

Math 260: Sets and Logic

Instructor: Danny Lara

Fall 2019

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Class Hours: M-F 2:00pm-2:50pm
Class Room: Samuelson 101

Office Hours: M-F 12:00-2:00pm
Office: 218A

Course Description

How do we communicate ideas in mathematics? How do we show what is true or not in mathematics? Math 260 is an introduction to the fundamental structures of mathematical proofs. In this course, the student will be able to

- construct truth tables and the truth values for compounded statements
- be able to demonstrate logical equivalence via a truth table
- negate various types of statements
- know fundamental set theory and perform set operations
- apply various proof methods such as direct proofs, existential proofs, proofs by contradiction, proof by cases, and proofs using mathematical induction
- work with relations and equivalence relations as well as work with modular arithmetic

Textbook

- Sundstorm, Ted; Mathematical Reasoning: Writing and Proof. This is an open textbook which means you can access an online copy of it [here](#) without cost. You may purchase a paper copy if you so desire.
- You can find supplementary proof books [here](#) as well as other open textbook for other courses such as abstract algebra, linear algebra, topology and so on.

Graded Coursework

As with anything in life, you can only learn so much by spectating. Therefore you will have weekly homework and quizzes.

Quizzes (40%)

Quizzes will be take home so that you may have time carefully write out your solutions. Quizzes will be assigned (usually) on Tuesday and due on Thursday by classtime or 4pm in my office. I will offer constructive feedback on your solutions. You may work with others but be sure to write your own solutions in your own words. You can come by office hours to ask for clarifying questions or work with your peers. I am always happy to assist you! I will drop the two lowest quiz scores from your final quiz grade and there are no quizzes during exam weeks.

Homework (5%)

Homework will be assigned weekly and are due by classtime or 4pm on the due date. Homework will be based on completion. I will post solutions on canvas after the due date. If I forget, please remind me! I would greatly appreciate it !

Exams (30%)

There will be three midterm exams over the quarter. Each exam is worth 10% of your final grade. The tentative dates for exams are as follows. October 16, November 6, December 5. If you cannot make the exam due to an illness, field trip, or an event that is out of your control let me know. Be sure to bring sufficient evidence for your excused absence so that we may set up proper accommodations.

Final Exam (25 %)

There will be a comprehensive final exam covering all content in the course and will be scheduled during the schedule time on finals week.

Grading Policy

Letter grades will be assigned according to the following scale:

| | | |
|----------------|---------------|----------------|
| | $\geq 93\%$ A | $\geq 90\%$ A- |
| $\geq 87\%$ B+ | $\geq 83\%$ B | $\geq 80\%$ B- |
| $\geq 77\%$ C+ | $\geq 73\%$ C | $\geq 70\%$ C- |
| $\geq 67\%$ D+ | $\geq 63\%$ D | $\geq 60\%$ D- |

Accommodations

I am understanding of the need to set up academic adjustments due to disabilities. Bring a copy of your *Confirmation of Eligibility for Academic Adjustments* to set up proper accommodations. If you need testing accommodations, let me know ahead of time (at least 48 hours prior to the exam date). Students with disabilities should contact Disability Services to discuss a range of options to removing barriers, including accommodations. Disability Services is located in Hogue 126. Call (509) 963-2214 or email ds@cwu.edu for more information.

Student Expectations

As a student, you have certain expectations of me. These expectations include coming prepared for lectures, showing up to class on time, be knowledgeable in the course material, be respectful, listen to your concerns, receive timely feedback on your work, and to be understanding of your academic life outside our class. In exchange, I expect you

- show up to class on time
- show mutual respect between your peers
- turn in your homework and quizzes on time

I understand that life happens. You may turn in one late assignment, no questions asked, during the semester.

Excused absences will not lower your overall grade in this class and are determined on a case-by-case basis. Excused absences are those that are both valid and verifiable, e.g. illness, bereavement, and school-related activities. Documentation is required. Excused absences do not include travel for holiday breaks, work, or non-emergency travel delays.

In compliance with RCW 28B.137.010, Central Washington University makes every effort to deal reasonably and fairly with students who, because of religious obligations, have conflicts with scheduled exams, assignments or required attendance. Students must present written notice to their instructor within the first two weeks of class listing the specific dates on which accommodations are required. Contact the Dean of Student Success at (509) 963-1515 for further information or questions.

Professionalism

As a member of a peer learning community, a high degree of professionalism is necessary. CWU expects every member of the university community to contribute to an inclusive and respectful classroom culture.

Academic Honesty

Consult university policies (CWUP 5-90-040(22), CWUR 2-90-040(22), and WAC 106-125-020) for student conduct, cheating, plagiarism, and other academic expectations. CWU's policies and recommendations for academic misconduct will be followed, leading to disciplinary action up to and including failing the course.