

Course Information**Instructor:** Dr. Justin T. Webster (Justin)**Lecture:** M,W - 2:30–3:45 pm, Sond. 111 (Section 1)**Discussion:** F - 1:00–1:50 pm, M&P 008**TA:** Christine Le **Email:** cle6@umbc.edu**Course Website:** Blackboard (not instructor homepage).**Office Hours (OH):** T 10:30–11:30am, W 12:30–1:30pm; and by appt.***Required Texts:** 1) Scheinerman, *Mathematics...*, 3rd Ed.; 2) [free e-book] Fendel&Resek, *Foundations...**Prerequisite:* MATH 221 with a grade of “C” or better.Contact Information**Phone:** 410/455-2183**Email:** websterj@umbc.edu**Office:** M&P 430**TA Office Hours:** M 1:00–2:00pm,

Location: TBD

The following are the course policies. They may be changed at any time and will be announced *in class and by e-mail*.

Contacting Me: The best way to contact me is via email. I will respond within 36 hours. **Please schedule all appointments outside of OH through e-mail, with at least 24 hours’ notice.* Students are responsible for all announcements made in class, on Blackboard, and any e-mail sent to their primary UMBC email account. Check Blackboard often.

Reading and Course Texts: The course content will regularly necessitate out-of-class reading—examples, definitions, theorems, proofs, and proof-writing advice. The free Fendel–Resek text will be used heavily for examples, reading, and coaching in mathematical writing. Scheinerman will be the primary source of assigned homework problems. Any explicitly assigned reading or posted video will be considered part of the homework workload for that week.

Assignments: Homework will be assigned weekly, with due dates normally on Wednesday. Problem sets will be drawn primarily from Scheinerman, with occasional additional problems posted on Blackboard. Due dates may occasionally be altered; any adjustment will be announced clearly on Blackboard. Each homework will be worth the same point value, and a random selection of problems may be graded. You are strongly encouraged to discuss mathematics and work through difficult ideas with classmates. However, **each student must prepare and submit an independent solution set that reflects the student’s own understanding, language, and notation.** All submitted homework solutions **must be typeset in L^AT_EX**.¹ *The single lowest homework score will be dropped.*

Metacognitive Reflections: At several junctures in the semester, a meta-cognitive reflection will be assigned and graded according to a pre-assigned rubric. These reflections are required, and will constitute writing about 10 sentences and turning them in with the homework. The metacognition question will be the same each time it is assigned. More details will be explained in class about the nature of the reflection. Students will be graded on each reflection as: “+” or “✓” or “–”, corresponding to “thoughtful and thorough”, “adequate”, or “inadequate” (resp.). A “–” does not receive the point; a “✓” or a “+” receives points. These points will be included in the homework grade. *If a student obtains a “+” on every metacognition, in addition to receiving the points, they will earn one additional homework drop.*

Activities and Quizzes: A graded activity or quiz will normally occur each Friday during the Discussion (Quiz/Activity Session), which will ordinarily be led by the TA. The item may be longer (up to 50 minutes) or shorter, depending on the material, but each session will be worth the same number of points. Sometimes work will be collected at the end of the Friday session; at other times, students will take the work from Friday, edit or complete it over the weekend, typeset the solutions in L^AT_EX, and submit them on Monday. *No make-ups will be granted, but each student will be permitted two Friday drops. These drops are intended to cover all reasons for absence or non-submission, not merely low scores.*

Exams: There will be two 75-minute midterm examinations and one 120-minute comprehensive final examination. The final will be common and co-written across the coordinated sections. Once the final examination time is announced, it will be fixed, and only in the most extreme cases will arrangements be made to reschedule.

Final Exam Date and Time - Friday, December 11, 1:00–3:00pm; **Final Exam Room** - M&P 401

¹LaTeX is typesetting software used throughout the mathematical and broader STEM communities to present technical work cleanly and precisely. Download: <https://www.latex-project.org/get/>; hosted environment: <https://www.overleaf.com/>.

Grading: Grades will be assigned based on raw percentages in the standard 100 percent scale (with no “+” or “-”). *During the semester, grades will not be rounded, and there will be no curve for graded material.* However, I reserve the right to adjust final grades based on factors such as attendance, participation, and demonstrated effort towards understanding the material (always “upward”, if at all). The final grade breakdown will be as follows:

Homework – 15% Midterm Exam – 15 % x 2 Activities and Quizzes – 20% Final Exam – 35%

Course Description and Outcomes: Students are expected to display a thorough understanding of the topics covered. In particular, upon completion of the course students should be able to:

SLO1) Construct basic proofs of if-then statements about integers and sets.

