

Discrete Mathematics (Math 210) Common Topics List ¹

1. Propositions and Connectives:

- (a) Truth Tables (optional)
- (b) Logical Equivalences
- (c) Tautologies and Contradictions
- (d) Quantifiers (Universal, Existential)

2. Sets and Connectives:

- (a) Power Sets
- (b) Cartesian Products
- (c) Union, Intersection, Symmetric Difference
- (d) Countability
- (e) Cardinality
- (f) DeM

- (e) Chinese Remainder Theorem (optional)
- (f) Primes and the Fundamental Theorem of Arithmetic

6. Elementary Combinatorics

- (a) Combinations and Permutations of Sets
- (b) Product Rule and Sum Rule
- (c) Binomial Theorem

7. Relations

- (a) Equivalence Relations, Partitions
- (b) Partial Ordering (optional)