

COURSE ANNOUNCEMENT

GRAPH THEORY AND COMBINATORICS

MATH 485/685

Spring Semester 2009
MWF 12:00-12:50 PM
206 Ansari Business Bldg

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Combinatorics is the study of arrangements, patterns, designs, assignments, schedules, connections, and configurations. Graph theory is the study of networks. Together these areas constitute one of the fastest growing fields of modern mathematics. We present the basic mathematical theory of these areas, together with many applications. Topics Covered: Counting rules; generating functions; recurrence relations; inclusion-exclusion; pigeonhole principle; Ramsey theory; fundamental graph theory concepts (connectedness, coloring, planarity); Eulerian and Hamiltonian chains and circuits.

Prerequisites: MATH 330 or consent of the instructor. MATH 285 is recommended but not required. No previous background in combinatorics or graph theory assumed.

Text: *Applied Combinatorics*, 2nd edition, by Fred Roberts and Barry Tesman (2004). Available at the bookstore.

Coming Fall 2009: MATH 487/687 Deterministic Operations Research
MATH 786 Cooperative Game Theory