

**COMMONWEALTH GRADUATE ENGINEERING PROGRAM
DISTANCE LEARNING COURSE PLANNING SHEET
UNIVERSITY OF VIRGINIA**

Course: MAE 6410 – Engineering Mathematics I
Semester: Fall 2009
Instructor: Houston G. Wood
Phone No.: 434-924-6297
Office Address: University of Virginia; Dept. of Mechanical and Aerospace Engineering;
MEC 329; Charlottesville, VA 22903

E-Mail Address: hwood@virginia.edu

Textbook(s): (Student to purchase)

Applied Partial Differential Equations, by Richard Haverman (4th ed.)
Advanced Engineering Mathematics, by Michael D. Greenberg (2nd ed.)

Reference(s): Limit 4

Computer Needs:

Computer Capability:

Software required:
Provided?

Other: Access to Internet; UVA email account to access Collab

NOTE: The Collab site will be set up as APMA-MAE 6410

See attached syllabus.

MAE 6410: Engineering Mathematics I
Fall 2009
School of Engineering and Applied Science
University of Virginia

Instructor: H. G. Wood, MEC 329, Tel. 434-924-6297, Fax 982-2037, hwood@virginia.edu

GTA: TBD

Class Times: 17:00 – 18:15 MW Room: Thornton Hall A119

Texts: *Applied Partial Differential Equations* by Richard Haberman (4th ed.)
Advanced Engineering Mathematics, by Michael D. Greenberg (2nd ed.)

Prerequisite: Graduate standing and APMA 111, 212 and 213 or equivalents.

Goals: Understanding of partial differential equations governing physical phenomena in science and engineering. Solution of partial differential equations by separation of variables, superposition, Fourier series, variation of parameters, d'Alembert's solution. Eigenfunction expansion techniques for non-homogeneous boundary value problems. Particular focus on the heat, potential, and wave equations in rectangular and polar coordinates.

Course Coverage: The course will review selected concepts and techniques in the Greenberg text's Part I – Ordinary Differential Equations, Part II – Linear Algebra, and Part III – Scalar and Vector Field Theory. The course will focus upon and cover important fundamental concepts and techniques in the Greenberg text's Part IV – Fourier Methods and Partial Differential Equations and in the Haberman text's Chapters 1 – 8 centered on applied partial differential equations.

Homework and tests: Homework will be assigned regularly, and each student is expected to work all of the problems. Homework is not pledged. Each student should strive to solve the problems, but working with peers is a good way to learn. There will be three tests.

Grading Policy: The homework and each test will count 15%, and the final examination will count 40%.

Final Exam: Monday, December 14, 15:15 – 18:15

Office Hours: TBD

June 22, 2009