

SOUTHEAST MISSOURI STATE UNIVERSITY

Department of Mathematics
Title of Course: Graph Theory

Course Number: MA549
Date: January 2011

I. Catalog Description: Basic parameters and properties of graphs, representations, trees, connectedness, Eulerian and Hamiltonian cycles and paths, matchings, edge and vertex colorings, independent sets and cliques, planar graphs, directed graphs, multigraphs. (3)

II. Prerequisites: MA145 Analytic Geometry & Calculus II and MA250 Foundations of Mathematics

III. Objectives of Course:

- A. To give students all the basic and several of the more advanced definitions of graph theory.
- B. To help students develop a working knowledge of several important concepts, techniques and results common in graph theoretical proofs.

IV. Expectations of Students:

- A. Students are expected to participate in classroom activities, to do homework, to write proofs, and to pass exams.

V. Course Outline: (# class hours)

- A. Basic Definitions – (9)
- B. Trees – (6)
- C. Matchings – (6)
- D. Connectivity – (6)
- E. Vertex Colorings – (6)
- F. Planarity – (5)
- G. Edge Colorings, Line Graphs, Cycles – (5)
- H. Examinations (2)

Total Class Hours: 45

VI. Textbook: West, Douglas. *Introduction to Graph Theory*, 2nd. Ed. Prentice-Hall; 2000.

VII. Basis of Student Evaluation:

- | | |
|-----------------|-----|
| A. Assignments | 60% |
| B. Hourly Exams | 20% |
| C. Final Exam | 20% |

VIII. Grading Scale

- 90% - 100% = A
- 80% - 89% = B
- 70% - 79% = C
- 0% - 69% = F

The weight of the evaluation criteria may vary according to each instructor and will be communicated at the beginning of the course.

IX. Academic Policy Statement:

Students will be expected to abide by the University Policy for Academic Honesty regarding plagiarism and academic honesty. Refer to:
<http://www6.semo.edu/judaffairs/code.html>

X. Student with Disabilities Statement:

If a student has a special need addressed by the Americans with Disabilities Act (ADA) and requires materials in an alternative format, please notify the instructor at the beginning of the course. Reasonable efforts will be made to accommodate special needs.