Syllabus

Instructors (also see Overview tab in NYU Classes)

- Name: Ken Cereste (ALEC: MW 9:30am-10:50am)

  Office: `https://nyu.zoom.us/j/97006414600`

  Office Hours: MTuWTh 12:00pm-1:00pm or by appointment

  Email: `cereste@nyu.edu`

- Name: Jose Diaz-Alban (BLEC: MW 2:00pm-3:20pm)

  Office: `https://nyu.zoom.us/j/9179442616` (password: discrete).

  Office Hours: (MW 3:30 PM - 4:30 PM $\wedge$ T 11:00 AM - 12:00 PM) $\vee$ by appointment.

  Email: `jad241@nyu.edu`

- Name: Yuhong Yu

  Office: `https://nyu.zoom.us/j/9429127393`

  Office Hours:

  Email: `yy35@nyu.edu`

Learning Objectives

This course is a one-semester introduction to discrete mathematics with an emphasis on the understanding, composition and critiquing of mathematical proofs.

Course Materials

We will be using the textbook by Susanna Epp, *Discrete Mathematics and Applications*, 5^{th} edition. The ebook is available via WebAssign.

Homework

There are two homework platforms.

Online Homework:

We will be using WebAssign. We will try to have assignments due on Monday's. If we change a due date on a particular assignment due to syllabus issues, then it will move the due date to the following Monday. Here is an example.

- Suppose that WebAssign section 3.1 is due on Monday Feb. 15, 11:59pm EST. However, section 3.1 was not completed by Wednesday Feb. 10. Then we will move the due date to Monday Feb. 21, 11:59pm EST.

Note that while you have the right to push your submission to the deadline, ***NO*** *homework extensions will be granted to due technical issues. No late homework is accepted.*

Written Homework:

There will be problems to write up on paper each week and turn in. Written homework will be posted on Gradescope every Wednesday starting Wednesday Feb. 3. By all means you may work in groups on the homework assignments. Collaboration is a big part of learning and of scholarship in general. However, each student must turn in his or her own write-up of the solutions. Homework is collected via Gradescope. We will try to have assignments due on Thursday's.

Note that while you have the right to push your submission to the deadline, ***NO*** *homework extensions will be granted to due technical issues. No late homework is accepted.*

Grading of Written Homework

Each problem will be worth 3 points. If a particular problem has multiple parts, then each part will be worth 3 points. For example, if problem 1 has parts (a), (b), and (c), then problem 1 is worth 9 points. If problem 1 has no parts, then it is simply worth 3 points.

Graders will be expecting you to express your ideas clearly, legibly, and completely, often requiring complete English sentences rather than merely just a long string of equations or unconnected mathematical expressions. This means you could lose points for unexplained answers, or poorly prepared and presented papers. Each problem is graded according to the following rubric

Points	Description of Work
3	Work is completely accurate and essentially perfect. Work is thoroughly developed, neat, and easy to read. Complete sentences are used.
2	Work is good, but incompletely developed, hard to read, unexplained, or jumbled. Work contains right idea but is flawed.
1	Work is sketchy. There is some correct work, but most of work is incorrect.
0	Work minimal or non-existent. Solution is completely incorrect.

Note there are no half points

Exams

There will be 3 exams. The dates of the exams are subject to change.

Exam 1

This exam made up of MC/SA problems and OR problems. "What in the world are MC/SA and OR problems?" Good question. Here you go!

- Multiple Choice (MC): The exam will have MC problems. These problems have five options, (a)-(e). One of the options MAY be " None of the above". These problems are worth 3 points each, and no partial credit is available.
- Select All (SA): The exam will have SA problems. For example, you be may be asked to select all statements that are true (or false). These problems have five statements to select from. These problems are worth 3 points each. No partial credit is available. Note that SA type problems have at least two correct options. In fact, it is not uncommon for all 5 options to be correct.
- Open Response (OR): These are questions where work is needed to justify your answer. The work associated to these problems is uploaded directly to Gradescopee. Partial credit may be given.
- Exam 1 will have have 8-15 MC/SA problems.
- Exam 1 will have 3-8 OR problems. FYI: A problem with multiple parts is considered one problem.

- It will open on Gradescope on Thursday March. 4 11:59pm EST. The exam is timed. Once open, you will have 4 hours to complete the exam. The exam closes on Sunday March 7 11:59pm EST regardless of how much time you have left on the timer. As long as you start the exam at or before March 7, 7:58pm EST, you will have the full time to work on the exam.
- You are free to use the class notes/videos, the textbook, and the homework solutions. No other material may be used. If you have to ask, then it cannot be used.
- The exam will be based on material covered up to and including Wednesday March 3.

