MA 3025 — LOGIC AND DISCRETE MATHEMATICS (4-1)

Prerequisite: MA 2025 (MA 1025 can possibly be used as well).
Text: Discrete Mathematics and Its Applications, 7th Edition, K.H. Rosen, WCB/McGraw-Hill 2012.

HOURS	TOPIC	SECTION
2-2	Propositional Logic, quantifiers, rules of inference	1.1-1.6
1-3	Proof Methods and Strategy; Sets, Set Operations	1.7; 1.8; 2.1; 2.2
1-4	Divisibility and Modular Arithmetic; Primes and Greatest Common Divisors ; Solving Congruences	4.1- 4.5
1-5	The Basics of Counting, The Pigeonhole Principle; Permutations and Combinations	6.1- 6.3
2-7	Binomial Coefficients	6.4
1-8	Mathematical Induction	5.1
3-11	Strong Induction	5.2
2-13	Recursive Definition and Structural Induction	5.3
2-15	Recurrence Relations	8.1
2-17	Solving Recurrence Relations	8.2
1-18	Inclusion Exclusion	8.5
2-20	Applications of Inclusion Exclusion	8.6
1-21	Matrices	2.6
2-23	Relations and Their Properties	9.1
2-25	Representing Relations	9.3
1-26	Equivalence Relations	9.5
2-28	Functions	2.3
1-29	Graphs and Graph Models	10.1
1-30	Graph Terminology and Special Types of Graphs	10.2
1-31	Graph Isomorphism	10.3
1-32	Euler and Hamiltonian Path	10.5
2-34	Graph Coloring	10.8
9-43	Exams, Reviews, and Holidays	

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Ralucca Gera