2015/2016 - Term 2

MECH/MATH 358
ENGINEERING ANALYSIS

Instructor: Professor Gwynn Elfring
Lectures: T Th 11am-12:30pm Mathematics 100
Labs: M 9-11am M W F 11am-1pm PACE Lab ICCT X060
Office hours: Wednesday 10am-12pm ICCT 181
Final Exam: TBA TBA TBA
Course web site: Connect
Course discussion: http://piazza.com

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Academic prerequisites: All of MECH 224, MECH 225.

Textbooks (Optional):
Applied Numerical Methods w/ Matlab for Scientists and Engineers, Steven C. Chapra, McGraw Hill.

Course Goals:
To learn the mathematical techniques to solve typical engineering differential equations analytically and numerically.

Course Topics:
Review of ODE’s and linear algebra, Fourier series; boundary-value problems; numerical methods; partial differential equations; heat, wave, Laplace, Poisson, and wave equations. Applications to mechanical engineering and practical computing emphasized.

Course Evaluation (tentative):
1. Five problem sets (30% of course grade); All problems may or may not be graded
2. Two midterm exams (30% of course grade);
3. Final exam (40% of course grade);

Revised Monday, January 4, 2016
Detailed course schedule (tentative):

[1] Tuesday, January 12   HW1 posted
[2] Thursday, January 21  HW1 due
[3] Tuesday, January 26   HW2 posted
[4] Thursday, February 4  HW2 due
[5] Thursday, February 11 Midterm 1
[7] Tuesday, February 23  HW3 posted
[8] Thursday, March 3     HW3 due
[9] Tuesday, March 8      HW4 posted
[10] Thursday, March 17    HW4 due
[12] Tuesday, March 29     HW5 posted
[13] Thursday, April 7     HW5 due

Course policy

(a) No late homework will be accepted. Homework assignments due at the start of class on the due date. Graded assignments will be available for pickup outside of ICCS 181 roughly 1 week after submission. Solutions to the homework assignments will be posted online.

(b) Answer only will not receive full credit. You must justify clearly all requisite steps required to obtain an answer. You should think of it as trying to explain to the marker how you solve the problem.

(c) Re-grading of HWs: You are allowed to ask for a regrade if you think we owe you some points but must be done the same week as they are returned. All regrading requests have to be made in writing on a piece of paper attached to the problem set, and submitted in class within the week it was returned. The regrade requests will be returned to you in the HW box.

(d) Re-grading of midterm exams: Graded midterm exams will be returned during class. You will be allowed to take a look at it and ask for a regrade before leaving class. Once you leave with the class, no regrading will be accepted. All regrading requests have to be made in writing on a separate piece of paper attached to the exam.

(e) All exams are no notes, no books and no calculators. This may seem bizarre, but you won’t need them. The solution to the midterm exams will be posted on the class website, and the graded midterms will be available in class the following week.

(f) We will offer a review session at the end of the course before the final exam.

(g) There will be no make-up exams (‘midterms’ or final).

(h) Plagiarism and cheating will not be allowed. We will follow UBC’s policy on academic misconduct as presented in the UBC calendar. Do not cheat. All work submitted must be entirely your own.

(i) I may not reply to emails. If you have a homework question, come to office hours or go to the discussion board. If you do send email, include MECH 358 in the subject.