

**Mathematics 297R, Spring 2005**  
**Problem Solving Seminar**

**Instructor:** Michael Rogers

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Hours: MWThF 2:15–3:30. Available at other times, too.

**Textbooks:**

Polya, *How to Solve It*.

Handouts, and excerpts from other texts will be used.

**Course Content:** This is a one semester-hour course on basic problem-solving strategies. Problems from a variety of subjects, such as combinatorics, number theory, geometry and analysis, will be considered. Some classic problems as well as some from competitions, such as the Putnam Exam, will be considered.

**Course Goals:** The goal is for the student to develop effective and active tactics for attacking problems. In particular: the use of analogy, restatement, specialization, generalization, proof by contradiction, and looking back over a solution to consider what one has learned.

**Coursework:** Problems will be assigned; these will be discussed, students will present their solution and/or students will write solutions that will be collected for credit.

**Grading:** Grades will be based primarily on the students presentations and problems collected for credit (80%) as well as on class participation (20%). Each student’s work will be judged in relation to the goals set for the course.

**The Honor Code of Oxford College applies to all work submitted for credit in this course. By placing your name on such work, you pledge that the work has been done in accordance with the given instructions and that you have witnessed no Honor Code violations in the conduct of the assignment.**