Course Outline Form: MATH 2080 – Winter 2019

General Information

Course Title: **MATH 2080 –Elements of Calculus II W (3-1) [0.50]**

Course Description:
This course will expand on integration techniques, and introduce students to difference and differential equations, vectors, vector functions, and elements of calculus of two or more variables such as partial differentiation and multiple integration. The course will emphasize content relevant to analyzing biological systems, and methods will be illustrated by application to biological systems.

Prerequisite(s): 1 of IPS*1500, MATH*1080, MATH*1200
Restriction(s): IPS*1510, MATH*1210

Credit Weight: 0.5

Academic Department (or campus): Mathematics & Statistics

Campus: Guelph

Semester Offering: Winter 2019

Class Schedule and Location: LEC Mon, Wed, Fri 12:30PM - 01:20PM RICH, Room 2520	LAB Fri 02:30PM - 03:20PM ROZH, Room 103	EXAM Sat 22 April 2019 07:00PM – 09:00PM Room TBA

Instructor Information

Instructor Name: Tangi Migot
Instructor Email: tmigot@uoguelph.ca
Office location: MACN 516
Office hours: (Tentatively) Monday 2PM – 4PM and Wednesday 10AM – 12PM

GTA Information:

TBA

Course Content

Specific Learning Outcomes:

The course will teach techniques to analyze and solve problems involving integral, differential equations and their generalization with multivariate functions. This course is divided in 3 parts and cover:

1. integration techniques :
    - substitution trig inverse,
    - trig substitution,
    - integration by parts,
    - partial fractions,
    - improper integral,
    - l'Hopital's rule ;
2. differential equation :
    - first and second order linear constant coefficient homogeneous/non-homogeneous equations,
    - first and second order differential equations,
    - solve and study the stability of a specific equation ;
3. multivariate analysis (time permitting) :
    - in 3 dimensions, compute distances, equations of lines and tangent planes,
    - limit and continuity of a function over an open connected convex region,
    - compute partial derivatives,
    - triple integral and computation of volume,
    - high order derivatives and Taylor's theorem.

There will be a special emphasis on biological applications through the course.

Labs & Seminars: This course has 1 hour Lab every week on Friday. The lab will be used to train students on course material so that they can absorb more examples and problems, and so that they can be able to complete their quiz assignments and term tests.

Course Assignments and Tests:

63% Tests (6): three tests in class (50 minutes each) 14% each and three home quizzes 7% each.

For clarity, the below table refers to:

Week 1 of classes = Week of January 7, 2018

Week 12 of classes = Week of April 1, 2018

Reminder: February 18—22 – Winter Break NO CLASSES

Assigned work	Date	Location	Contribution to final mark
Home quiz 1**	**Posted online on: (end of Week 3)**	**Online quiz (Monday W4 – January 28)**	**7%**
Test* 1	**Week 4** January 28—February 1	**In class, duration 50 min**	**14%**
Home quiz 2	**Posted online on: (end of Week 6)**	**Online quiz (Monday W7 – February 25)**	**7%**

Test 2	**Week 7** February 25—March 1	**In class, duration 50 min**	**14%**
Home quiz 3	**Posted online on:** **(end of Week 10)**	**Online quiz** **(Monday W11 – March 25)**	**7%**
Test 3	**Week 11** March 11—15	**In class, duration 50 min**	**14%**

*Students who miss one term test should try to provide motivating circumstances and contact the instructor as soon as they can. Unless announced otherwise in class and in CourseLink the tests in class will be on Wednesday in the aforementioned week.

** Each homework in Table above becomes accessible the day the assignment is posted until MIDNIGHT of the day the assignment is due.

FINAL EXAM:

Please check Webadvisor on the most up-to-date information on final exam.
The final exam is 37% of the final mark.

Course Resources

Required: CourseLink at: https://courselink.uoguelph.ca/shared/login/login.html.
Reference: Calculus: Early Transcendentals. Editions 6E, 7E or 8E - all just fine. Don't confuse this with the "Single Variable" versions also available as 6E, 7E and 8E. We don't want these ones. We want ISBN-10: 1285741552 or ISBN-13: 978-1285741550.
Optional: Calculus for Biology and Medicine, 3rd. Edition Author: Claudia Neuhauser, Publisher: Pearson Publishing, © 2011.

