Math 120-07 Fall 2021

Syllabus

**Instructor**: Prof. Kong

# Instructor

Xiaomeng(Vivian) Kong (M.S. Data Science of SPS CUNY, M.A. Applied Mathematics of Queens College)

**Email:** [Xiaomeng.Kong@qc.cuny.edu](mailto:Xiaomeng.Kong@qc.cuny.edu) *(Please allow at least 24 hours for the email responses Monday through Thursday, and 2- 3 days for the email response Friday through Sunday.)*

**Online office hour:** Monday & Wednesday 9:55 -- 10:40 AM (By appointment)

[Fall 2021 Office Hour Appointment](https://docs.google.com/spreadsheets/d/1qkVwdUayveQtJYNAXT5zH05Um2PNbBCrsrtu0MvvKfk/edit?usp=sharing)

Appointment link:

1. Please make your appointment at least 24 hours in advance.
2. It is first come first serve. However, please be considerate for other students who may also need appointments. Please make one appointment only per week.
3. If you need to reschedule your appointment, please cancel your appointment as soon as possible so that the other students can take that appointment.

\*\* If you have any quick questions, I am happy to answer them 5 min before or after the class. (The time will be 9:50--9:55 am, 10:40 -- 10:45 am, 12:00 -- 12:05 pm)

# Class meeting time and Zoom Meeting link

1. Class meeting time: \* Mon & Wed 10:45 AM -- 12:00 PM

\*: Our class is synchronous which means we will meet in Zoom meetings during our regular class meeting time.

\* Exams will be taking place **in person**.

1. Zoom meeting link: <https://ncc-zoom.zoom.us/j/2216499541>
2. Please join the above link at our regular class meeting time with your full name as the user name.
3. Please do not distribute this link to other people who are not registered for this class for your own protection.

# Course Description

#### ***Prereq.:* MATH 122 or the equivalent.**

#### **This course lays the groundwork for further courses in discrete mathematics and theoretical computer science. Topics include sets, functions, relations, formal logic (propositional and predicate calculus); elementary number theory; elementary combinatorics and discrete probability; introductory abstract algebra, monoids, and groups. *Not open to students who have received credit for MATH 220.***

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# Materials Needed

1. **Textbook**: ***Discrete Mathematics and It’s Applications*,** 8th edition, by Kenneth H. Rosen. McGraw-Hill, Inc., 2018. (You may be able to find cheap versions of the textbook. Any format of the textbook is acceptable.)
2. A Scanner or a Scanning APP on your phone(Just in case if you need to submit your exam answers electronically.) (Scannable and CamScanner are widely used)
3. All of the class materials ( notes/videos/hw/quiz/Exams) will be in Blackboard.

# Grading

1. In-Class Quizzes: 15%
2. Two Exams: 25% each
3. Final Exam: 35%

**\* Suggested hw will be assigned with solution manuals after each class.**

[Mat 120 Suggested Hw Problems](https://docs.google.com/document/d/1Ks7TxWhCnSXfwynK3Uk_GRn21U5Lj19oA6DJBkfkTSM/edit?usp=sharing)

1. Attendance & participation (Perfect attendance and good participation can help boost your letter grade to the next level. For example, if you have an average of B, perfect attendance can help you receive B+ instead. However, this can not help you with a failing grade)
2. Before each exam, (normally 1-2 weeks before), you will receive a package of questions( approximately 25 questions) in Blackboard. Each question is worth 0.2 points and you will have two chances to answer them before the Review day. It counts as extra credits for that corresponding exam. It is not mandatory but it will help you prepare for the quizzes and exams.

Note: \* Any late submission will not be accepted and there is no make-up for exams.

# Reasonable Accommodations For Students With Disabilities

Candidates with disabilities needing academic accommodation should: 1) register with and provide documentation to the Special Services Office, Frese Hall, Room 111; 2) bring a letter indicating the need for accommodation and what type. This should be done during the first week of class. For more information about services available to Queens College candidates, visit the website, or contact: Special Service Office; Director, Miriam Detres-Hickey, Frese Hall, Room 111; 718-997-5870.

# Academic Integrity

Here is the list of test cheating behaviors. Please use them as your test-taking guidelines. The list will be edited if more issues regarding the test behaviors occur.

[Test Cheating List](https://docs.google.com/document/d/1riYxicXB5pSsLynZMD3y9E2d62RcoUCb5nslsGBIV3A/edit?usp=sharing)

Any cheating behaviors in this course will result in getting 0 for the exam or “F” for the course.

# CUNY Policy on 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 <https://www.cuny.edu/about/administration/offices/legal-affairs/policies-procedures/academic-integrity-policy/>.

# Course Outline

| Topics | Chapter | Sections |
| --- | --- | --- |
| **The Foundation: Logic and Proofs** | 1 | 1.1 -- 1.8 |
| **Basic Structures: Sets, Functions, Sequences, Sums and Matrices** | 2 | 2.1 -- 2.4, 2.6 |
| **Number Theory and Cryptography** | 4 | 4.1 -- 4.3 |
| **Induction and Recursion** | 5 | 5.1 & 5.2 |
| **Counting (if time permits)** | 6 | 6.1 -- 6.3 |

# Schedule and Plan ( plans subject to change)

\*\* There is a short quiz at the end of each lecture marked with a **Q**.

| Date | Plan |
| --- | --- |
| 8/25 | Syllabus + 1.1 |
| 9/1 | 1.2 + 1.3 |
| 9/6 & 9/8 | No Classes Scheduled |
| 9/13 | 1.4 + 1.5 |
| 9/15 | No Classes Scheduled |
| 9/20 | 1.5 + 1.7 |
| 9/22 | 1.7 |
| 9/27 Q | 1.8 + Quiz 1 |
| 9/29 | Review Exam 1 |
| **10/4** | **Exam 1 (In Person)** |
| 10/6 | 2.1 |
| 10/11 | No Class Scheduled |
| 10/13 | 2.2 |
| 10/18 | 2.3 |
| 10/20 | 2.4 |
| 10/25 | 2.6 |
| 10/27 | 4.1 |
| 11/1 Q | 4.1 + Quiz 2 |
| 11/3 | No Class |
| 11/8 | No Class |
| 11/10 | Review Exam 2 |
| **11/15** | **Exam 2 (In Person)** |
| 11/17 | 4.2 |
| 11/22 | 4.3 |
| 11/24 | 5.1 |
| 11/29 | 5.1 + 5.2 |
| 12/1 | 5.3 |
| 12/6 | 6.1 |
| 12/8 Q | 6.2 + Quiz 3 |
| 12/13 | Review |

\* Final Exam will be in person if there is no change on the side of CUNY. You will need to check CUNYFirst for the updated information (Date and location) about the Final Exam.