

CSCI 293 – Special Topics: Computational Problem Solving

Instructor: Michael Goldwasser
Credit Hours: 1 unit (Pass/No Pass)
First meeting: 4:30pm Wednesday, 29 August 2005

Overview

The primary goal of this course is to develop strategies and provide experience in the rapid development of software for solving computational problems akin to those used in the ACM International Collegiate Programming Contest. That annual contest involves three-member teams competing to solve a set of computational problems in a five-hour time period.

The class will serve as a way for us to develop these skills, establish teamwork and prepare for this year's regional contest, which will be held on Saturday, 5 November 2005 at Webster University. Though the course is structured around preparation for such a contest, interested students may participate in and receive credit for this course even if not participating in the actual ACM contest; likewise, students may be selected for SLU's ACM contest team even if they choose not to formally register for this class.

Intellectual Merit: Programming under extreme time pressure is not necessarily common in most academic environments, but it is an important skill within industry. To be successful, one must be able to read a written description of the goal, to discern the underlying computational challenges, to evaluate the level of complexity in solving the problem, and then to quickly move towards implementing an approach. Working as a team raises additional issues also common in life. Though team members might work individually on separate problems, there might be even better ways to utilize the varying skills of the team with collaboration.

Course Administration: With a focus on the 5 November 2005 ACM contest, the timeline of this course will be quite different than that of a typical 1-hour class. In the early weeks of the semester, we may try to meet for an hour or two on Wednesday afternoons. However to best prepare for the contest, we will try to find a handful of five-hour blocks of time to best simulate the contest conditions. Given that it is almost impossible to find such a common block of time during a weekday, we expect to choose three or four such weekend blocks, leading up to the November contest. We will have one final "post-mortem" meeting the week after the contest as the end of the course.

Grading: All students should register for the course using the Pass/No Pass grading option. There will be no required homework or exams. A passing grade will be given to each student who regularly participates at the class meetings.

Prerequisite: Given the level of the typical problems used, students who register for this course should have already completed coursework at least through the level of CSCI 180 (Data Structures) or equivalent.