MAT 4937 001 Mathematical Problem Solving

Fall 2010

Instructor's Report (Schonbek)

The course had an enrollment of 16 students. The course was entirely dedicated to solving problems of varying degrees of difficulty, organized according to several standard techniques such as pigeonhole principle, induction, graphs, etc. The level of the problems varied from fairly simple to quite challenging. Most, if not all, were taken from the textbook, The Art and Craft of Problem Solving, by Paul Zeitz.

Assessment for the course was based on the following.

- **In class presentations.** One day per week was dedicated to student presentations. For this purpose, the class was divided up into four teams of four students each. Each team was required to select and prepare four problems to solve and then to present and discuss the solutions in class. Each member of the team would be responsible for one of the selected problems. Teams had some freedom in their choice of problems; one restriction was that the problems had to be within the type of problems discussed in class in the week or weeks prior to the presentation. Each team had two opportunities to present material.

  Generally speaking, the presentations were very good. Using a scale developed by a previous instructor, the results can be classified as in the following table.

Quality	Unsatisfactory	Satisfactory	Good	Excellent
Points	2	3	4	5
Number of students	1	0	12	3

- **Journal.** Students were asked to keep a journal listing all problems solved, with solutions. Most journals were good, but none could be declared really excellent.

Quality	Unsatisfactory	Satisfactory	Good	Excellent
Points	2	3	4	5
Number of students	1	3	12	0

- **Exams.** There was a midterm exam and a final exam. The midterm exam was a take home exam, and students did fairly well on it. The final was the regular two and a half hour in class exam. The final exam consisted of 6 problems. While it is hard to categorize them precisely, two of the problems consisted in applying solving techniques learned in class, two of the problems reduced to being able to nicely write out mathematical arguments in a logical and coherent ways. All required an amount of critical thinking. The performance of the class was less than stellar; at best it could be called fair.

With one exception, all students passed the course. The exception was a student who from the beginning missed classes, kept on missing them even after having been warned, and finally stopped showing up altogether.