

or quiz is considered a violation of Academic Integrity regardless of your purpose or intent in doing so.

Reading & Participation

The key to learning a topic in mathematics is participation. We will strive to have an active, rather than passive, classroom environment. The last page of the syllabus is a day by day outline of the sections that will be discussed in class. You are fully expected to have read the upcoming section **before** the class meeting!

The participation grade will be determined by contributions to class discussions and small group assignments during Proof Practice days.

Attendance & Make-Up Work

Attendance is critical to the understanding of the material in the course; it is both required and expected. Any absence that is not discussed with the instructor prior to the missed class is considered unexcused. I will assume that if you accumulate 4 unexcused absences you are not interested in completing the course. After the 3rd unexcused absence, you, your advisor, and the registrar will be warned that another absence will result in your removal from the class (DF).

When absent, excused or unexcused, you are responsible for all material covered in class. You will not be allowed to make up any work missed due to an unexcused absence.

Homework

Homework will be assigned regularly in this class (virtually every class period). Do not wait to start these until the night before the next class period! Most days some work will be collected and graded. The problems will serve as good examples on what is covered on tests. Three problems will be graded for correctness (for 6 points total), and the remainder will be graded for completion (for 4 additional points). You may discuss the homework with classmates, but all write-ups should be done separately.

If you will be absent, turn in your homework before the class period it is due, or have a friend turn it in for you. Late homework will only be accepted within 2 days of the original due date and will automatically lose the completion points.

Quizzes

There will be quizzes in this class every other Wednesday. They may either be in-class quizzes or take-home quizzes. These will focus on definitions and short answers problems.

Tests & Final Exam

Six tests will be given roughly every sixth day (see the schedule on page 4). Each test will focus on the material learned since the last test, but as with most mathematics classes, the exam will require you to understand and remember things from the past.

The final exam will be comprehensive and given during the scheduled time for the final exam for Block 4: December 15, 2:00 – 5:00 PM.

MCSP Conversation Series

The MCSP Department offers a series of discussions that appeal to a broad range of interests related to these fields of study. These co-curricular sessions engage the community to think about ongoing research, novel applications and other issues that face our discipline. Members of this class are invited to be involved with all of these meetings; however participation in at least **two** of these sessions is mandatory. After attending, submit a one page paper reflecting on the discussion. This should not simply be a regurgitation of the content, but rather a personal contemplation of the experience. This reaction paper will be counted as a quiz and should be uploaded to Inquire using the appropriate link. If you are caught leaving the talk early or being disruptive, you will receive a 0 on the assignment.

Expected Work Hours

This course expects you to spend at least 12 hours of work each week inside and outside of class.

Study Room

The MCSP Study Room, Trexler 271, can be used by you and your friends to meet up so that you can work on homework together or prepare for tests. It is open virtually 24 hours a day, 7 days a week (very occasionally there are meetings in that room). Your student ID card should grant you access to Trexler Hall any time of day if the doors happen to be locked (use the card access point located by the first floor entrance facing the parking lot). Take advantage of this area and time, especially during weekdays when I am around (which is generally a lot)!

Community

Please feel free to become an active member of our department's community. Each of the three disciplines in our department has a student club and you should join! The Roanoke College Student Chapter of the Mathematical Association of America (or "Math Club" for short) meets every other week, plays and learns about games and hosts evening events and the annual Pi-Day celebration! Membership in our Math Club also grants membership into the MAA itself; one of the premiere professional mathematical organizations in the world. In addition, our department offers a weekly tea time for students and faculty; feel free to stop by the MCSP Study Lounge (Trexler 271) for tea and cookies on Wednesdays from 3:00 PM to 4:00 PM. Come meet other students as well as chat with the MCSP faculty members in a casual setting!

Tentative	Date	Section	Topic
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Wed	Aug 30	1	Introduction & Speaking Mathematically
Fri	Sep 1	2.1	Logical Forms and Equivalence
Mon	Sep 4	2.2	Conditional Statements
Wed	Sep 6	2.3	Valid and Invalid Arguments
Fri	Sep 8	3.1	Predicates and Quantified Statements I
Mon	Sep 11	3.2	Predicates and Quantified Statements II
Wed	Sep 13		Test 1
Fri	Sep 15	3.3	Statements Containing Multiple Quantifiers
Mon	Sep 18	3.4	Arguments with Quantified Statements
Wed	Sep 20	4.1	Direct Proof and Counterexample I: Introduction
Fri	Sep 22	4.1	Direct Proof and Counterexample I: Introduction
Mon	Sep 25	4.2	Direct Proof and Counterexample II: Rational Numbers
Wed	Sep 27		Test 2
Fri	Sep 29	4.3	Direct Proof and Counterexample III: Divisibility
Mon	Oct 2	4.4	Direct Proof and Counterexample IV: Division into Cases
Wed	Oct 4	4.5	Indirect Arguments: Contradiction and Contraposition
Fri	Oct 6	4.6	Classical Theorems
Mon	Oct 9		Additional Proof Practice
Wed	Oct 11		Test 3
Fri	Oct 13	5.1	Sequences
Fall Break			
Mon	Oct 23	5.2	Mathematical Induction I
Wed	Oct 25	5.3	Mathematical Induction II
Fri	Oct 27	5.4	Strong Mathematical Induction
Mon	Oct 30		Additional Proof Practice
Wed	Nov 1		Test 4
Fri	Nov 3	5.5	Defining Sequences Recursively
Mon	Nov 6	5.6	Solving Recurrence Relations by Iteration
Wed	Nov 8		Additional Proof Practice
Fri	Nov 10	6.1	Set Theory
Mon	Nov 13	6.2	Set Properties
Wed	Nov 15		Test 5
Fri	Nov 17	6.3	Set Proofs and Disproofs
Mon	Nov 20	7.1	Functions
Thanksgiving Break			
Mon	Nov 27	7.2	One-to-One and Onto
Wed	Nov 29		Additional Topics
Fri	Dec 1		Test 6
Mon	Dec 4	10.1 - 10.2	Graphs Day 1

Course
Schedule

Wed	Dec 6	10.3 - 10.4	Graphs Day 2
Fri	Dec 8		Review for Final
Fri	Dec 15		Final Exam: 2:00 PM - 5:00 PM
