Math 271: Problem Solving Seminar – Putnam

Credit can be received for this course in at most four semesters.

Dr. Roland Minton, Trexler 270-C, 375-2358

This course meets every Monday evening from 7:00pm to 9:00pm in Trexler 271 from September 20 through October 25.

Course Objectives: Develop an understanding of how new mathematics problems can be solved using previous knowledge. Develop an ability to ask and answer questions about a proposed method of solving a problem. Develop an interest in and enjoyment of attempting difficult mathematics problems. Improve your problem-solving ability. Improve your perspective on different areas of mathematics. Improve your confidence when presented with a new problem. Learning outcomes are attached.

Attendance Policy: Perfect attendance is necessary! This is a seminar course, where the students share presentation of material with the faculty. Participation includes doing presentations yourself, asking questions of classmates and generally being involved in the solution of each problem. **If you have two unexcused absences, you will be dropped from the course.**

Academic Integrity: The college policy is fully supported. You will gain more from solving a problem yourself than finding a solution online or in a book, but you may use any available resource as long as you give appropriate citations, can present the work in your own words and answer relevant questions about the work.

Study Problems: Problems will be assigned throughout the course. Many of these are problems from previous editions of the Virginia Tech Regional Mathematics Contest or the William Lowell Putnam Competition. You are **not** expected to solve every problem or even 70% of the problems. You are expected to spend considerable time outside of class preparing solutions or partial solutions. Students who successfully solve a problem should be prepared to present their solution to the class, both orally and in writing. Team presentations are allowed. The proposed solution and alternative solutions will be discussed respectfully but thoroughly by the class. Along with making sure that a solution is correct, we want the explanation to be clear and the logic to be elegant. The more problems you solve and present, the better your grade and the more you benefit from this course.

Teaching Style: This is a seminar course, so the role of the professor should be minimal. Students will present problems, discuss solutions and determine the content and value of a given class session. You will receive significant guidance, but be prepared to participate!

Tests: None. You should plan on competing in the Virginia Tech Regional Mathematics Contest on October 30 and/or the William Lowell Putnam Competition on December 4. Both contests are administered on campus.

Grading: To earn an A, you must attend every session, present solutions to several problems, participate in class discussions and compete in at least one of the two contests (VTRMC and Putnam). The B grade represents competition in one of the two contests but only moderate class participation. The C grade represents no competition or minimal class participation. To pass the course, you must attend most sessions and present at least one correct solution.