

MATH 270-01, Course #05771
Introduction to Abstract Mathematics, Fall 2008
MWF 10:00–10:50 AM, EE 243

INSTRUCTOR: Sean Sather-Wagstaff
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PHONE: 231-8105
OFFICE HOURS: MWF 9:00-9:50 and by appointment

PREREQUISITE: MATH 166

REQUIRED TEXT: *Mathematical Reasoning: Writing and Proof*, Second Edition, by Sunderstrom

USEFUL WEBPAGES:

Course webpage: <http://math.ndsu.nodak.edu/faculty/ssatherw/fa08/270/>

Instructor webpage: <http://math.ndsu.nodak.edu/faculty/ssatherw/>

Anonymous evaluation form: <http://math.ndsu.nodak.edu/faculty/ssatherw/ssw-eval.html>

Math department webpage: <http://math.ndsu.nodak.edu/>

NDSU webpage: <http://www.ndsu.edu>

NDSU blackboard site: <https://bb.ndsu.nodak.edu/>

NDSU webpage on academic responsibility/conduct: <http://www.ndsu.nodak.edu/policy/335.htm>

How to read a math book: <http://www.tc3.edu/instruct/sbrown/math/read.htm>

COURSE DESCRIPTION: Topics include sets, symbolic logic, propositions, quantifiers, methods of proof, relations and functions, equivalence relations, math induction and its equivalents, infinite sets, cardinal numbers, number systems.

This will not be a traditional mathematics course. I will not lecture during most class meetings. Instead, class time will be devoted to group discussion of the assigned reading and exercises and individual presentations of solutions to assigned exercises.

COURSE GRADES: Student grades are based on weekly homework assignments, attendance and participation, two (2) midterm examinations, and one (1) comprehensive final examination. covering students' understanding of topics covered in MATH 270. Weights are summarized in the following table along with grade ranges.

Homework	20%	A	90–100%
Attendance and Participation	25%	B	80–89.9%
Midterm Exams	15% each	C	70–79.9%
Final Exam	25%	D	60–69.9%
		F	0–59.9%

Your grades will be updated throughout the semester at the NDSU Blackboard site.

READING: I will make a reading assignment at the end of each class meeting. Reading assignments will also be listed on the course webpage. Much of the next class meeting will be based on a discussion of the reading. Your participation score for that day will be based in part on your ability and willingness to discuss the reading in class, so you must keep up with the reading.

Reading a math book is not like reading other types of books. I recommend that you read the article “How to read a math book” by Stan Brown; see the link above. This article gives some good specific tips on how to (and how not to) read a math book.

In order to get ready for the day's discussion, you should be prepared to summarize in your own words

the main points from the reading. What is the overall theme of the reading? What are the main ideas, results, definitions, examples, and methods from the reading? What questions do you have from the reading? You may find it helpful to keep a reading journal as part of your course notes.

HOMEWORK: To go with the reading, I will assign exercises on a daily basis in lecture. Assignments will also be listed on the course webpage. Much of the next class meeting will be based on individual presentations of solutions to assigned exercises. Your participation score for that day will be based in part on your ability and willingness to present your own solutions, so you must keep up with the assigned exercises.

I will select several exercises each week for which you are to submit written solutions. These exercises will be assigned in class on Fridays and solutions will be due at the beginning of class on the following Friday. Assignments will also be listed on the course webpage. Each week's written assignment will be worth the same amount. I will drop your two (2) lowest homework scores. Late assignments will not be accepted.

You are encouraged to work on assignments in small groups, but each member of the class is required to turn in a neatly written, organized set of solutions, written in their own words. You will receive no credit for solutions with no work or justification. Pages should be stapled with "fringe" removed. I reserve the right to deduct points for messy papers.

