Professor: Dr S.P. Glasby

Course Information

Office:	Rm 119, Bouillon Hall.
Office Hrs:	By appointment, or at times outside office.
URL:	`http://www.cwu.edu/~glasbys/` click on the `Teaching` link
Study Guides:	see `Study Guide 153`, or first 2 pages of `Study Guide 172`
Text:	Thomas' Calculus: Early Transcendentals, 11th ed.
Assessment:	T1 (5%); T2 (5%); T3 (40%) (50 min.); Final Exam (50%) (2 hr.)
Requirement:	**You must average at least 50% on T1 and T2 to pass.**
Dates:	T1: Fri Mar 30; T2: Mon Apr 2; T3: Fri May 04; E: Jun 07 1-3pm (TBC)
Safari:	`http://portal.cwu.edu/` for exam time, and final grades

Calculus I (Math 172) is an introduction to differential calculus. It is the first of a four course sequence: Calculus II covers integral calculus. Differential calculus is useful for studying rates of change of real-valued functions, and their maxima and minima. This course has many applications as real-valued functions, and rates of change, arise frequently in the natural sciences, economics, technology, and of course in mathematics. Calculus I requires that you to know basic algebra. If you have forgotten any of it, then review at `http://www.sosmath.com/cyberexam/algebra/test.html`. Alternatively, go to my home page, follow the `teaching` link, and look at the Math 153 summuary, or the first two pages of the Math 172 summary. Every student should learn from the link to `Common Mathematical Errors`.

Tests 1 and 2 are important multiple choice tests with some short answer questions, which review pre-calculus I and II. **Students must average at least 50% on Tests 1 and 2 in order to obtain a grade higher than F**. You should review: basic algebra, estimating magnitudes of numbers, areas, arc lengths, volumes, properties of exponentials and logarithms, trigonometry: definitions, radians, Pythagorean identities, law of sines/cosines. See the above Study Guides.

Calculus requires a higher level of mathematical sophistication than the previous mathematical courses you have taken. For this reason, students all over the world struggle when they first meet calculus. I expect that you devote at least 10 *productive* hours of work per week to this course.

I encourage the intelligent use of calculators and computers. They can be very useful as an aid to computation, and visualization, and as a laboratory for quickly exploring new ideas. You may use other calculators, but class room explanations will be restricted to the TI83 Plus. As calculators are not allowed on tests and the final exam, you may want to improve your accuracy and speed of arithmetic. See the useful links on my homepage.

We shall cover chapters 1–4. I should stress though that the lecture notes, not the textbook, form the body of examinable material. I strongly encourage you to read the relevant parts of the textbook *before* attending lectures, review your lecture notes *after* each lecture, and do all the assigned problems! The way to become a good violin player is to practice. To become good at this course (and hence pass) you must practice. Mathematics is not a spectator sport.

If you are unable to attend a lecture, you should get a copy of the notes from a classmate *who takes good notes*. Consider forming your own study groups: you can learn a lot by explaining solutions to a friend, and by hearing solutions.

After each test I will post adjacent to my office a list of scores and projected grades, so you can determine your relative position in the class. You should double-check the time of the final exam by using Safari. The exam will be in our assigned classroom.

Students requiring special accommodation, because of a physical or mental disability, should see me in the first week of the course. If you are quite sick or suffer a notable hardship, then please let me know promptly. Claims of lengthy hardship that are disclosed the day before the final exam receive less sympathy. The Registrar will notify you of your final grades, however, you can find out earlier by using Safari.

I shall hand out homework problems (and solutions) for the whole course. The classes on most **Tuesdays** will be devoted to **problem-solving**. Please bring the questions and your solutions on these days. While this lessens the need to own a textbook, it does not lessen the need to read textbooks that are complementary to the lectures. Besides the textbook, the library has a number of excellent calculus textbooks. I strongly encourage you to read the relevant parts of your textbook *before* attending lectures, and to do all the assigned homework problems! Moreover, your solutions should be well explained, well set out, and neatly written as if on an exam. If you have never before written a good solution, you are unlikely to do so on an exam. The way to learn how to write good solutions is to practice and be self-critical. My solutions will look easy, only when you struggle with the problems will you realize the difficulties. Excellent online plotters are available at `http://wims.unice.fr/wims/`. There are many ways to learn calculus which are complementary to the lecture series. For software and web tutorials see my homepage.

The Univ. Math Center (Hertz 104; see `http://www.cwu.edu/~aap/mathcenter/` for hours) is a useful source of help. A list of private mathematics tutors may be obtained from the Mathematics Secretary (BU108). You may qualify for free tutoring. See the Academic Achievement Program: `http://www.cwu.edu/~aap/campus.html`.

A brief description of the course content is: limits; slopes of tangent lines; velocity and acceleration; derivatives applied to graphing functions; the mean value theorem; the exponential and logarithmic functions; exponential growth and decay. The "course outcomes": are solid knowledge of pre-calculus at the beginning of the course, and reasonable mastery of the above topics at the end of the course.