

THE UNIVERSITY OF WESTERN ONTARIO (WESTERN UNIVERSITY)
LONDON CANADA
DEPARTMENT OF APPLIED MATHEMATICS
Applied Mathematics 4817b

January-April 2015

Instructor: V.A. Miransky, MC 271, tel: 519-661-2111 ext. 88708, email: vmiransk@uwo.ca
Office Hours: By appointment

Classes: MWF 9:30-10:30am, SSC3006

Textbook: PDEs of Applied Mathematics, E. Zauderer, 3rd edition
(Used copies may be available from students who took this course last year.)
Backup text: Elementary PDEs, R. Haberman, 4th edition (text in AM315)

Prerequisites: Applied Mathematics 3815A/B

Corequisites: Applied Mathematics 3811A/B

Course outline:

Integral Transforms and their Applications

- Review: Sturm-Liouville problem (secs. 4.1-4.3)
- Green's functions for ODEs
- Finite Fourier transforms (sec. 4.6)
- Fourier transforms (sec. 5.2)
- Fourier sine and cosine transforms (sec. 5.3)
- Laplace transforms (sec. 5.6)

Asymptotic methods (if time permits)

- Definitions and examples of asymptotic expansions
- Operations with asymptotic expansions
- Asymptotic expansions of integrals: method of steepest descents

Evaluation of student performance:

- Quizzes: 40%. 3 times during the term.
Questions will be chosen from the assigned problems.
Each quiz is 50 minutes.
- Exam: 60 %. (April Exam period)

Wep page address: <https://owl.uwo.ca>

Policy on calculators and other electronic devices:

The use of calculators and other electronic devices will not be permitted for the midterm test and the final examination.

Statement on academic offences:

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 Web site:
http://www.uwo.ca/univsec/pdf/academic_policies/appeals/scholastic_discipline_undergrad.pdf
Computer-marked multiple-choice tests and/or exams may be subject to submission for similarity review by software that will check for unusual coincidences in answer patterns that may indicate cheating.

Medical excuse regulations:

If you are unable to meet a course requirement worth 10% or more of your course grade, due to illness or other serious circumstances, you must provide valid medical or other supporting documentation to your home faculty Dean's Office as soon as possible and contact your 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 as soon as possible.

The Policy on Accommodation for Medical Illness is available at
<https://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 Record's Release Form (located in the Dean's Office) for visits to Student Health Services. The form can be found here:
http://studentservices.uwo.ca/secure/medical_document.pdf

Medical 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 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 questions regarding an accommodation.