ATTENDANCE: It is in your best interests to attend all class meetings. Good attendance is critical to your success in the class for a number of reasons. First, attendance and participation are worth 25% of your course grade. This will be measured by your presence in class and your willingness and ability to discuss the daily reading and to present solutions to assigned exercises. Second, your presence, attention, and participation in lecture will greatly help your performance in this class. For these reasons, I will take attendance each class period. Officially excused absences will not be counted against you, but you must document such situations with me personally.

EXAMS: Midterm exams will be taken in class and will last 50 minutes. The final examination will be comprehensive and will last 2 hours. Books, notes and calculators will not be allowed during the exams. Make-up exams will only be allowed under extreme circumstances. If you have a conflict with one of the exam dates, you are responsible for making alternative arrangements beforehand.

TENTATIVE SCHEDULE: I reserve the right to make reasonable changes to the schedule.

Labor Day holiday	Mon 01 Sep
Last day for No Record Drop of classes	Wed 03 Sep, 11:59 PM
International Talk Like A Pirate Day	Fri 19 Sep
Midterm 1	Fri 26 Sep
Midterm 2	Fri 31 Oct
Veteran's Day holiday	Tue 11 Nov
Thanksgiving holiday	Thu 27 Nov to Fri 28 Nov
Last day to Drop Classes (W)	Mon 01 Dec, 11:59 PM
Classes end	Fri 12 Dec
Final Exam	Mon 15 Dec, 8:00-10:00 AM

COURSE NOTES: Clear and thorough notes from readings and discussions will provide you with a basis for your homework assignments and exams. You are responsible for taking notes during class, as I will not make course notes publicly available.

WORKLOAD: You should plan to spend 10–15 hours per week working on this course outside of class.

ANNOUNCEMENTS: Course announcements will be sent to your ndsu.edu email account. It is your responsibility to check this email account regularly.

GRAPHING CALCULATORS: are not required for this course, and will not be allowed in the exams.

QUESTIONS: If something said or written in class is unclear, raise your hand and ask a question. I will try to clarify the point being made.

GROUP STUDY: You are required to find at least one person in the class with whom you can study. Not only does this help you study better, but also, in the event you miss a lecture, you can get notes and assignments from this person.

OFFICE HOURS: Come to my office hours for help. This gives me the opportunity to focus on specific problems you may be having and to explain things in a more personal manner. If the scheduled times are bad for you, make an appointment.

INSTRUCTOR FEEDBACK: At the course webpage, there is a link to an anonymous evaluation form where students can submit comments or suggestions for me at any time during the semester.

COURTESY: Cellular telephones, pagers, and other similar devices are not to be used and are to be turned off or set to vibrate-mode during class-time. Students violating this policy will receive one warning per semester. After the warning, violations will result in loss of attendance/participation credit for that day.

ADA STATEMENT: The Americans with Disabilities Act requires that reasonable accommodations be provided for students with physical, cognitive, systemic, learning and psychiatric disabilities in order to ensure their equal access to course content. If you have a documented disability and require accommodations, please let your instructor know as soon as possible. For more information, please contact Disability Services at 231-7671 or go to <http://www.ndsu.edu/counseling/disability.shtml>.

ACADEMIC HONESTY: All work in this course must be completed in a manner consistent with NDSU University Senate Policy, Section 335: Code of Academic Responsibility and Conduct. Violations of this policy in this course will result in a 0 for the quiz or exam on which academic misconduct occurred. You can read the Senate Policy at <http://www.ndsu.nodak.edu/policy/335.htm>.

TENTATIVE COURSE OUTLINE:

Chapter 1. Introduction to Writing Proofs in Mathematics (2 weeks)

Chapter 2. Logical Reasoning (2 weeks)

Chapter 3. Construction and Writing Proofs in Mathematics (2 weeks)

Chapter 4. Set Theory (2 weeks)

Chapter 5. Mathematical Induction (2 weeks)

Chapter 6. Functions (2 weeks)

Chapter 7. Equivalence Relations (2 weeks)