

Fall 2011
Calculus 2402A
Calculus with Analysis for Statistics

Description: Functions of multiple variables and their differential calculus. The gradient and the Hessian. Constrained and unconstrained optimization of scalar-valued functions of many variables: Lagrange multipliers. Multidimensional Taylor series. Integrating scalar-valued functions of several variables: Jacobian transformations. Pointwise and uniform convergence. Power series.

Instructor: Mark Reesor, MC 280, 519-661-2111 x88654, mreesor@uwo.ca

Office Hours: Wednesday & Friday 10:00-11:00, or by appointment.

Lectures: MWF 1:30-2:30 in MC 105B

WebCT: Course announcements, material and information will be posted on <http://webct.uwo.ca/>

Pre-requisite: Calculus 1301A/B or 1501A/B or Applied Mathematics 1413, in each case with a minimum mark of 55%.

It is your responsibility to ensure that the course prerequisite has been successfully completed or that special permission from the Dean has been obtained. Unless you have either the prerequisites for this course or written special permission from your Dean to enroll in it, you will 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.

Anti-requisite: Calculus 2302A/B, Calculus 2502A/B or the former Applied Mathematics 290a.

Required Text: James Stewart (2007). *Multivariable Calculus: Early Transcendentals, 7th Edition*, Brooks-Cole, ISBN 978-0-495-01172-9. (6th Edition is also fine)

Evaluation: Students will be evaluated on the basis of quizzes, one mid-term test, and a final examination. The final mark will be based on a weight of 20% for the quizzes, 30% for the mid-term test, and 50% for the final exam.

Quizzes: There will be approximately 10 quizzes (e.g., approximately weekly). Quizzes will take place during the lecture hours. The two lowest individual quiz grades will be excluded when computing the course quiz grade. There will be no make-up quizzes. See below for the policy on missed evaluations.

Mid-term Test: Wednesday, October 26, 6:30-8:30pm in HSB 236.

Calculators: Any non-programmable calculator may be used for all evaluations. No other electronic devices such as PDAs, cell phones, etc., will be allowed.

Course Content with Approximate Timing:

Multivariable Calculus: Total 9 weeks

- Differential Calculus: 2.5 weeks
- Optimization: 2 weeks
- Multidimensional Taylor series: 1 week
- Multiple Integrals: 3.5 weeks

Real Analysis: Total 3 weeks

- Convergence of infinite series: 1 week
- Convergence of functions: 1 week
- Pointwise and uniform convergence of power series: 1 week.

Medical Issues: If a student is unable to meet a course requirement due to illness or other serious circumstances, the student must provide valid medical or other supporting documentation to the Dean's office as soon as possible and contact his or her instructor immediately. It is the student's responsibility to make alternative arrangements with his or her 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. The Faculty's Policy on Accommodation for Medical Issues can be found (<https://studentservices.uwo.ca/secure/index.cfm>). This includes information on the required forms needed to obtain an accommodation. It will be the Dean's office that will determine if accommodation is warranted.

Missed Evaluations: If you have a conflict, please contact me with appropriate written documentation, if at all possible prior to the evaluation. **There will be no make-up quizzes or mid-term tests**, but if adequate documentation is received, the following accommodations will apply:

1. Quizzes – The course quiz grade will be computed using those quizzes for which accommodations have not been obtained.
2. Mid-term Test – a grade for this test will be assigned based on the relative ranking of his/her final exam grade.

Email Policy: It will be my policy not to respond to emails originating from non-UWO email accounts. Email is a good way of contacting me regarding things such as absences (email does not count as appropriate documentation), clarifications of assignment questions or solutions, making an appointment, or for very short questions that require very short answers. I will not respond to email that requires lengthy explanations on my part, please make an appointment or come to my office hours to discuss such matters with me in person.

Plagiarism and Scholastic Offences: Students must write their own essays and assignments in their own words. Whenever students take an idea, or a passage from another author, they must acknowledge their debt 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).

Scholastic offences are taken seriously and students are directed to read the appropriate policy, specifically, the definition of what constitutes a Scholastic Offence, at the following website:

http://www.uwo.ca/univsec/handbook/appeals/scholastic_discipline_undergrad.pdf

Accessibility Statement: Please contact the course instructor if you require material in an alternate format or if you require any other arrangements to make this course more accessible to you. You may also wish to contact Services for Students with Disabilities (SSD) at 661-2111 x 82147 for any specific question regarding an accommodation.

Other: Consult <http://www.stats.uwo.ca/ugstudies/mutual.htm> for the Department of Statistical and Actuarial Science's mutual expectations of students and instructors, which will apply for this course.

The web site for Registrarial Services is <http://www4.registrar.uwo.ca>