

MATH 1365 SECTION 9 (FALL 2019)
INTRODUCTION TO MATHEMATICAL REASONING

Instructor: Robert Chang
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Office hours: WR 3:00–4:00 p.m. at 534 Nightingale Hall; appointments are welcome

Lectures: MWR 4:35–5:40 p.m. at 267 Ryder Hall
Textbook: *Mathematics: A Discrete Introduction 3e.* by Edward A. Scheinerman
Website: <https://www.northeastern.edu/rchang/2019f1365>

Course content. This course covers the basics of mathematical reasoning and problem solving, with a focus on writing logically sound mathematical arguments and analyzing such arguments. The goal is to prepare students for higher math courses which involve proofs and rigor, such as theoretical linear algebra, group theory, and real analysis. We plan to cover the following topics.

- Fundamentals of mathematical arguments: definitions, elements of logic/Boolean algebra, quantifiers, theorems, proofs, counterexamples;
- Sets and set-theoretic proofs;
- Relations and graphs;
- Functions, compositions, and bijections;
- Counting, binomial coefficients, and bijections;
- Mathematical induction, smallest counter-examples.

Grading policy. Grades are determined by:

- **Homework (30%)**
Weekly assignments are posted on the [course website](#). Collaboration is encouraged, but each student must submit his/her own write-up of the solutions, with an acknowledgment of collaborators. **Late submissions are not accepted; the lowest assignment score is dropped in the final grade calculation.**
- **Three In-Class Exams (10% + 10% + 10% = 30%)**
Three closed-book in-class exams, tentatively scheduled for **Wednesday, October 2**, **Monday, October 28**, and **Thursday, November 21**, are administered during regular class time.
- **Final Exam (40%)**
A two-hour final exam is administered some time between December 6 and December 13. Do not make travel plans that may conflict with the exam.

Academic Integrity and Honesty. Academic dishonesty is not tolerated and results in a failing grade. All incidents are reported to the Office of Student Conduct and Conflict Resolution (OSCCR). See [here](#) for detailed policies.

Academic Resources. The Mathematics Department Tutoring Center is at 540B. Nightingale Hall. This peer tutoring is free. Peer Tutoring appointments can be booked via myNortheastern under TUTORING.¹

Attendance. Attendance is expected. The course moves very fast; it is possible to fall behind in a single day. If you miss class for any reason, make an immediate attempt to contact the instructor or another student to discuss what you missed and how to catch up. It is your responsibility to be aware of any changes the instructor may make to the syllabus as they are announced in class. Students are responsible for all information given when they are absent.

College of Science Policies. See [here](#) for the current College of Science Academic Course Policies.

Final Exam Conflicts. Only two finals at the same time or three in one day constitute a University recognized legitimate reason to be excused from taking the final at the scheduled time. Students with such a conflict should complete a [Final Exam Conflict Form](#), available on the [Registrar's website](#).

Reporting Concerns. If you have a concern about the course or the instructor that is not or cannot be resolved by speaking with the instructor, the next step is to speak with the Course Coordinator. If the Course Coordinator does not settle the matter, please contact the Teaching Director, Professor Robert McOwen, 445 LA, 617-373-5678, r.mcowen@northeastern.edu.

Students with Disabilities. Students who have disabilities who wish to receive academic services and accommodations should follow the standard [Disabilities Resource Center \(DRC\) procedures](#).

¹Although you can walk in, it is really best to sign up in advance. Tutoring requests are scheduled by students in real-time and confirmed by email. You are encouraged to schedule your appointments in advance; for example, it is recommended that next-day appointments be booked by 9:00 p.m. the previous day. You can, however, always check the schedule to see if there are any available times up to two hours ahead of time. It is expected that tutoring services in the Mathematics Department Tutoring Center will begin the week of September 16th. A partial schedule will likely be available before then, and any updates on the availability of peer tutoring before September 16 will be announced in class. See [here](#) for more information.

Title IX. The University strictly prohibits sex or gender discrimination in all university programs and activities. Information on how to report an incident of such discrimination (which includes sexual harassment and sexual assault) is located [here](#).

TRACE Participation. Every student is expected to complete the Teacher Rating and Course Evaluation (TRACE) survey at the end of the semester.