SLO2) Evaluate truth or falsity of statements; defend decision by providing justifications or counterexamples.

SLO3) Manipulate and negate simple and compound mathematical statements using logic and truth tables.

SLO4) Quantify (and negate) precise mathematical statements with proficiency.

SLO5) Utilize common proof techniques such as induction, proof by contraposition, and proof by contradiction; recognize the need for these strategies in given problems.

SLO6) Apply skills of mathematical reasoning to topics including: functions, cardinality, counting, and other topics in the text.

SLO7) Evaluate the validity of a given mathematical argument.

SLO8) Demonstrate correct and precise use of mathematical language.

These outcomes will be assessed on exams, homework, quizzes/activities, and the final exam.

Etiquette, Please: Make sure your cell phone is silent, and don’t be egregious about using it. *Laptops can only be used in class* when TeXing content. If in attendance, please arrive on time and commit to sitting through the entire lecture. Lastly, please comment and ask questions during the lecture by raising your hand.

Attendance: Attendance will not factor into the overall grade, but there are obvious ramifications for missing more than a couple class sessions, especially Friday quiz/activity sessions.

Important Dates: Please be aware of the following dates:

Schedule adjustment deadline – Sep. 4

Labor Day – Sep. 7

Fall Recess – Oct. 12–13

Withdraw deadline – Nov. 2

Thanksgiving/Class Recess – Nov. 25–27

Last day of classes – Dec. 9

Study Day – Dec. 10

Finals – Dec. 11–17

Academic Integrity, Collaboration, and AI: Have some integrity! Be a good person, please. Be a person who does not cheat. Mathematical collaboration is encouraged in this course: students should discuss definitions, examples, proof strategies, and difficult points with one another. Study groups are great! At the same time, the struggle required to formulate, test, and write a proof is a central part of the course. Every graded submission must therefore represent the student’s own understanding and independently prepared work.

Generative AI and LLM tools (including ChatGPT, Claude, Gemini, etc.) may not be used in this course for graded work. This includes drafting proofs and proof checking. This restriction is particular to the goals of MATH 300, as evaluating arguments and constructing precise proofs are exactly the skills being assessed. Replacing that work with AI-generated or AI-checked material will diminish effective reasoning on quizzes and exams.

Integrity interviews: If the instructor or TA has reason to question the authorship or understanding represented by a submitted item, no grade will be assigned until an academic integrity interview has occurred. This will be conducted by the instructor with at least one other person (TA, instructor, other faculty). The student will be required to clearly explain submitted answers, strategy, notation, and proof choices, and will be asked to construct related proofs in real time. The grade on the entire assessment is contingent upon the student’s satisfactory demonstration of understanding and authorship. An unsuccessful interview will result in a score of zero and Academic Conduct Reporting.

The presence of a phone or tablet outside a pocket or bag, or the wearing of a smart device (watches or glasses), is sufficient grounds for a zero on the assessment; no evidence of use is required.

Course Evaluations and Feedback: I take course evaluations seriously, and as such, I would ask that you complete them. Please provide objective and honest feedback in as much detail as you can. Additionally, polite feedback about the course (during the semester) is encouraged.

Other Stuff:

UMBC Academic Integrity Policy: Academic integrity is an important value at UMBC. By enrolling in this course, each student assumes the responsibilities of an active participant in UMBC's scholarly community, in which everyone's academic work and behavior are held to the highest standards of honesty. Cheating, fabrication, plagiarism, and helping others to commit these acts are forms of academic dishonesty, and they are wrong. Academic misconduct may result in disciplinary action, including suspension or dismissal. The UMBC Statement of Values for Academic Integrity and the Undergraduate Student Academic Conduct Policy are available at <https://academicconduct.umbc.edu/>.

Athletes, Veterans, and Other Considerations: If you are an NCAA or club-sports athlete, a veteran, or have another circumstance that may affect your participation in the course, please inform me as early as possible. Information for veterans and military-affiliated students is available at <https://veterans.umbc.edu/>. Scheduling arrangements and other course-specific needs will be considered individually and in accordance with University policy.

Accessibility and Disability Accommodations, Guidance and Resources: UMBC is committed to providing equal access for students with disabilities under the Americans with Disabilities Act (ADA and ADAAA) and Section 504 of the Rehabilitation Act. Student accommodation requests are coordinated through Office of Disability Access & Resources (DAR), within UMBC's Office of Accessibility and Disability Services. Registration information, procedures, and the Accommodate student portal are available at <https://sds.umbc.edu/>; broader accessibility resources are available at <https://accessibility.umbc.edu/>. SDS can be reached at disAbility@umbc.edu or 410-455-2459.

