

CSC281 Syllabus (Fall 2025)

Course title: Discrete Mathematics for Computer Science

Instructor: Yazied Hasan(yhasan@ksu.edu.sa)

Office: 2184

Credit hours: 3 + 1

Prerequisites: Math151 + Stat324

Prerequisites to: CSC311 and CSC339

Course description: This course aims to understand and use (abstract) discrete structures that are the backbones of computer science. In particular, this class is meant to introduce logic, proofs, sets, functions, sequences, summations, number theory, counting, relations, graphs, and trees, emphasizing applications in computer science.

Textbook(s):

K.H. Rosen, *Discrete Mathematics and Its Applications*, 8th edition, McGraw-Hill, 2011.

Topics (tentative):

Note: Section number is based on the 8th edition of the textbook.

Note: Section number is based on the 3 rd edition of the textbook			
Chapter	Topic	Sections covered	# Weeks
1	Foundation: Logic	§1.1 – 1.5	1.5
2	Sets, Functions, Sequences, and Summation	§2.1 – 2.5	1.5
5	Proof techniques including Mathematical Induction	§1.7 – 1.8, §5.1 – 5.2	1
4	Number Theory and Cryptography	§4.1 – 4.6	4
5	Counting	§6.1 – 6.5	3
6	Advanced Counting Techniques	§8.1 – 8.2, §8.4 – 8.6	3
7	Relations	TBD time permitting	
8	Graphs		
9	Trees		

Evaluation:

Attendance	3 points
Homework(s)	7 points
Term Group Project	15 points
Quizzes (2)	10 points
Midterm exam (1)	25 points
Final exam	40 points