The University of Western Ontario
London, Ontario Canada
Department of Applied Mathematics
NMM 2270A
Course Outline 2022

Instructor:

Dr. A.B. MacIsaac (Office P&A 235) allanb@uwo.ca

Tutorials: (subject to changes in TA's)

004 TUT		F	12:30 PM	1:30 PM	FNB-1250	V. Pinnegar/S.Silber
005 TUT		F	12:30 PM	1:30 PM	FNB-3210	A.Henry
006 TUT		F	10:30 AM	11:30 AM	FNB-1250	V. Pinnegar/S.Silber
008 TUT	M		11:30 AM	12:30 PM	FNB-1240	K.Wisniewski/M. Mostann
009 TUT	M		10:30 AM	11:30 AM	FNB-3210	K.Wisniewski/M. Mostann
011 TUT	M		11:30 AM	12:30 PM	FNB-3210	C. Gregg
012 TUT		F	10:30 AM	11:30 AM	FNB-3210	C. Tugulan/C. Gregg

Office Hours:

MacIsaac: Tuesday & Thursday 2pm-4pm (Thursday will include option to use Zoom)

Text:
Advanced Engineering Mathematics, 7th edition, Zill (required) (No need to take book to class.)
May also use Advanced Engineering Mathematics, 6th edition, Zill

Lectures: Lectures have been posted on OWL under Course Content

Course Description:
This (half) course is designed to provide all second year engineering students with an introduction to the field of differential equations, with special emphasis on methods and applications that are most useful in the engineering sciences. Topics include first order differential equations of various types, higher order differential equations and methods of solving them, initial and boundary value problems, applications to mass-spring systems and electric RLC circuits, Laplace transform and its use for solving differential equations, systems of linear differential equations, orthogonal functions and Fourier series.

Learning Outcomes:
By the end of the course the student will be able to
• Solve first order linear and non-linear differential equations.
• Solve second order or higher order linear differential equations.
• Solve linear order differential equations with constant coefficients with initial condition(s) by using Laplace transform.
• Construct a physical/engineering problem in the language of differential equations and solve it.
• Solve a system of differential equations by using Laplace transform.
• Define orthogonal functions and compute their inner product.
• Express a periodic function by using Fourier series.

Method of Evaluation:
35% biweekly quizzes (Long Answer)
25% Midterm Exam Tentatively Oct. 24th (Multiple Choice)
40% Final Exam (TBD) (Multiple Choice)
 "The Department of Physics and Astronomy may, in exceptional cases, adjust the final course marks in order to conform to Departmental policy."

Dates for evaluations are posted in the Course Calendar on Sakai/OWL.

Attendance: All material in the lectures up to the end of the course can be considered testable. In addition, extra material covered in lectures can be tested in quizzes and exams.

Addendum to all Course Outlines:

If you are unable to meet a course requirement due to illness or other serious circumstances, you must provide valid medical or supporting documentation to the Academic Counseling Office of your home faculty as soon as possible. If you are a Science student, the Academic Counseling Office of the Faculty of Science is located in NCB 280, and can be contacted at scibmsac@uwo.ca. For further information, please consult the university's medical illness policy at http://www.uwo.ca/univsec/pdf/academic_policies/appeals/accommodation_medical.pdf

If you miss the Final Exam, please contact your faculty's Academic Counseling Office as soon as you are able to do so. They will assess your eligibility to write the Special Exam (the name given by the university to a makeup Final Exam). You may also be eligible to write the Special Exam if you are in a "Multiple Exam Situation" (see http://www.registrar.uwo.ca/examinations/exam_schedule.html) Please contact the course instructor if you require lecture or printed material in an alternate format or if any other arrangements can make this course more accessible to you.

You may also wish to contact Student Accessibility Services (SAS) at 661-2147 if you have any questions regarding accommodations. The policy on Accommodation for Students with Disabilities can be found here:http://www.uwo.ca/univsec/pdf/academic_policies/appeal/accommodation_disabilities.pdf

The policy on Accommodation for Religious Holidays can be found here:http://www.uwo.ca/univsec/pdf/academic_policies/appeals/accommodation_religious.pdf

Learning-skills counselors at the Student Development Centre (http://www.sdc.uwo.ca) are ready to help you improve your learning skills. They offer presentations on strategies for improving time management, multiple-choice exam preparation/writing, textbook reading, and more. Individual support is offered throughout the Fall/Winter terms in the drop-in Learning Help Centre, and year round through individual counseling.

Students who are in emotional/mental distress should refer to Mental Health@Western (http://www.health.uwo.ca/mental_health) for a complete list of options about how to obtain help. Additional student-run support services are offered by the USC, http://westernusc.ca/services.

Examination conflicts

A student with examinations having flexible submission times (e.g., where one or more examination is a take-home examination) cannot request alternative arrangements unless a conflict cannot be avoided by rescheduling writing the exam to a different time within the window specified by the instructor. This applies to direct conflicts as well as "heavy load" conflicts (e.g., three exams within a 23-hour period). The student should discuss any concerns about a potential conflict and/or request accommodation with their academic counselling unit prior to the deadline to drop a course without academic penalty.

In the case of online examinations, an "Examination Conflict Room," which may be assigned when a student is scheduled to write two proctored exams concurrently, will be interpreted as arrangements for continuous proctoring.