Instructor's Notes will be provided via the Courselink site of the course. They are not mandatory and they can be used in conjunction with any other textbook treating the same topics.

Course Policies

Email communication with Instructor:

- Student emails will be replied to on a first-come basis, usually within regular working hours. If multiple emails concern an issue for the entire class, the Instructor will email the class list and/or post relevant info on the Courselink site under "NEWS".
- The Instructor will not answer homework questions by email. Homework help is available during Office Hours posted above, on a first-come basis. More details regarding additional

office hours will be communicated to the class list directly. TA's and instructor will cooperate in providing support in office hours.

- Should a student need to communicate with the Instructor on specific/personal concerns, please email the instructor 1-2 days in advance, so a specific time can be set.

Grading Policies

All marked Tests will be returned to students within 7 calendar days in class first. After that, any marked tests can be picked up anytime in office hours.

Solution and marking scheme for all assignments and tests will be uploaded on Courselink after the hand-in dates.

Any grading concerns should be submitted in writing (on a separate page, stapled on the front page of the assignment or test) to the Instructor either at end of a class or at Instructor's office after solutions and marking scheme have been posted**.** Starting from the day tests are returned, the students have 3 working days to submit their concerns.

For further grading procedures please refer to:

http://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-grds.shtml

Please note that these policies are binding unless academic consideration is given to an individual student.

University Policies

Recording of Materials

Presentations which are made in relation to course work—including lectures—cannot be recorded or copied without the permission of the presenter, whether the instructor, a classmate or guest lecturer. Material recorded with permission is restricted to use for that course unless further permission is granted.

E-mail Communication

As per university regulations, all students are required to check their <mail.uoguelph.ca> e-mail account regularly: e-mail is the official route of communication between the University and its students.

When You Cannot Meet a Course Requirement

When you find yourself unable to meet an in-course requirement because of illness or compassionate reasons, please advise the course instructor (or designated person, such as a teaching assistant) in writing, with your name, id#, and e-mail contact. See the undergraduate calendar for information on regulations and procedures for Academic Consideration.

Drop Date

Courses that are one semester long must be dropped by the end of the fortieth class day – **FRIDAY MARCH 8**; two-semester courses must be dropped by the last day of the add period in the second semester. The regulations and procedures for Dropping Courses are available in the Undergraduate Calendar.

Copies of out-of-class assignments

Keep paper and/or other reliable back-up copies of all out-of-class assignments: you may be asked to resubmit work at any time.

Accessibility

The University promotes the full participation of students who experience disabilities in their academic programs. To that end, the provision of academic accommodation is a shared responsibility between the University and the student.

When accommodations are needed, the student is required to first register with Student Accessibility Services (SAS). Documentation to substantiate the existence of a disability is required, however, interim accommodations may be possible while that process is underway.

Accommodations are available for both permanent and temporary disabilities. It should be noted that common illnesses such as a cold or the flu do not constitute a disability.

Use of the SAS Exam Centre requires students to book their exams at least 7 days in advance, and not later than the 40th Class Day.

More information: www.uoguelph.ca/sas

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.

Resources

The Academic Calendars are the source of information about the University of Guelph's procedures, policies and regulations which apply to undergraduate, graduate and diploma programs.

Week 1*:* January 7—11	
Week 2: January 14—18	
Week 3: January 21—25	
Week 4: January 28—February 1	Quiz & Test 1 Week 4. Usually covers all material from weeks 1 - 3. BUT the instructor will advise with certainty.
Week 5: February 4—8	
Week 6: February 11—15	
February 18—22 Winter Break --NO CLASSES SCHEDULED THIS WEEK Holiday	
Week 7: February 25—March 1	Quiz & Test 2 Week 7. Usually covers all material from weeks 4 - 6. BUT the instructor will advise with certainty.
Week 8: March 4—8	
Week 9: March 11—15	
Week 10: March 18—22	
Week 11: March 25—29	Quiz & Test 3 Week 11. Usually covers all material from weeks 7 - 10. BUT the instructor will advise with certainty.
Week 12: April 1—5	
End of class April 5	
Week 13: April 8—12	
Week 14: April 15—19 (Good Friday April 19)	
Week 15: Monday April 22	Final exam from 7pm to 9pm