

## **MEEN5900.707: Mathematical Methods Spring 2008**

### **Instructor**

Dr. Zhi-Gang Feng  
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### **Time and Place**

T and Thu: 9:30-10:50am, NTRP Room B142.

### **Office Hours**

M: 12:00 pm-5:00pm; Thu: 3:30 am-5:30 pm;  
and by appointment if you cannot make use of  
the office hours.

### **Course description**

An introduction of advanced mathematical methods used in engineering such as vector calculus, Fourier analysis, integral transforms, ordinary differential equations, partial differential equations. These topics are introduced in the context of specific engineering problems.

### **Text**

Michael D. Greenberg, Advanced Engineering Mathematics, 2<sup>nd</sup> Edition, Prentice Hall.

### **Course Objectives**

This course is intended to provide skill to apply fundamental mathematical methods to solve engineering problems analytically.

### **Course Outline**

1. Vector algebra
2. Coordinate systems
3. Vector calculus
4. Fourier and Laplace transforms
5. Ordinary differential equations
6. Partial differential equations
7. Advanced topics in linear algebra (if time permitted).

### **Attendance Policy**

Class attendance will contribute significantly to success in this course. All students are required to attend all classes and examination sessions. It is the student's responsibility to understand the material covered in the class during any absence.

### **Homework (35%)**

Homework problems will be assigned at the end of each lecture. Homework will be collected once a week at the beginning of the Tuesday class. You are encouraged to work together with others, but *copying homework is forbidden and will be dealt seriously following university's policy.*

### **Quiz (15%)**

There will be a minimum of three unannounced quizzes during the semester. The quizzes will be given in the first 20 minutes of the class. If you are not in the class during the quiz (unless you can present a University approved excuse), you will receive a grade of 0 on that quiz.

### **In-Class Midterm Test (25%)**

There will be one mid-term test.

### **Final Exam (25%)**

Final exam will be comprehensive and cover all the materials learned in the class.

### **Grading scale**

85 and above: A; 75-84: B; 60-74: C; below 60: D.

### **Other Policies**

1. It is the responsibility of students with certified disabilities to provide the instructor with the appropriate documentations;
2. Dishonesty will be handled as per the school policy;
3. Any questions regarding the grading discrepancy should be brought up a week after receiving returning work.