CS-GY 6003 Foundations of Computer Science INET
Fall 2020
NYU Tandon School of Engineering
Instructor: Erin McLeish

General Information:
This course if offered *online*, through NYU classes. All course material, lecture notes, video content, practice problems as well as the class forum can be found there.

Instructor:
Students can contact the instructor *anytime* by email (em4447@nyu.edu) or directly through NYU classes, or by making an appointment during the online "office hours". Reaching out for help or questions on any of the practice material is strongly encouraged since this is an online course.

Office hours:
Office hours are held online with ZOOM. The schedule is posted on Classes. If you are not available during the scheduled time, please feel free to ask to schedule on another day. Before the midterm and exam, additional office hours will be organized.

Topics:
Mathematical foundations of logic and reasoning, Review of functions, summations, sequences, inequalities, Growth of functions, Proof techniques, Recurrence relations, Counting techniques, Elementary number theory, Introduction to Graph Theory, Probability. If time permits, we will include the basics of undecidability.

Course Material:
The material for the course will be provided on NYU classes and will include lecture notes and videos. The textbooks below are excellent references, and most of the material can be found in these books and they have many practice problems. They are not *required* for the homework, since I will not refer to specific page numbers or questions or sections directly.

Discrete Mathematics and its Applications, by Rosen. (6,7, or 8th edition).
Discrete Mathematics, Elementary and Beyond by Lovasz, Pelikan, Vesztergombi

Exams:
There will be one midterm and one final in this class. Both exams will be take-home this term. The midterm will be held the week of October 19th. The final will be held during the official final exam period.

Homework:
There will be 4 homework assignments in this class. The homework is twofold. The written part (which is handed in), and one live online question which is conducted by the instructor and with the student. The live online question will focus on a selected part of the homework, and will be carried out *after* the written part is submitted. Students will complete an online question for exactly 3 out of the 4 assignments. In order to get **credit** for the homework, the student is **required** to complete the online live portion. The time slots for booking the online part of the homework will be posted at least 7 days in advance.

Live Practice sessions:

There are weekly live sessions aimed where we review the material from the week. The main focus is to go over the details from the course material and see how they are applied to practice problems. Students are strongly encouraged to attend live and use the time to interact directly with others and discuss solutions. **Each student is required to present at least one solution during the course.** This can be done either live or via a recording.

Grading Scheme:

Homework 20%
Practice Problem participation 5%
Midterm 35%
Final 40%

Final grade:

85+ A
80 - 84: A-
75-79: B+
70-74: B
65-69: B-
60-64: C+
55-59: C
Below 55: F