Fall 2015

ME 5331-005 and -006 – Engineering Analysis

Instructor: Dr. Dora Musielak

Class Time:	M-W 4:00 p.m. – 5:20 p.m.
Class Room:	NH 203
Professor's Office:	132 B Science Hall
Office Hours:	3:00 pm - 4:00 pm, Monday and Wednesday, or by appointment
TA:	TBA
TA Office Hours:	TBA

ME5331: The main emphasis of this course is to study Ordinary Differential Equations, Field Theory, and Fourier Methods. Prerequisite**:** Undergraduate degree in engineering, physics, or mathematics.

Text Book: Advanced Engineering Mathematics, M. D. Greenberg, Prentice-Hall.

Course Overview:

Part I: Ordinary Differential Equations

- Chapter 2 - Equations of First Order
- Chapter 3 - Linear Differential Equations of Second Order and Higher
- Chapter 5 - Laplace Transforms

Part III: Scalar and Vector Field Theory

- Chapter 13 - Differential Calculus of Functions of Several Variables
- Chapter 14 - Vectors in 3-Space
- Chapter 15 - Curves, Surfaces, and Volumes
- Chapter 16 - Scalar and Vector Field Theory

Part IV: Fourier Methods

- Chapter 17 - Fourier Series, Fourier Integral, Fourier Transform

EXAMINATIONS: There will be three examinations:

- Two Midterm Exams: **October 7**, and **November 9, 2015**
- One Final Exam: **December 14, 2015**

Final Exam: The final exam is comprehensive (i.e., cover all course material) and mandatory.

MAKE-UP EXAMINATION POLICY: If you miss a midterm exam due to hospitalization, death in the family, a major illness, or another eventuality that can be verified with official documentation, please ***contact me immediately*** at dmusielak@uta.edu. I will consider the circumstances and determine how and when to make-up the test.

NO TEXT MESSAGING, NO TWEETS, NO PHOTO-TAKING DURING CLASS!

Class Rules:

- During the lecture time, all attention should be focused on the instruction/lecture.
- Please turn off your cell-phones, ipods/ipads /other e-communication devices. If you need to make or take a call, please step outside the classroom.
- No texting/no tweeting, and no photo-taking during the lecture.
- During exams, students are not allowed to talk or communicate in any way with each other. Please refer to the UTA Statement of Ethics, Professionalism, and Conduct.

Grading: Final course grade = Mid-Term Exam 1 (30%) + Mid-Term Exam 2 (29%) + Homework (11%) + Final Exam (30%).

I will not curve the grades! Letter grades will be assigned in the ranges below:

A: 90 – 100
B: 80 – 89
C: 70 – 79
D: 60 – 69
F: 0 – 59

Homework: I will assign problems every Wednesday and require that you solve and submit them the following Wednesday. No assignment will be accepted after the due date. This is a very important activity outside the classroom to help you learn the concepts taught in class and to prepare for exams. If you need hints for challenging problems, email me and/or ask the TA.

Attendance: Class Roll will be taken daily**.** I strongly encourage you to be present in *all* classes. I expect each and all graduate students to be active participants in learning, i.e., *ask and answer questions*! Please arrive on time for class. Late arrivals are distracting and disrespectful to your classmates and to me.

Important Remarks

A university graduate classroom provides an ambience that traditionally is significantly different than the ambience found in undergraduate courses. In graduate level classes, the burden of the educational effort is on the shoulders of the student—the instructor conveys information and answers questions, but it *is the student's responsibility to become an active learner*.

Also, the amount of outside work (i.e., homework, research) done for a class will be significant. As a minimum, for every hour (i.e., standard 50 minute period) spent in the classroom, a graduate student should plan on spending at least two hours outside the classroom learning the subject matter of the course through additional reading and solving the problems in the weekly assignments.

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Smart engineers exhibit the highest standards of honesty and integrity. Be proud that you are one!