

## **Discrete Mathematics (Math 210) Common Topics List** <sup>1</sup>

### **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)