Math 501: Engineering Mathematics Fall 2009 WPI

Professor: Suzanne L. Weekes

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<th>Dept. of Mathematical Sciences</th>
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Lectures: Tuesdays 5:30-8:20 Stratton Hall 308

Office Hours: Mondays, Thursdays 1:00 – 2:30 Stratton Hall 109B


Web Page: Information about the course will be maintained on the course web page http://www.wpi.edu/~sweekes/MA501

Course Overview:
This course develops mathematical techniques used in the engineering disciplines. Preliminary concepts will be reviewed as necessary, including vector spaces, matrices and eigenvalues. The principal topics covered will include vector calculus, Fourier transforms, fast Fourier transforms and Laplace transformations. Applications of these techniques for the solution of boundary value and initial value problems will be given. The problems treated and solved in this course are typical of those seen in applications and include problems of heat conduction, mechanical vibrations and wave propagation.

A knowledge of ordinary differential equations, linear algebra and multivariable calculus is assumed.

We will focus on chapters 4, 9, and 12 of the text:
Chapter 4: Laplace Transforms
Chapter 9: Vector Calculus
Chapter 12: Fourier Series

Grading: Homework 50%
Exam 1 20%
Exam 2 20%
Projects 10%

Homework: There will be a homework assignment due at the beginning of each class. These assignments will be posted on the course website and generally will not be handed out. Selected problems will be graded. You may discuss homework problems with one another, but you must write up solutions independently.

Late assignments without prior consent of the professor will not be accepted and will receive a grade of 0. Feel free to turn in homework early, if you know that you will not be able to attend a class session. Extensions will be granted only in the event of unforeseen emergencies or extenuating situations that you discuss with the professor well in advance.
Make-up Exam Policy:
Make-up exams will only be allowed in the event of a documented emergency. You are responsible for avoiding conflicts with the exams.

Academic Integrity:
Please read the Student Guide to Academic Integrity at WPI http://www.wpi.edu/Pubs/Policies/Honesty/Students/ and all its pages. For example, the link ``What Constitutes Academic Dishonesty?'' gives some examples of academic dishonesty; i.e. acts that interfere with the process of evaluation by misrepresentation of the relation between the work being evaluated (or the resulting evaluation) and the student's actual state of knowledge. Each student is responsible for familiarizing himself/herself with academic integrity issues and policies at WPI. All suspected cases of dishonesty will be fully investigated.

Ask the professor if you are in any way unsure whether your proposed actions/collaborations will be considered academically honest or not.

Students with Disabilities:
Students with disabilities who believe that they may need accommodations in this class are encouraged to contact the Disability Services Office (DSO), as soon as possible to ensure that such accommodations are implemented in a timely fashion. The DSO is located in Daniels Hall, (508) 831-5235. If you are eligible for course adaptations or accommodations because of a disability (whether or not you choose to use these accommodations), or if you have medical information that I should know about please make an appointment with me immediately.

This syllabus is subject to change at the instructor's discretion