ENGR3300.005 Advanced Engineering Mathematics
Fall 2017
Classes: Fridays 1:00 pm - 3:45 pm Room: GR 3.606
Lab: Fridays 5:00 pm - 5:50 pm Room: FO 1.502

Professor Contact Information
Dr. Ricardo Saad
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Mr. Hussein Metwaly Saad
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Ms. Abhijitha Tangella
Sessions: Mondays 2-250 pm MC 1502AB and Thursdays 12:12:50 pm, MC 1.501CD
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Course Pre-requisites, Co-requisites, and/or Other Restrictions
Prerequisites: (MATH 2415 or MATH 2419) and ENGR 2300
Prerequisite or Corequisite: MATH 2420.

Course Description
Survey of advanced mathematics topics needed in the study of engineering. Topics include use of complex numbers, properties of complex-valued functions, scalar and vector fields, introduction to partial differential equations, and Fourier series. Examples are provided from electromagnetics, fluid mechanics, thermodynamics, and engineered systems. This course includes a required laboratory.

Student Learning Objectives/Outcomes
1. Demonstrate the ability to solve advanced engineering problems formulated in physical space and time
2. Demonstrate the ability to solve advanced engineering problems formulated in frequency space and the complex domain.
3. Demonstrate the ability to formulate an engineering problem in terms of advanced engineering mathematics."
4. Demonstrate the ability to use automatic computation to evaluate the solutions to problems in advanced engineering mathematics."

Required Textbooks and Materials
1. Erwin Kreyszig, *Advanced Engineering Mathematics*, 10th Edition (Wiley, 2011).
2. Class-notes will be posted in eLearning. Students must have access to eLearning.

Assignments & Academic Calendar

1. Vector Differential Calculus
2. Vector Integral Calculus
3. Fourier Analysis
4. Partial Differential Equations
5. Complex Analysis
6. Complex Integration
7. Power Series, Taylor Series
8. Laurent Series, Residues

Grading Policy

Exam 1:	25%
Exam 2:	30%
Exam 3:	30%
Assignments/Quizzes/Re-write class notes:	10%
Lab Assignments	5%

Grades are final one week after the grades are given in class or posted in eLearning, whatever happens first.

- Class and Lab attendance is mandatory. You are allowed to have 2 absences for labs or classes. Other absences will take points from final grade at the discretion of the instructor.
- The dates for Exams will be posted in eLearning.
- Quizzes maybe taken at any time during class or labs. Students should assume that there will be a quiz every class or lab..
- Class notes (re-write) and Assignments have to be submitted together to receive points. No points will be given if any of the two are not submitted on time.
- Assignments and class notes (re-write) have to be submitted in Engineering Paper.

Course & Instructor Policies

Homework problems will be assigned approximately weekly. **Late homework will not be accepted.**

Homework will be collected at the **beginning** of the class period on the date it is due. Students should keep a copy of their homework in case they need it for reference (or in preparing for exams) before they can be graded and returned

No exam grades will be dropped. Make-up exams will be given **only in very special circumstances and at the discretion of the instructor**.

Problem sessions are offered in weekly basis by the TA of the course

Classroom Citizenship: General good behavior with **cell phones silenced** required. **Questions are encouraged!**

Off-campus Instruction and Course Activities

There will be no off-campus activities for this course

Comet Creed

This creed was voted on by the UT Dallas student body in 2014. It is a standard that Comets choose to live by and encourage others to do the same:

"As a Comet, I pledge honesty, integrity, and service in all that I do."

UT Dallas Syllabus Policies and Procedures

The information contained in the following link constitutes the University's policies and procedures segment of the course syllabus.

Please go to http://go.utdallas.edu/syllabus-policies for these policies.

The descriptions and timelines contained in this syllabus are subject to change at the discretion of the Professor.