The University of Western Ontario

Applied Mathematics 2415

Applied Mathematical Methods for Electrical and Software Engineering I

Course Outline

2013-2014

Instructor

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Textbook

D.G. Zill and W.S. Wright, Advanced Engineering Mathematics 5th Edition (Jones and Bartlett)
Adams and Essex, Calculus - a Complete Course, 8th Edition (Addison Wesley)

Lecture Timetable

Mondays, Wednesdays	11:30am – 12:30pm	3M-3250
Fridays	12:30pm – 1:30pm	SEB 1200

Labs

Note: you may not switch lab sessions without permission.

002/006	Mondays	2:30pm – 4:00pm	HSB-14
003/007	Wednesdays	5:30pm – 7:00pm	SSC-1032
004	Fridays	2:30pm – 4:00pm	SSC-1032

Course Content

This is a course for electrical, computer and software engineers that combines analytic treatment of ordinary differential equations with multiple variable calculus and an introduction to MATLAB and Maple.

Topics to be covered are:

1. Introduction to MATLAB and Maple(to be covered in the lab sessions)
2. First order differential equations.
3. Higher order differential equations.
4. Systems of differential equations.
5. Laplace transforms.
6. Fourier series and transforms.
7. Power series methods.
8. Multiple integration, vector fields.
9. Vector calculus.

Evaluation

Weights: Lab submissions and quizzes: 20%, Midterm: 40%, Final exam: 40%.

Homework: The best way to learn is to solve as many problems as possible. Please note that historically the majority of the problems on the midterm and final exams have come from the list of suggested exercises.

Attendance: Some material taught in lecture or in the lab sessions may not be in any of the textbooks, therefore attendance of lectures and lab sessions is expected. You must attend the lab section for which you are registered, unless permission has been granted by your instructor.

Laboratories: A laboratory will be an experiment or collection of procedures using MATLAB or Maple, leading to a report to be submitted and graded. As most of these submissions will be electronic, students should keep their own personal back-up copies of submitted assignments.

Make-ups: if you have a justified absence for a lab, quiz or MATLAB test, your mark for the other assignments will be prorated. No make-up labs, quizzes or MATLAB tests will be administered. If you are ill at the time of the midterm exam, your final exam will be prorated to 80%. There will be no make-up midterm exam given. If this happens at the time of the final exam, the make-up examination will be held concurrently with the final exam for AM2415 (Intersession) at the end of the following June. Please read below for further details.

Addendum to all Applied Mathematics Course Outlines:

If you are unable to meet a course requirement due to illness or other serious circumstances, you must provide valid medical or other supporting documentation to your faculty's Dean's Office as soon as possible and contact your instructor immediately. It is the student's responsibility to make alternative arrangements with their 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 your faculty's Dean's Office immediately.
For further information please see: http://studentservices.uwo.ca/secure/index.cfm

A student requiring academic accommodation due to illness, should use the Student Medical Certificate when visiting an off-campus medical facility or request a Records Release Form (located in the Dean's Office) for visits to Student Health Services. The form can be found here: https://studentservices.uwo.ca/secure/medical_document.pdf

Mental Health Statement:

Students 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.

Accessibility:

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 Services for Students with Disabilities (SSD) at 661-2111 ext. 82147 if you have questions regarding accommodation.

Support Services:

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.

Additional student-run support services are offered by the USC, http://westernusc.ca/services.

The website for Registrarial Services is http://www.registrar.uwo.ca.