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Winter 2006

MAE200B: Engineering Analysis II

aka.

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$$\nabla^2 \mathbf{u} + \mathbf{f} = 0$$
$$\frac{\partial \mathbf{u}}{\partial \mathbf{t}} - \nabla^2 \mathbf{u} = 0$$
$$\frac{\partial^2 \mathbf{u}}{\partial \mathbf{t}^2} - \mathbf{c}^2 \nabla^2 \mathbf{u} = 0$$
$$\frac{\partial \mathbf{u}}{\partial \mathbf{t}} + \frac{\partial \mathbf{f}}{\partial \mathbf{x}} = 0$$

Lectures:	4:00-5:50pm Mon. Wed., SH174.
	Make-up classes: 4:00-5:50pm Fri. Jan. 6 and Fri. Jan. 13, ICF 101.
Discussions:	11:00-11:50am Mon., CS 180.
Instructor:	Feng Liu, Professor
	Telephone: 824-1750, e-mail: fliu@uci.edu
	Office Hours: 2:00-4:00pm Mon. Wed. or by appointment, EG3201.
T.A.:	Mr. Fazlul Zubair
	E-mail: fzubair@uci.edu
	Office Hours: 12:00-1:30pm, Wed. Thur., EG3106.
Course Web:	http://fliu.eng.uci.edu/mae200b
Prerequisite:	MAE200A or consent of instructor.
Holidays:	Monday Jan. 16 and Monday Feb. 20.
Exams:	**Midterm**: TBA.
	Final: 4:00-6:00pm Wed. March 22, ICF 101.
Course Grading:	Homework: 30%; Midterm: 30%; Final: 40%.
<u>**Special Notes:**</u>	No classes on Mon. Jan. 9 and Wed. Jan. 11.
	No discussion session on Monday Jan. 9.
	Make-up classes: 4:00-5:50pm, Fri. Jan. 6 and Fri. Jan. 13, ICF 101.

Catalog Course Description:

Review of ordinary differential equations, including Bessel and Legendre functions. Partial differential equations, including the diffusion equation, Laplace's equation, and the wave equation. Fourier series, Fourier and Laplace transforms and their applications. Introduction to functions of a complex variable and conformal mapping.

Textbook/References:

Lectures will be largely based on instructor's personal notes and Ref. 1. Ref. 2 provides easy reading and a minimum level that the class will require.

1. R. Haberman *Applied Partial Differential Equations,* 4th edition, Prentice Hall, 2004.

2. Stanley J. Farlow, *Partial Differential Equations for Scientists and Engineers,* Dover, 1993.

3. Michael D. Greeberg, *Advanced Engineering Mathematics,* 2nd edition, Prentice-Hall, 1998.

4. James Ward Brown and Ruel v. Churchill, *Fourier Series and Bounary Value Problems*, 6th edition, McGraw Hill, 2001

Homework Assignments:

Weekly homework assignments will be posted at the course WEB site on Fridays. Completed homeworks must be turned in either in class or to the TA **before 5:00pm on the following Friday**. **No late homeworks are accepted**. Homework solution will be posted on the web. Graded homeworks will be left in a box outside the TA's office on the Monday after they are turned in.