

OKANAGAN COLLEGE  
Course Outline



<b>Course:</b>	Math 122	<b>Title:</b>	Calculus II
<b>Section:</b>	071	<b>Semester:</b>	Winter 2012
<b>Instructor:</b>	Jason Schaad	<b>Office:</b>	D362
<b>Email:</b>	jschaad@okanagan.bc.ca	<b>Website:</b>	www.schaad.ca

## Schedule

<b>Lectures:</b>	Monday	1530 – 1650	A204
	Wednesday	1530 – 1650	A204
	Friday	1530 – 1620	A204
<b>Labs:</b>	Monday	1730 - 1820	D229
	Wednesday	1730 - 1820	D229

\*No labs the first week of class

## Textbooks and Calculators

**Required:** James Stewart, **Single Variable Calculus: Early Transcendentals**, Seventh Edition, Brooks/Cole, 2011, ISBN 0-5384-9867-6, **JS**

**Recommended:** James Stewart. Etal., **Student Solutions Manual: Single Variable Calculus: Early Transcendentals**, Seventh Edition, Brooks/Cole, 2011, ISBN 0-8400-4934-X

A full scientific calculator is required and a graphing calculator is highly recommended. If you do not own one and do not know what to buy talk to your instructor. Note that the use of graphing calculators is allowed, even encouraged, on all work in this course. However, calculators with symbolic manipulation capabilities, such as the TI-89 or TI-nspire CAS, and hand held computers with QWERTY or similar keyboards are not allowed in any examinations.

## Course Objectives

To enable the student to understand and use of the basic concepts of the integral calculus of the elementary functions and to use these concepts to analyze and solve a variety of problems. A significant component of the course will be the use of Maple, a computer algebra system, to enhance the student's understanding of the basic concepts, as an aid in computation and visualization, and as a tool in solving problems. The main topics covered in the course are: the definite integral, antiderivatives and the Fundamental Theorem of Calculus; techniques of integration including substitution, integration by parts, trigonometric integrals and

substitutions, partial fractions, and integral tables; numerical integration including the trapezoidal, midpoint and Simpson's rules; applications of integration to area and volume problems; differential equations including slope fields, Euler's method, separable and linear equations; series, power series and convergence, Taylor polynomials, Taylor series and applications.

**Prerequisites** Math 112 or equivalent

**Transfer**

UBC/UBCO	Math 101 (3)	UNBC	Math 101 (3)
UVic	Math 101 (1.5)	SFU	Math 152 (3)
TRU	Math 124 (3)	UCFV	Math 112 (3)

**Evaluation**

Quizzes	12%	
Computer Lab Tests & Exercises	12%	
Term Test One	12%	Wednesday, January 25
Term Test Two	12%	Wednesday, February 15
Term Test Three	12%	Wednesday, March 21
Final Exam	40%	

**Note 1:** A quiz will be administered during most Friday classes as indicated in Course Syllabus. A hand-out containing weekly Problem Sets will be distributed in the first week of classes, and Quiz Practice Problems will be posted on the course web page each week. The problems for each quiz will be selected from the Problem Set and Quiz Practice Problems for the week, or earlier weeks.

**Note 2:** Computer Lab Exercises will be given starting the second week of the classes. **These exercises will not be marked.** During the semester there will be two Computer Lab Tests based on the exercises. In addition, there will be two Computer Lab Assignments given during the semester that will be handed in for marking. It is not necessary to pass the Computer Lab portion of the course in order to pass the course.

**Note 3:** Term Tests will be held during the normal class period as indicated above. Following each term test a written assignment, based on problems on the term test, to be handed in for marking will be distributed.

**Note 4:** When a student misses a term test he or she may apply to have the percentage mark for the in class portion of that test, not the written assignment, replaced by the percentage mark on the final exam. A valid reason must be provided as part of the application for this privilege.

**Note 5:** The Final Examination will be comprehensive and will be scheduled during

the final examination period in April. It is your responsibility to insure that you will be available to write exams during this period.

## Office Hours

Office hours will be announced during the first week of classes. I guarantee that I will be available for consultation during these hours, either in my office or in the Success Centre, unless I inform you otherwise in advance or by posting a notice outside my office. Anytime that I am in my office students are welcome. Students are encouraged to consult with me on problems and course material at any time. **The only way to learn mathematics is by getting your hands dirty. If you can't do it yourself, ask for help!**

## Contents of the course

- Applications of Differentiation (Section 4.9)
- Integrals (Sections 5.1-5.5)
- Applications of Integration (Sections 6.1-6.3, 6.5)
- Techniques of Integration (Sections 7.1-7.8)
- Further Applications of Integration (Section 8.1)
- Infinite Sequences and Series (Sections 11.1-11.2)

Depending on available time, we may cover material drawn from a selection of the following sections.

- Sections 11.3, 11.6, 11.8-11.10, 9.1-9.6.