Course Title and Course Number
Computational Science 600, Interdisciplinary Projects in Science and Engineering

Semester and Year
Fall 2012

Schedule Number

COURSE INFORMATION

Class Days: NA
Class Times: NA
Class Location: NA

Professor: Peter Salamon
Contact Information: salamon@sdsu.edu

Office Hours Days:
Office Hours Times (and by appointment):
Office Hours Location: GMCS 512

Course Overview

Please describe the purpose and scope of the course including, but not limited to:

- Description from the Official Course Catalog
  An intensive study in advanced computational science. Topic to be announced in the class schedule.

- Description of the Purpose and Course Content
  The students in this course work in a managerial capacity with undergraduates enrolled in SCI 496. The teams, led by the graduate students enrolled in COMP 600 are responsible for making progress on real ongoing research problems of current interest. The problems typically come from the labs of some SDSU faculty member. The students are initially exposed to three problems and self select into groups associated with the problems. They then plan and execute experiments and calculations.

- Student Learning Outcomes
  Learn research techniques including presentation of work at scientific meetings.

- Real Life Relevance
  Brings all the students’ previous coursework to bear on a real research problem.

- Relation to Other Courses
  Graduate counterpart of the undergraduate course SCI 496.

Enrollment Information

Please include information about enrollment for the course including, but not limited to:

- Prerequisites – consent of instructor
- Adding/Dropping Procedures

Course Materials

Please provide information about the materials for the course including, but not limited to:

   Problem specific reading in the scientific literature, online, and some text portions from our library.

Course Structure and Conduct

Please provide information about the structure of the course including, but not limited to:

- The course meets twice a week for the first three weeks with background lectures on the problems from faculty and from previous years’ students. After the third week, the class breaks into groups and switches to one all hands meeting a week with a second meeting for the groups by themselves. The all hands meetings consist of students making presentations regarding their progress and the problems they have run into. The group meetings plan experiments and calculations and split workload.

- Technology Utilized in the Course (eg. iClicker, Blackboard, Other Course Management Systems, etc.)
The computational aspects of the course typically require serious programming. Examples from last year coded neural networks, random forests and support vector machines. They also designed and fabricated nano-fluidic devices controlled by arduino boards. Blackboard was used to coordinate tasks and distribute readings.

Course Assessment and Grading

Please explain how the course will be assessed and graded by including, but not limited to:

The semester sets a very tight timetable for significant progress on the research problems. Each group is responsible for one 10 minute presentation each week. Presentations (oral or poster) at scientific meetings required (SRS acceptable).

Grading on quality of progress and quality of the presentation.