

THE UNIVERSITY OF WESTERN ONTARIO  
London Ontario

Department of Applied Mathematics

**AM 3413a/3415a Applied Mathematics for Engineers  
(Electrical and Mechanical)**

Fall 2018

Instructor: Professor C. Essex, MC 270

AM 3415 (Electrical) MWF 11:30-12:30, SH 3345

AM 3413 (Mechanical) MWF 12:30-13:30, SEB 2200

1. **Out-of-Class Contacts:**

E. Kianiharchegani, ekianiha@uwo.ca

A.C. Camargos Couto, acamarg@uwo.ca

Lab/Tutorial/Help Centre TBA

2. **Course Content:** An introduction to Partial Differential Equations (PDEs) with the essentials of functions of a complex variable. The specific topics will be: Sturm-Liouville Theory, General Orthogonal Series Expansions, Boundary Value Problems, Integral Transforms and PDE's, Functions of a Complex Variable, Poles, Series, and Residues, Conformal Mapping.

3. **Text:** *Advanced Engineering Mathematics*, D.G. Zill, Sixth Edition (2018), Jones & Bartlett Learning, ISBN: 978-1-284-10590-2. The Fifth edition is not supported.

4. **Evaluation:**

1.  $x\%$  Competitive Team Problem Sets I: Concludes November 1.

$y\%$  Competitive Team Problem Sets II: Begins November 2

$x + y = 40$ ,  $x \geq 15$ ,  $5 < y \leq 25$  ( $x$  and  $y$  will be set after November 2)

2. **60%** Final (December 2018, TBA):

5. **General:** Class attendance is **mandatory!** Problem sets from the text will be assigned in class, and nowhere else. These will suggest subsequent evaluated problem sets, which will be assigned through OWL, and may also comprise parts of the final exam. The evaluated sets will assess individual competence directly and community competence at deploying resources to get best results indirectly. Although problem sets will be scored directly for individuals, competitive bonus points (TBD) will be assessed for best team performance: AM 3413 vs AM 3415 (i.e. Mechanicals vs Electricals). In contrast, the final will evaluate individual knowledge and ability, without external help or aids. Missing an evaluation will result in a grade of zero, unless permission is granted from the Associate Dean of Engineering. If permission is granted, a prorated mark will be assigned. There will be **no makeups** for missed term assessments.

6. It is the desire of greater powers that the following information be on all course outlines:

The UWO Senate Academic Handbook has specified that the following points should be added to all course outlines: 1. **Plagiarism:** Students must write their essays and assignments in their own words. Whenever students take an idea, or a passage from another author, they must acknowledge their debt both by using quotation marks where appropriate and by proper referencing such as footnotes or citations. Plagiarism is a major academic offence (see Scholastic Offence Policy in the Western Academic Calendar). 2. **Plagiarism Checking:** The University of Western Ontario uses software for plagiarism checking. Students may be required to submit their written work and programs in electronic form for plagiarism checking. 3. **Prerequisites for a course:** Unless you have either the requisites for this course or written special permission from your Dean to enroll in it, you will be removed from this course and it will be deleted from your record. This decision may not be appealed. You will receive no adjustment to your fees in the event that you are dropped from a course for failing to have the necessary prerequisites. 4. **If computer-marked multiple-choice tests and/or exams are given:** Use may be made of software to check for unusual coincidences in answer patterns that may indicate cheating. 5. **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 Deans 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 Deans Office immediately. For further information please see: <http://www.uwo.ca/univsec/handbook/appeals/medical.pdf> 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 Deans Office) for visits to Student Health Services. The form can be found here: [https://studentservices.uwo.ca/secure/medical\\_document.pdf](https://studentservices.uwo.ca/secure/medical_document.pdf) 6. Please contact the course instructor if you require the material in an alternate format or for other arrangements to make this course more accessible for you. You may also contact services for students with disabilities at X 8217.