

**“NEW” CALCULUS AT THE UW**

The core content of freshman calculus is over two hundred years old, but methods of teaching the subject are always evolving. After several years of intensive study within the department and with the help of generous funding from the Office of Undergraduate Education, the first two quarters of freshman level calculus will be taught in a new format for the next three years. The major changes include:

- Lecture classes of 81 students, a reduction from the previous size of 160 students.
- TA section classes of 27 students, a reduction from the previous size of 40 students.
- Introduction of one 80 minute TA section per week combined with one usual 50 minute TA section; in the past, both TA sections were 50 minutes in length.
- We will use a standard textbook that thoroughly covers the basic mechanics of calculus, then supplement the text with departmentally produced materials. Some of the material will augment the textbook homework, while other materials (worksheets) are designed specifically for the 80 minute TA sections.
- Students will take their two hour-long midterm exams during the 80 minute TA sections, an effort aimed at eliminating time pressure problems. In the same spirit we write a 2 hour final

exam, but offer students 3 hours in which to take the exam.

- Course materials will be conveniently archived using the world wide web, an asset for both students and instructors. The web address for Math 124 and Math 125 is <http://www.math.washington.edu/~m12X> where X=4 or 5.

There is also an outreach component to our changes. A small number of community college faculty (three during the 2001-02 academic year) will visit our department during their sabbaticals and be involved in teaching calculus. This will give the department an opportunity to learn about mathematics instruction at local community colleges. At the same time, these teachers will have an opportunity to renew their mathematical interests by becoming involved in various seminars and courses within the department. At the end of a three-year period, we will pursue permanent funding for this “new” calculus through the College of Arts and Sciences. To help us with this effort, we have already begun to work with the Center for Instructional Development and Research (CIDR), which will assist us in assessing the success of our new approach. In the end, our goal is to deliver an outstanding calculus course that prepares our students for further study in the sciences, in engineering, or elsewhere within the university. Of course, along the way, we hope to expose our students to the beauty and power of mathematics.

**REU PROGRAM AT THE UNIVERSITY OF WASHINGTON**

The National Science Foundation supports Research Experiences for Undergraduates in various disciplines at selected universities in the United States. The University of Washington Mathematics Department has had an REU site since 1988. This program is directed by Ed Curtis and Jim Morrow. The students in the program are undergraduates selected in a competitive process from universities throughout the United States. Each year eight to ten students are selected and are given a stipend from the NSF grant that supports an eight week stay during the summer in which they participate in research projects under the direction of professors Curtis and Morrow. The projects are in the general area of inverse problems for electrical networks. After

a week of lectures and reading, students start to work on projects. In summer 2001, students came from UW, MIT, West Virginia, Emporia State College, Smith College, and Cornell University. The students in this program are exceedingly strong. There are usually one or two University of Washington undergraduates in the program. However the applicants from the University of Washington were so outstanding we had three UW students in the program in 2001. One of the UW students from the year 2000 program is now serving as a TA in the Mathematics Department, even though he is still an undergraduate. Two of the year 2000 REU students were part of a very successful Mathematical Modeling Team that won a “Meritorious Winner” award in the modeling contest sponsored by the Consortium for Mathematics and Its Applications. (For more information about this contest, see Modeling Contest on page 4.)

