

# How to Succeed in Mat 2440

Before each class: (1-2 hours per week)

- Preview the material in the textbook (check on the syllabus to see what the coming section is).
- Find the **potential questions** that you would like to know/**ask during the class**.
- Look at the homework questions and try to do it.

During class: (4 hours per week)

- Take note if possible.
- Participate in the class by following the materials, asking/answering the questions, etc.
- Finish the classwork in the class.
- **Don't be late and don't leave early.**

After each class: (3-5 hours per week)

- Read your notes with the textbook.
- Resolve the homework/practice problems with or without a study group but write the homework **independently**.
- Write down the **mistakes** you made or any **thoughts** of the lecture, homework, practice problems with your notes.

Learning Tips:

- Harder topics need longer time to understand.
- Effective note-taking skill.
- Be patient and kind. Give yourself a chance to learn even you think the topic is easy or irrelevant .
- Help others when you can and ask for help when you need it. (My email address: **shang-huan.chiu40@citytech.cuny.edu**)
- Check the course website constantly:  
**<https://chiush.github.io/teach/2025SpringMat2440.html>**

MAT 2440 Discrete Structures and Algorithms I

Text: Discrete Mathematics and its Applications, 8<sup>th</sup> edition, by Rosen

Lec.	Discrete Structures and Algorithms I	Homework
1	1.1 Propositional Logic (1-13)	(P. 13) 1, 3, 11, 13, 25, 29, 31, 33, 39, 48
2	1.2 Applications of Propositional Logic (17-23)	(P. 23) 1-3, 7, 44, 45
3-4	1.3 Propositional Equivalences (26-37)	(P. 38) 3, 4, 6, 7, 8, 11, 27, 46*
5	1.4 Predicates and Quantifiers (40-56)	(P. 56) 1, 2, 4, 7-13 odd, 19, 30, 38
	1.5 Nested Quantifiers (60-68)	(P. 68) 1, 3, 10, 27, 31, 33
6	1.6 Rules of Inference (73-82)	(P. 82) 5, 6, 19, 20, 35
7	1.7 Introduction to Proofs (84-95)	(P. 95) 1-4, 9-12, 19, 20
8	<b>Test 1</b>	
9	2.1 Sets (121-131)	(P. 131) 1, 7, 13, 21 (a)&(b), 29, 30, 33, 37
10	2.2 Set Operations (133-144)	(P. 136) 3, 15(b), 19(b), 23-25, 28, 52, 53, 58-60
11	2.3 Functions (147-161)	(P. 161) 3, 9-12, 15, 20, 23, 30, 33, 41, 44-46, 60-63
12	2.4 Sequences and Summations (163-177)	(P. 177) 3, 9, 25, 29-31, 33, 35, 45
13-15	3.1 Algorithms (201-213)	(P. 213) 1, 3-15 odd, 16-18, 36, 37, 39-41, 56, 57
16	<b>Test 2</b>	
17-18	3.2 The Growth of Functions (216-228)	(P. 228) 1-27 odd, 34-42
19-21	3.3 Complexity of Algorithms (231-241)	(P. 241) 1-5, 20, 22, 40
22	4.1 Divisibility and Modular Arithmetic (251-258)	(P. 258) 1, 13, 21, 27, 31-35, 36, 47
23	4.2 Integer Representations and Algorithms (260-268)	(P. 269) 1-15 odd, 57, 58
	4.3 Primes and Greatest Common Divisors (271-288)	(P. 288) 1, 3, 17, 25, 27, 33
24	4.4 Solving Congruences (290-300)	(P. 301) 1, 5, 11, 21, 33, 34, 55
	4.5 Applications of Congruences (303-308)	(P. 308) 1-5 odd
25	4.6 Cryptography (310-321)	(P. 322) 1-5 odd
26	<b>Test 3</b>	
27-28	5.1 Mathematical Induction (331-350)	(P. 350) 1-11 odd, 15, 21
29	<b>Review</b>	
30	<b>Final Exam</b>	