

CALCULUS REFORM

In the fall of 1997, Doug Lind, then Chair of the Mathematics Department, formed an Ad Hoc Committee on Calculus to review our science and engineering freshman calculus course, Math 124/5/6. The committee presented a report to the department in the spring of 1998, which ultimately led to a Tools for Transformation (TFT) "calculus reform" proposal funded for a three-year period by the Office of Undergraduate Education. The academic year 2001-2002 was the first year of implementation. A new version of Math 124 was introduced in Autumn 2001, followed in Winter 2002 by a new version of Math 125.

Our "calculus reform" involves several components, which include:

- Lecture classes of 81 students, a reduction from the previous size of 160 students.
- TA section classes of size 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 use a standard textbook that thoroughly covers the basic mechanics of calculus; we then supplement the text with departmentally produced materials. Some of the materials 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 in an effort to eliminate time pressure problems.

-Course materials are conveniently archived using the World Wide Web, which is an asset for both students and instructors. The web addresses for Math 124/5 are:

<http://www.math.washington.edu/~m124/>

<http://www.math.washington.edu/~m125/>

We are very pleased to report that our first-year reform effort has been a success on several fronts. A full detailed report of our findings may be obtained online at:

http://www.math.washington.edu/~m124/Reports/report_summer2002.html

Overall we found that student and collegial assessments indicate that most components of the courses worked well. Our student feedback was gathered on several fronts: student course evaluations (given at the end of the term), supplementary questions aimed at specific components of the reformed courses and extensive mid-quarter discussions facilitated by CIDR (the Center for Instructional Development and Research). In total, 34 calculus classes involving approximately 2,500 students participated in these surveys; a full discussion of this data is contained in the above report. Our instructor feedback was gathered through weekly meetings between the course coordinators and all instructors for the course, including additional surveys and meetings with graduate student teaching assistants. Of course, as with any reform effort, a few components were identified as needing further adjustment or assessment and this will be the main focus of year-two of our calculus reform effort. Professor David Collingwood is serving as coordinator of the calculus reform project.

Our model for curricular reform involves extensive on-going input from students, faculty, graduate teaching assistants and CIDR facilitators. We believe the end result is a revised course which engages the students and instructors in a satisfying learning and teaching experience. We intend to maintain the positive trajectory of student satisfaction during the coming academic year. Ultimately, after the end of our three-year TFT grant, we will pursue permanent funding of our calculus reform through the College of Arts and Sciences.



Dave Collingwood

IRVING TAKES NEW POSITION

After serving for one year as chair of the department, Ron Irving became Divisional Dean for the Natural Sciences in the College of Arts and Sciences on July 1, 2002.

In this position, Ron oversees the science departments in the College, from Astronomy through Mathematics to Zoology. Ron also works jointly with the Dean of the College, David Hodge, and the other divisional deans on budgetary, curricular, development, and policy matters of the College.

Ron came to the department in 1980. While continuing to teach and pursue his research interests in ring theory and representation theory, Ron began to assume a range of departmental administrative duties during the 1990's. He received a UW Distinguished Teaching Award in 2001, just before becoming chair. As divisional dean, Ron is already enjoying the opportunity to learn more about the exciting research being done in the sciences at UW. He continues to participate in some departmental activities, such as the development of SIMUW, the new summer program for talented high school students discussed elsewhere in the newsletter.



Mathematics

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