

MATH 431-200/500. Structures and Methods of Combinatorics

General Information is available at eCampus. Also see
<http://www.math.tamu.edu/~cyan/Teaching/math431.html>

Week 1 Permutations and Combinations

Week 2 Permutations and Combinations, basic counting. Pigeonhole Principle (simple form)

Week 3 Pigeonhole Principle, Ramsey theory in graph coloring

Week 4 Generating Permutations and Combinations. Posets and equivalence relations

Week 5 Exam 1 on Monday. September 23.

Binomial Theorem and Multi-nomial Theorem. Newton's Binomial theorem.

Week 6 Binomial coefficients, identities. Two theorems on posets.

Week 7 Inclusion-Exclusion Principle

Week 8 Recurrence and Generating Functions

Week 9 Solving recurrence, Catalan sequences

Week 10 Exam 2 on Monday. October 28.

Then System of Distinct Representatives.

week 11 Stable Marriages and Deferred Acceptance Algorithm.

Week 12 Graph, Eulerian trails and Hamilton cycles.

Week 13 Trees and algorithms

Week 14 Graph Parameters

Final Exam Period December 11, Wednesday, 10:30–12:30. **Exam 3.**