

**Fall 2016**  
**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:** Khoa Nguyen, MC 282, 519-661-2111 x88799, [knguyen@uwo.ca](mailto:knguyen@uwo.ca)

**Office Hours:** Thursday 12:00pm-1:00pm

**Lectures:** MWF 1:30pm-2:30pm in MC 105B.

**Website:** Course announcements, material and information will be posted on <https://owl.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 (2016), *Multivariable Calculus, 8<sup>th</sup> Edition*, Brooks-Cole, ISBN 978-1-305-26664-3.

**Attendance:** Attendance is not mandatory but highly recommended. All material in the lecture up to the end of the course can be considered testable. In addition, extra material covered in lectures can be asked in quizzes, tests and exams. Dates for quizzes will be announced in class. Absence from class on the day of announcement is not a valid excuse for missing those dates.

**Evaluation:** Students will be evaluated on the basis of quizzes, one mid-term test, and a final examination. The final grade 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 4 quizzes (approximately one every two weeks). Quizzes will take place during the lecture hours. There will be no make-up quizzes. See below for the policy on missed evaluations.

**Mid-term Test:** Wednesday, **October 26 2016** from 7:00pm-9:00pm. Location: TBA

**Calculators:** Only 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 10 weeks

- Differential Calculus: 3 weeks
- Optimization: 2 weeks
- Multidimensional Taylor series: 1 week
- Multiple Integrals: 4 weeks

Real Analysis: Total 2 weeks

- Convergence of infinite series: 1 week
- Convergence of functions: 0.5 week
- Pointwise and uniform convergence of power series: 0.5 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. For further information please see:

<http://www.uwo.ca/univsec/handbook/appeals/medical.pdf>

A student requiring academic accommodation due to illness, should use the Student Medical Certificate when visiting an off-campus medical facility. The form can be found here:

[https://studentservices.uwo.ca/secure/medical\\_document.pdf](https://studentservices.uwo.ca/secure/medical_document.pdf)

Or, request a Record's Release Form (located in the Dean's Office) for visits to Student Health Services.

**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.

**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/scholoff.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.

**Mental Health Statement:** Student who are in emotional/mental distress should refer to Mental Health@

Western <http://www.uwo.ca/uwocom/mentalhealth/> for a complete list of options about how to obtain help.

**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.