

MATH 2800-01: Mathematics Major Seminar — Fall 2025

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Lectures: TR, 10:00-10:50AM, Engineering Building 3111
Office Hours: TR, 12:25-1:40PM and by appointment

Prerequisite: grade of C or better in MATH 2200 or an Advanced Placement credit for MATH 2200.

Suggested Reading:

- G. Chartrand, A.D. Polimeni, P. Zhang, *Mathematical Proofs: A Transition to Advanced Mathematics*

Course Description: An introduction to modern mathematical reasoning and discourse, emphasizing the distinctive ways in which logic and language are used and the motivations behind them. Develops methods of precise definition and rigorous proof. Several topics are explored, illustrating mathematics as a living, dynamic subject with its own culture and conventions.

To achieve the above goal, we aim at covering the first six chapters of the above textbook, which discuss the notion of **sets**, **logic**, and **proof techniques**. If time permits, we will sample the latter half of the textbook to illustrate and familiarize ourselves with those techniques.

Grading System: This course utilizes pass/fail (S/U) grading, which is mainly based on your performance working on written assignments.

You should neatly compose your report for every assignment. Please submit only one pdf file to WyoCourses for each assignment. There are several ways to produce such a pdf file. If you use a tablet, then you may employ a note-taking app of the tablet and save your work into a pdf file. Otherwise, you may write on physical letter-size papers, scan and save them as a pdf file. Make sure that the resulting pdf file is readable and contains the correct and complete assignment. Finally, you may also type your work using LaTeX, which is a high-quality typesetting system that is designed for the production of technical and scientific documentation. Let me know if you are interested in it.

Whatever means you choose, please abide by the following rules:

- in general, start every problem on a new page,
- unorganized and/or illegible submissions will not be graded,
- answers without evidence of correct reasoning will not receive full credit,
- except due to an extraordinary circumstance, no late assignments will be accepted.

Attendance and Participation: Class attendance and participation are required. For some borderline cases, I will use contributions from these aspects to determine the final grade.

Student Support & Policies: Please visit <https://www.uwyo.edu/online/support-policies.html> for more information.

Information in this syllabus may be subject to change with reasonable advance notice, as deemed appropriate by the instructor. Substantive changes shall be communicated in the learning management system, other electronic means, or in class to the students with reasonable notice.