

Course Syllabus

MTHC 5480.01

Instructor: Andrea Rothbart

Topics: Problem Solving Strategies

Spring, 2006

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1. **Course Description: (Student focus, rationale, scope, prerequisites)**

The purpose of this course is to help teachers identify, develop, and learn to apply general problem solving strategies that are effective in analyzing a wide variety of mathematical problems. Specific problems in elementary mathematics and logic are used as a vehicle for this study. Teaching strategies that assist students in problem solving will also be discussed.

2. **Learning Outcomes: (Goals, objectives, course outcomes, etc.)**

Students will experience using a variety of strategies that are powerful tools in problem solving. Students will develop increased sensitivity to problem solving and thus be in a better position to help their students do mathematics.

3. **Schedule:**

Most class meetings, we will work (alone, in small groups, or as a class) on mathematical problems. We will discuss how we approached the problems and which strategies were useful and possibly applicable to other problems. In addition, students will be given problems to work on as homework. Relevant research in problem solving will be shared.

The first class or two, students will learn specific techniques for determining explicit and recursive descriptions of polynomial functions from partial input/output tables.

Course Requirements: In addition to class attendance and participation, and completing homework assignments, students will maintain a journal (the specifics of which will be described during the first class.)

Students will also participate in introducing problems to the class.

There will be a take-home exam near the end of the semester.

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4. **RESOURCES:**

Text Used: There is no textbook. Students will be given a bibliography of resources that are available in our library.

5. **EVALUATION:**

Journal

Class Attendance and Participation

Class presentation of problems

Homework Assignments

Take-Home Exam

**This syllabus is subject to change at the discretion of the instructor.
Therefore, regular attendance is required.**