

Math 2210

Department of Mathematics and Statistics; Department of Physics

Course Outline

Fall 2017 Course

Professor: Daniel Ashlock MacNaughton 521 dashlock@uoguelph.ca

Course Description:

This course continues the study of multiple integrals, introducing spherical and cylindrical polar coordinates. The course also covers vector and scalar fields, including the gradient, divergence, curl and directional derivative, and their physical interpretation, as well as line integrals and the theorems of Green and Stokes. Prerequisite(s):

Prerequisites: Math 2200.

Restrictions: None.

Course Objectives: The course continues the study of multivariate calculus with an emphasis on techniques useful in the physical sciences.

Meeting Times:

2:30-3:50 T,R, Macdonald Institute, Room 106.

Course Materials

Apex Calculus Fourth Edition: <http://www.apexcalculus.com/downloads/>

Evaluation:

Homework	40%
Quizzes	20%
Midterm I	10%
Midterm II	10%
Final	20%

Quizzes and tests are closed book, closed notes, but open note. The student is permitted a single 8.5x11 sheet of paper, both sides, with any relevant notes they wish to use. Quizzes are on each Thursday *except* those where we have tests. Homework is weekly and turned in on Thursday, again except when there is a test that week.

Students are expected to attend all classes. Students are responsible for all material presented in class, both mathematics and announcements. If you miss class, get someone's notes and read them. For missed tests and quizzes you must document your inability to perform the work normally. Makeup quizzes are given during office hours, during the week after the missed quiz.

Tests Dates:

The midterms are in class on January 31st and Thursday March 7th. The final is April 18th from 7-9pm at a location that will be announced later.

Rights and Responsibilities

Check your University E-mail We mostly put stuff on courselink for this course but emergencies and big changes may get to you first via the university e-mail. If you don't check the e-mail and miss something it's officially not our fault (tm).

Keep Copies of Everything Sometimes homeworks get lost and quiz grades are not recorded correctly. Please keep copies of any assignments you hand in and keep a folder with all your work in case there is a problem.

Accommodation and use of the SAS exam center Students requiring accommodation must register with SAS to receive accommodation. Examinations in the SAS center must be booked at least a week in advance and before the 40th day of class (Friday Nov 2nd; Drop day).

Conflicts with Midterms in Other Courses. Sometimes students will have a conflict between a midterm exam in another course and either a lecture or a lab in this course. The University has a very clear policy to cover this situation: the regularly-scheduled lecture or lab holds priority. In other words, it is the responsibility of the faculty member who has scheduled the midterm exam to make special arrangements with students who have conflicts. This policy is stated explicitly in the 2012-2013 Undergraduate Calendar <http://www.uoguelph.ca/registrar/calendars/undergraduate/2012-2013/> in Section VIII—Undergraduate Degree Regulations and Procedures under the heading *Examinations* (sub-heading *Mid-Term Examinations*).

Formula Sheet. You may bring a single normal sheet of printer or notebook paper with notes and formulas on both sides to examinations including the math lab quizzes. A formula sheet will not be provided as part of the examinations.

Attendance: Illness, etc.: Attendance at the tutorial/lab periods is, of course, very important. If you miss a tutorial quiz or laboratory experiment because of illness or for compassionate reasons, please see your laboratory/tutorial instructor for possible academic consideration. If you miss the midterm exam, please see a course professor. If you miss the final exam, please see your Program Counsellor. For more details, refer to the Undergraduate Calendar.

<https://www.uoguelph.ca/registrar/calendars/undergraduate/2018-2019/>

You need the section on academic consideration, appeals, and petitions.

Collaboration: This course encourages collaborative teamwork, a skill that is an essential feature of science, and valued by most employers. Scientists and engineers work in groups as well as alone. Social interactions are critical to their success! Most good ideas grow out of discussions with colleagues. As you study together, help your partners to get over confusions, ask each other questions, and critique your assignments and lab write-ups. Teach each other. You can learn a great deal by teaching. While students are encouraged to share ideas, all material submitted for grading must be each student's own work. Plagiarism is a form of academic misconduct, and will not be tolerated.

Course Feedback: Both sponsoring departments require student assessments of all courses taught by the departments. These assessments provide essential feedback to faculty on their teaching by identifying both strengths and possible areas of improvement. In addition, annual student assessment of teaching provides part of the information used by the department's Tenure and Promotion Committee in evaluating the faculty member's contribution in the area of teaching. The department's teaching evaluation questionnaire invites student response both through numerically quantifiable data, and written student comments. In conformity with University of Guelph Faculty Policy, the department's Tenure and Promotions Committee **only considers comments signed by students (choosing "I agree" in question 14)**. Your instructor will see all signed and unsigned comments after final grades are submitted. Written student comments may also be used in support of a nomination for internal and external teaching awards. NOTE: No information will be passed on to the instructor until after the final grades have been submitted.

Electronic Recording of Classes: The electronic recording of classes is expressly forbidden without the prior consent of the instructor. This prohibition extends to all components of the course, including, but not limited to, lectures, tutorials, and lab instruction, whether conducted by the instructor or teaching assistant, or other designated person. When recordings are permitted they are solely for the use of the authorized student and may not be reproduced, or transmitted to others, without the express written consent of the instructor.

Academic Misconduct

The University of Guelph is committed to upholding the highest standards of academic integrity and it is the responsibility of all members of the University community, faculty, staff, and students to be aware of what constitutes academic misconduct and to do as much as possible to prevent academic offences from occurring. University of Guelph students have the responsibility of abiding by the University's policy on academic misconduct regardless of their location of study; faculty, staff and students have the responsibility of supporting an environment that discourages misconduct. Students need to remain aware that instructors have access to and the right to use electronic and other means of detection. Please note: Whether or not a student intended to commit academic misconduct is not relevant for a finding of guilt. Hurried or careless submission of assignments does not excuse students from responsibility for verifying the academic integrity of their work before submitting it. Students who are in any doubt as to whether an action on their part could be construed as an academic offence should consult with a faculty member or faculty advisor. The **Academic Misconduct Policy** is detailed in the Undergraduate Calendar:

<https://www.uoguelph.ca/registrar/calendars/undergraduate/2015-2016/c08/c08-amisconduct.shtml>

Accessibility

The University of Guelph is committed to creating a barrier-free environment. Providing services for students is a shared responsibility among students, faculty and administrators. This relationship is based on respect of individual rights, the dignity of the individual and the University community's shared commitment to an open and supportive learning environment. Students requiring service or accommodation, whether due to an identified, ongoing disability or a short-term disability should contact Student Accessibility Services as soon as possible. For more information, contact **519-824-4120 ext. 56208** or email sas@uoguelph.ca or see the website: <http://www.csd.uoguelph.ca/csd/>

Drop date

The last date to drop one-semester courses, without academic penalty, is Friday March 8th, 2019. For regulations and procedures for Dropping Courses, see the Academic Calendar:

<https://www.uoguelph.ca/registrar/calendars/undergraduate/2015-2016/c08/c08-drop.shtml>