Adventures in Math
Math 110
Spring 2025

Instructor: John Terilla

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Introduction

Welcome to **Adventures in Math**, a course that invites you to uncover the hidden structures and surprising patterns that shape the world around us. Mathematics isn't about numbers or formulas—it's a way of seeing deeply, discovering patterns, and finding beauty in unexpected places. Together, we'll embark on a journey to explore these ideas—a journey that's challenging, inspiring, and just might change how you see the world. Whether you've always been curious about math or are searching for a fresh perspective, this is your chance to experience it like never before.

Topics covered will include

- **The Puzzle of Connections**: Explore how graph theory helps uncover the hidden structures in networks and maps and solves problems from the "Three Houses and Three Utilities" puzzle to the Four Color Theorem.
- **The Limits of Logic**: Investigate the Church-Turing thesis and what it tells us about the limits of computation. Explore Gödel's incompleteness theorem and how they reveal the boundaries of mathematical certainty.
- **The Impossibility of Fairness**: Learn about Arrow's impossibility theorem and the surprising constraints on designing fair voting systems.
- **Chaos and Order**: Discover how simple rules can lead to complex and unexpected patterns.

Practical Information

Textbook

There is no textbook for this course. There may be articles assigned for required reading.

Meeting Time

Monday and Wednesday 10:45AM – 12:00 PM -- 4:25 PM in Kiely 258.
Please be aware of the CUNY Academic Calendar. In particular, class will not meet on:

- Wednesday, January 29
- Wednesday, February 12
- Monday, February 17
- Tuesday, February 18
- Thursday, March 6
- Monday, March 31
- Wednesday, April 9
- Monday, April 14
- Wednesday, April 16

Exams

Course grades will be determined by three midterm exams, one final exam and some quizzes. The lowest exam score will be dropped. There will be no make up exams.

- Midterm 1 (20%): Wednesday, Februrary 26
- Midterm 2 (20%): Wednesday, March 26
- Midterm 3 (20%): Wednesday, April 30
- Final Exam (30%): Monday, May 19th from 11:00am – 1:00pm
- Quizzes (10%): unannounced

Office Hours

- Mondays from 1:00pm – 2:00pm in Kiely 243

- And by appointment

General Information

The Immigrant Student Support Initiative

Queens College offers robust services to students, regardless of their immigration status.

- Web: https://www.qc.cuny.edu/immi/
- Phone: 718-997-3990
- Email: ImmigrantSupport@qc.cuny.edu

Office of Special Services (SPSV)

The Office of Special Services (SPSV) is committed to supporting students with qualifying disabilities under the Americans with Disabilities Act (ADA) by providing reasonable accommodations to ensure equal access. If you have previously received accommodations due to a disability, believe you may have a disability, or have a temporary disability, please visit the office's website (https://www.qc.cuny.edu/sp/) for further information on the assistance they can offer you. Accommodations are not retroactive, so you are encouraged to get registered sooner rather than later. You may also contact their office at qc.spsv@qc.cuny.edu or call 718-997-5870 during office hours for assistance as well.

Academic Integrity

Academic Dishonesty is prohibited in The City University of New York and is punishable by penalties, including failing grades, suspension, and expulsion as provided at CUNY policy on Academic Integrity.

Statement on Student Wellness

As a student, you may experience a range of challenges that can interfere with learning, such as strained relationships, increased anxiety, substance use, feeling down, difficulty concentrating and/or lack of motivation. QC services are available free of charge. You can learn more about confidential mental health services available on campus at: Counseling Services Department. For the 24/7 crisis counselor 24/7 (text "CUNY" to 741741).