If you will use approved accommodations in this course, please ensure that you have submitted a Semester Request and that SDS has emailed your Letter of Accommodations to me. Then contact me promptly so that we can discuss the implementation of those accommodations. Accommodations are not retroactive, so early communication is strongly encouraged.

Sexual Assault, Sexual Harassment, and Gender-Based Violence and Discrimination: UMBC policy, in addition to federal and state law (including Title IX), prohibits discrimination and harassment on the basis of sex, sexual orientation, and gender identity in University programs and activities. A student impacted by sexual harassment, sexual assault, domestic violence, dating violence, stalking, sexual exploitation, gender discrimination, pregnancy discrimination, gender-based harassment, or related retaliation may contact the University's Title IX Coordinator to make a report and/or access support and resources. The Title IX Coordinator can be reached at ecr@umbc.edu or 410-455-1717. Information and reporting resources are available through the Office of Equity and Civil Rights at <https://ecr.umbc.edu/>.

Support and resources are available even when a student does not wish to file a formal complaint or police report. Please be aware that the University may take action on its own when necessary to protect the safety of the community. Reports may be submitted through the online reporting/referral form linked from the ECR website; anonymous reporting may limit the University's ability to respond.

Notice that Faculty and Teaching Assistants are Mandated Reporters with Mandatory Reporting Obligations: All faculty members and teaching assistants are Mandated Reporters under UMBC's Interim Policy on Sex Discrimination, Sex-Based Harassment, and Sexual Misconduct. Faculty and teaching assistants are therefore required to report known information concerning conduct that may violate the policy to the Title IX Coordinator, including disclosures about experiences that occurred before a student attended UMBC or that involve people not affiliated with UMBC. Reports are required regardless of the amount of detail provided and even when support has already been offered or received.

While faculty members want to encourage students to share information related to their life experiences through discussion and written work, students should understand that faculty and teaching assistants must report past and present sexual harassment, sexual assault, domestic and dating violence, stalking, and gender discrimination shared with them. The purpose of that report is to allow the University to inform students of their rights, resources, and support. A student is not obligated to respond to outreach resulting from a report.

If you need to speak with someone confidentially, UMBC maintains confidential resources, including Retriever Integrated Health (410-455-2472; after-hours support: 988), pastoral counseling through The Gathering Space for Spiritual Well-Being (410-455-6795; i3b@umbc.edu), and the Women's, Gender, and Equity Center (410-455-2714; womenscenter@umbc.edu). Current hours and additional on- and off-campus resources are available at <https://ecr.umbc.edu/>.

Please note that Maryland law and UMBC policy require faculty to report disclosures or suspicions of child abuse or neglect to the Department of Social Services and/or the police, even if the person who experienced the abuse or neglect is now over 18.

Pregnant and Parenting Students: UMBC's Interim Policy on Sex Discrimination, Sex-Based Harassment, and Sexual Misconduct prohibits discrimination and harassment on the basis of sex, including pregnancy. Resources for pregnant, parenting, and breastfeeding students are available through the Office of Equity and Civil Rights. Students are encouraged to contact the Title IX Coordinator to discuss continued access to their academic program, including leave, return from leave, or accommodations related to pregnancy, childbirth, adoption, breastfeeding, or the early months of parenting. A pregnancy-related impairment that qualifies as a disability under the ADA may also entitle a student to accommodations through DAR.

Religious Observances & Accommodations: UMBC policy provides that students should not be penalized because of observances of their religious beliefs and that, whenever feasible, students should have a reasonable opportunity to make up academic work missed because of a religious observance. Students are responsible for informing the instructor of intended absences or requested modifications in advance and as early as possible. Questions may be directed to the Office of Equity and Civil Rights at ecr@umbc.edu.

Hate, Bias, Discrimination, and Harassment: UMBC values safety, cultural and ethnic diversity, social responsibility, lifelong learning, equity, and civic engagement. Consistent with these principles, UMBC policy prohibits discrimination and harassment in its educational programs, activities, and employment based on protected status. Students, faculty, and staff who experience or learn of discrimination, harassment, hate, or bias may use the online reporting/referral form available through <https://ecr.umbc.edu/>. Incidents may be reported anonymously, although anonymity may limit the University's ability to respond.