

About the course:

This course is an introduction to the ideas and techniques of one-variable calculus, intended for students who are interested in science and mathematics.

Calculus is the most important mathematical tool we have for understanding the world around us. Its development caused a revolution in science; its principles are the basis for the mathematical progress of physics, chemistry, economics, and engineering.

The language of calculus is the one in which we write the equations of general relativity, of stresses and strains, of quantum mechanics. It is the language in which we express the laws of electromagnetism and the evolution of dynamical systems. It is the method by which we find the most efficient designs or paths, investigate instantaneous behaviour, and reassemble infinitely many pieces together into a whole.

Many courses on calculus concentrate only on the computational aspects: how to calculate derivatives and integrals, or transforming physical problems into calculus ones.

We will learn to do these things, but in this class we will also learn more: we also focus on understanding the ideas that underlie calculus and how to use them to see more deeply into the mathematical and physical world.

Grading Scheme:

FALL TERM		WINTER TERM	
Homework	30%	Homework	20%
In-class exams	30%	In-class exams	30%
Dec. Exam	40%	Dec. Exam	50%

There are twelve homework assignments each term, and the lowest two grades each term will be dropped when computing the homework mark. The final grade for the course is simply the average of the fall and winter grades.

The homework is due Tuesday, at the beginning of class. The first homework assignment is due on Tuesday, September 16.

Web resources:

A description of the course, as well as links to the list of lecture topics and homework assignments can be found at:

<http://post.queensu.ca/~rothm/Math120/about.html>

There is also a Web CT site for the course where you will be able to check your grades or post questions to the class. You can log in to Web CT from the above page, or directly from the university's Web CT page.

Tutorials:

There are two tutorials for the course, Monday 9:30–10:20 and Friday 16:30–17:20. Both tutorials are in Jeff 202. The tutorials are a chance to go over some of the ideas in the class that week.

Important Dates:

	FALL TERM	WINTER TERM
First in-class exam	Oct. 8	Jan. 30
Second in-class exam	Nov. 7	Mar. 17
End of term exam	TBA	TBA

Other resources:

The *Math Help Center* in Jeff 201, is open from 9:30am to 6:30pm, and there are tutors there who can help answer your questions.

There will also be two undergraduate assistants for the class, and I expect that they will have weekly meeting times in the math help center. This is especially useful since they will know exactly what is going on in the course, and so have a better chance at answering your questions in a way that you can understand. I will also have regular office hours where you can come and ask questions.

The meeting times of the two tutors and the times of the office hours will be next week.

Textbook: *Calculus*, by James Stewart, sixth edition.

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