Winter 2005

THE PRACTICE OF SCIENCE
Physics 121A / ECE 194R
Tuesday and Thursday 5:00 – 6:15 PM
4670 PSB North - CNSI Conference Room
Credits: 3 units

PROFESSOR DAVID D. AWSCHALOM
PHYSICS, ELECTRICAL AND COMPUTER ENGINEERING

DR. FIONA GOODCHILD
EDUCATION, CALIFORNIA NANOSYSTEMS INSTITUTE

Sponsored by the California Nanosystems Institute, this new two-quarter course is aimed at undergraduate students with potential careers spanning experimental science and technology. The course will consist of lectures, scientific presentations, and invited talks by research scientists from several departments and local industry to provide a broad and balanced perspective. Lectures on laboratory technique, advanced instrumentation, data analysis, and ethics of research will be accompanied by practical exercises, laboratory visits, campus facility tours, and state-of-the-art research projects. Students will be required to analyze data, draw conclusions, and defend their interpretations. This course is an opportunity to gain an appreciation and understanding of experimental science and engineering, and its importance in a scientific career.

In particular, students will:

- OBTAIN AN OVERVIEW OF THE FULL SCIENTIFIC PROCESS, FROM INCEPTION TO FINAL OUTCOME
- INTERVIEW FACULTY AND GRADUATE STUDENTS TO EXPLORE CAREER OPPORTUNITIES
- ARTICULATE CONCEPTS, CREATE RESEARCH PROPOSALS, AND EXPLORE FUNDING SOURCES
- PLAN A RESEARCH AGENDA TO STRATEGICALLY ATTACK SCIENTIFIC AND TECHNICAL PROBLEMS USING ALL AVAILABLE RESOURCES
- CHOOSE AND EXECUTE SPECIFIC RESEARCH PROJECTS ALONGSIDE GRADUATE STUDENTS
- DEVELOP AND ESTABLISH COLLABORATIONS AND EFFECTIVE TEAM EFFORTS
- PREPARE AND REFEREE SHORT SCIENTIFIC PUBLICATIONS
- PRACTICE AND DELIVER EFFECTIVE TECHNICAL PRESENTATIONS

This course is intended for sophomore and junior undergraduate students within the science and engineering disciplines. Admission requires a minimum 3.0 GPA.