SYLLABUS: Math 161 Calculus 1 **Don Faust**

The Calculus provides, fundamentally, solutions to two problems: the development of a fruitful concept of the slope of a curve at a point on the curve; and, the development of a fruitful concept of the area bounded by a curve. After two millennia of struggle with these problems, solutions were basically constructed by the seventeenth century. But possibly what makes the Calculus so central to mathematics (and to the wide range of disciplines which make daily use of mathematics) is the great number and variety of ways which have been found in the last three hundred years, and which are continuing to be found, to make productive use of these solutions in successfully attacking many practical problems.

More generally, the following broad perspective may be helpful to you. The fundamental tools of continuous mathematics provide a rich storehouse of models for the representation and solution of many problems. Making intelligent use of these models involves both (1) developing a facility for analyzing problems and casting them in ways which, where appropriate, make good use of these models of mathematics, and (2) developing a facility for working with these models themselves. Our course will take us through a representative sample of these tools of mathematics, and will concentrate on both aspects (1) and (2) delineated above. It can be a very exciting journey (if your involvement is sincere and includes both good class attendance and a parallel daily commitment to hammering things out on your own through daily study and problem-solving), at the end of which you will find not only that your mathematical maturity has been substantially enriched, but also that the general analytical skills you bring to bear in the broader arena of your daily life will be substantially enriched as well.

Texts:

CALCULUS by Stewart
and
CALCULUS USING INFINITESIMALS by Faust

Evaluation:

Firstly, in addition to ungraded daily assignments, there will be a sequence of graded SUBMITTED ASSIGNMENTS which can be resubmitted repeatedly until satisfactory.

Secondly, there will be four mid-semester exams and a final exam. Only very exceptional circumstances could justify missing an exam; in these rare cases, permission must be requested in advance, and a make-up exam (usually oral) will occur later in the semester.

The evaluation framework is as follows: (please note especially the dates, already fixed, when the four exams will take place):

Exam 1:	Wed	26 Sept	150 points
Exam 2:	Wed	17 Oct	150 points
Exam 3:	Wed	7 Nov	150 points
Exam 4:	Wed	28 Nov	150 points
Final Exam:			350 points
Submitted Assignments: to be submitted en masse by Friday 30 Nov for grade recording			50 points
		Total:	1000 points

Grading:

90-100%, A; 80-89%, B; 70-79%, C; 60-69%, D; 0-59%, F. The grading may be less stringent, but not more stringent, than this.

Note regarding special needs:

If you have a need for any disability-related accommodations or services, please inform the Coordinator of Disability Services Office in 1104 University Center (227-1737). Reasonable and effective accommodations and services will be provided to students if requests are made in a timely manner, with appropriate documentation, in accordance with federal, state, and university guidelines.