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 ICCS X060
Office hours:	Wednesday	10am-12pm	ICCS 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*.
Elementary Differential Equations and Boundary Value Problems, W. E. Boyce & R.C. DiPrima, *John Wiley & Sons*.
Applied Partial Differential Equations, Richard Haberman, *Pearson*.

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);

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**
[6]	*Feb 15-19*	*Reading Break*
[7]	Tuesday, February 23	HW3 posted
[8]	Thursday, March 3	HW3 due
[9]	Tuesday, March 8	HW4 posted
[10]	Thursday, March 17	HW4 due
[11]	Thursday, March 24	**Midterm 2**
[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.