  $***$ To get you comfortable with the exam structure, a beta exam will be posted by 02.16.2021. The purpose of the beta exam is to get you comfortable with the real thing. It does not count towards your final grade $***$

Exam 2

This exam is made up of MC/SA problems and OR problems.

- Exam 2 will have have 8-15 MC/SA problems.
- Exam 2 will have 3-8 OR problems. FYI: A problem with multiple parts is considered one problem.
- It will open on Gradescope on Thursday April 8 11:59pm EST. The exam is timed. Once open, you will have 4 hours to complete the exam. The exam closes on Sunday April 11 11:59pm EST regardless of how much time you have left on the timer. As long as you start the exam at or before April 11, 7:58pm EST, you will have the full time to work on the exam.
- You are free to use the class notes/videos, the textbook, and the homework solutions. No other material may be used. If you have to ask, then it cannot be used.
- The exam will be based on material covered up to and including Wednesday April 7. Yes, the exam will be cumulative.

Exam 3

This exam is made up of MC/SA problems and OR problems.

- Exam 3 will have have 8-15 MC/SA problems.
- Exam 3 will have 3-8 OR problems. FYI: A problem with multiple parts is considered one problem.
- It will open on Gradescope on Thursday May 13 11:59pm EST. The exam is timed. Once open, you will have 4 hours to complete the exam. The exam closes on Sunday May 16 11:59pm EST regardless of how much time you have left on the timer. As long as you start the exam at or before May 16, 7:58pm EST, you will have the full time to work on the exam.
- You are free to use the class notes/videos, the textbook, and the homework solutions. No other material may be used. If you have to ask, then it cannot be used.
- The exam will be based on material covered up to and including Monday May 10. Yes, the exam will be cumulative.

Policies for Missed Exams

It is University policy that an out-of-sequence exam can be administered only if there is prior authorization by the Mathematics Department or the Office of Student Affairs. If you miss an exam for a medical, religious, or family emergency reason, you must provide written documentation to the Math Department at soe.math@nyu.edu in order to schedule a make-up exam within 2 days of the missed exam, or upon your first day returning to class if the documentation excuses a longer absence. Make-ups will not be granted

to students who do not notify the Math Department in a timely manner. Students may be asked to seek additional approval from the Office of Student Affairs.

We cannot accommodate out-of-sequence exams, quizzes, and finals for reasons of convenient travel, even if you have already purchased tickets. Please note carefully the date of your exams and final and plan your travel schedule accordingly.

Disability Disclosure Statement

Academic accommodations are available for students with disabilities. The Moses Center website is www.nyu.edu/csd. Please contact the Moses Center for Students with Disabilities (212)-998-4980 or mosescsd@nyu.edu) for further information. Students who are requesting academic accommodations are advised to reach out to the Moses Center as early as possible in the semester for assistance.

Academic Integrity

The Department of Mathematics reserves the right to impose the strongest academic sanctions for violations of Academic Integrity. Furthermore, those who breach the School's rules on academic integrity will be sanctioned under this Policy. Students are responsible for familiarizing themselves with the School's Policy on Academic Misconduct.

Definition: Academic dishonesty may include misrepresentation, deception, dishonesty, or any act of falsification committed by a student to influence a grade or other academic evaluation. Academic dishonesty also includes intentionally damaging the academic work of others or assisting other students in acts of dishonesty. Common examples of academically dishonest behavior include, but are not limited to, the following:

- **Cheating:** Intentionally using or attempting to use unauthorized notes, books, electronic media, or electronic communications in an exam; talking with fellow students or looking at another person's work during an exam; submitting work prepared in advance for an in-class examination; having someone take an exam for you or taking an exam for someone else; violating other rules governing the administration of examinations.
- **Fabrication:** Including, but not limited to, falsifying experimental data and/or citations.
- **Plagiarism:** Intentionally or knowingly representing the words or ideas of another as one's own in any academic exercise; failure to attribute direct quotations, paraphrases, or borrowed facts or information. Unauthorized collaboration: working together on work that was meant to be done individually.
- **Duplicating work:** presenting for grading the same work for more than one project or in more than one class, unless express and prior permission has been received from the course instructor(s) or research adviser involved.
- **Forgery:** altering any academic document, including, but not limited to, academic records, admissions materials, or medical excuses.

Advice

This is a fun, but challenging course. It will require a constant persistence on your part to succeed in the course. While it may seem that a variety of disjoint topics are being covered, you will soon find that they are all intertwined. If you get behind early, it may not be possible to catch up. Stay on top of things. Come to office hours. Do not get behind with the material.

Grades

The grade will be determined as follows

Written Homework	5%
WebAssign	25 %
Exam 1	20 %
Exam 2	25 %
Exam 3	25 %

The following grade scale is used when assigning letter grades:

Cutoff	Letter grade
90	A
87	A-
84	B+
80	B
77	B-
71	C+
65	C
50	D

Note that we do not round.