as well as specific protocols that might emerge in response to community and campus health conditions.

Campus Carry Policy

University Policy, UPGA-12 (Campus Carry Policy) derives its authority from West Virginia State law, including the Campus Self-defense Act (W. Va. Code § 18B-4-5b). It pertains to the exercise of Concealed Carry on Marshall University's campus, except in designated areas, by individuals with a valid permit to Conceal Carry.

Individuals who choose to Conceal Carry are responsible for knowing and understanding all applicable federal, state, and local laws and Marshall University Board of Governors Rules, University Policies, and Administrative Procedures. University Policy, UPGA-12 applies to areas of campus and buildings that are directly under the possession or control of Marshall University.

Concealed Handguns are not observable to others and must be holstered and concealed on the body of the permit holder or in a personal carrier, such as a backpack, purse, or other bag that remains under the exclusive and uninterrupted control of the permit holder. This includes wearing the personal carrier with a strap, carrying or holding the personal carrier, or setting the personal carrier next to or within your immediate reach at all times. If your participation in class activities impedes your ability to maintain constant control of your Handgun, please make alternate arrangements prior to coming to class.

Generative Artificial Intelligence (AI) Policy

Prohibited Use – Generative AI is fully prohibited in this course.

University policies

By enrolling in this course, you agree to the University Policies. Please read the full text of each policy (listed below) by going to MU Academic Affairs: University Policies. (URL: https://www.marshall.edu/academic-affairs/policies/)

- Academic Dishonesty Policy

- Academic Dismissal Policy

- Academic Forgiveness Policy

- Academic Probation and Suspension Policy

- Affirmative Action Policy

- Pre-Finals Week Policy

- D/F Repeat Rule

- Excused Absence Policy for Undergraduates

- Inclement Weather Policy

- Sexual Harassment Policy- Title IX prohibits the harassment of students based on sex, which includes pregnancy, childbirth, and related conditions. This includes that students will not be penalized for taking medically necessary leave related to pregnancy, childbirth, or related conditions. Marshall's Title IX Office may be contacted at `TitleIX@marshall.edu`

- Students with Disabilities (Policies and Procedures)

- University Computing Services Acceptable Use Policy

MTH 650-101,102 Fall 2025

Week #	Dates	Sections
1	18 Aug – 22 Aug	1A, 1B
2	25 Aug – 29 Aug	2A
3	1 Sep – 5 Sep	2B
4	8 Sep – 12 Sep	2C
5	15 Sep – 19 Sep	2D, 2E 18 Sep: ***EXAM 1***
6	22 Sep – 26 Sep	3A
7	29 Sep – 3 Oct	3B, 4A
8	6 Oct – 10 Oct	4B 9 Oct: ***NO CLASS – OCTOBER BREAK***
9	13 Oct – 17 Oct	5A
10	20 Oct – 24 Oct	5B, 5C 23 Oct: ***EXAM 2***
11	27 Oct – 31 Oct 👻	6A
12	3 Nov – 7 Nov	6B
13	10 Nov – 14 Nov	6C
14	17 Nov – 21 Nov	6D 20 Nov: ***EXAM 3***
–	24 Nov – 28 Nov	***THANKSGIVING BREAK***
15	1 Dec – 5 Dec	6E 5 Dec: ***LAST REGULAR CLASS DAY***
16	8 Dec – 12 Dec	***FINAL EXAMS***

Course Student Learning Outcomes

Course learning outcome	How practiced	How assessed
Students will solve computational problems.	Homework	Exams Presentations
Students will write logically coherent and correct proofs of theorems.	Homework Presentations	Exams Presentations
Students will present their work concisely and clearly.	Lecture discussion Previous presentations	Presentation rubric
Students will mathematically define key concepts.	Lecture discussion Homework Presentations	Exam