

**Math 2502A, Fall 2009**  
**Advanced Calculus I**  
**Syllabus**

**Instructors:**

- ◇ Section 001: Rasul Shafikov, MC 112, [shafikov@uwo.ca](mailto:shafikov@uwo.ca)
- ◇ Section 002: André Boivin, MC 122, [boivin@uwo.ca](mailto:boivin@uwo.ca)

Emails will be answered within 48 hours.

**Textbook:** *Multivariable Calculus, Early Transcendentals 6E*, by James Stewart, Brooks/Cole. The book is available at Taylor library (two hour reserve). Optional: *Student Solution Manual for Multivariable Calculus, 6E*, by James Stewart, Brooks/Cole.

**Course web page:** <http://www.math.uwo.ca/~shafikov/2502/>  
Visit this page for up to date information on the course.

**Course Description:**

- ◇ Section 001: MWF 1:30 - 2:30 PM in BG 0153
- ◇ Section 002: MWF 10:30 - 11:30 in UC 142.

Differential Calculus of functions of several variables: level curves and surfaces; limits; continuity; partial derivatives; total differentials; Jacobian matrix; chain rule; implicit functions; inverse functions; curvilinear coordinates; derivatives; the Laplacian; Taylor series; extrema; Lagrange multipliers; vector and scalar fields; divergence and curl.

We will also cover some background about vectors in 3-dimensional space, e.g., dot products, cross products, lines, planes, etc.

The course material corresponds to Chapters 12, 13 and 14, and Sections 16.1 and 16.5 from the text, plus a few additional topics.

**Prerequisites:** Calculus 1501a/b or Applied Mathematics 1413, with a minimum mark of 60%, or Calculus 1301a/b with a minimum mark of 85%.

**Corequisites:** Linear Algebra 1600A/B or the former Mathematics 202a.

**Antirequisites:** Calculus 2302A/B or the former Applied Mathematics 290a. The following statement is required by Senate regulations:

“Unless you have either the requisites for this course or written special permission form your Dean to enrol in it, you may be removed from this course and it will be deleted from your record. This decision may not be appealed. You will receive no adjustment to your fees in the event that you are dropped from a course for failing to have the necessary prerequisites.”

**Homework:** Homework will be assigned biweekly, due before class on Friday.

- (1) The work that is turned in for marking must be written up neatly and legibly with attention to the requirement of grammar and style that make writing easy to read and understand. This will generally involve, at the very least, one rough draft followed by a careful rewrite.

- (2) Discussion of the assignments with classmates will be permitted but no collaboration of any kind on the write-ups will be tolerated. Students who allow copying of their work, as well as those who do the copying, will get zero for the assignment in question. In addition, other penalties may be imposed in keeping with the guidelines set out by Senate Regulations on Scholastic Offences.

**Exams:** There will be a Midterm exam on Friday, October 23, 6 PM - 9 PM in WSC 55. Mark your calendar today! The Midterm will cover the appropriate amount of material. The Final exam will be scheduled by the Registrar. The Final exam is comprehensive, but will emphasize material not already covered on the midterm.

**Senate Regulations on Scholastic Offences (Plagiarism and Cheating):** Please note the following points, which are required to be stated in this outline by Senate regulations.

“Plagiarism: Students must write their essays and assignments in their own words. Whenever students take an idea, or a passage from another author, they must acknowledge their debt both by using quotation marks where appropriate and by proper referencing such as footnotes or citations. Plagiarism is a major academic offence (see Scholastic Offence Policy in the Western Academic Calendar)”

“Plagiarism Checking: The University of Western Ontario uses software for plagiarism checking. Students may be required to submit their written work in electronic form for plagiarism checking.”

In addition, if any computer-marked multiple-choice tests and/or exams are given, software to check for unusual coincidences in answer patterns that may indicate cheating may be used.

**Evaluation:**

- (1) Homework = 20%,
- (2) Midterm = 35%,
- (3) Final examination = 45%.

**Medical Excuse Regulations:** Please note the following points, which are required to be stated in this outline.

If you are unable to meet a course requirement due to illness or other serious circumstances, you must provide valid medical or other supporting documentation to the Dean’s office as soon as possible and contact your instructor immediately. It is the student’s responsibility to make alternative arrangements with their instructor once the accommodation has been approved and the instructor has been informed. In the event of a missed final exam, a ”Recommendation of Special Examination” form must be obtained from the Dean’s Office immediately.

A student requiring academic accommodation due to illness, should use the Student Medical Certificate when visiting an off-campus medical facility or request a Record’s Release Form (located in the Dean’s Office) for visits to Student Health Services.