ENGR 3300 – 002 Course Syllabus

Course Information

ENGR 3300-002 Advanced Engineering Mathematics
Fall 2024

TTh 8:30– 9:45 @ECSN 2.110
Lab: Th 10:00-10:50 @ ECSS 2.410

Instructor: Dr. Jung Lee
Office: ECSN 3.510
Office Hours: Tu 10:00am–11:00am Or others by appointment
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Phone:972-883-4359

TA:
SI Leader:

COURSE PRE-REQUISITES, :
Prerequisites: (MATH 2415 or MATH 2419 or equivalent) and ENGR 2300.
Prerequisite or Corequisite: MATH 2420.

Course Description

Survey of advanced mathematics topics needed in the study of engineering. Topics include review of complex numbers, multivariate calculus and analytic geometry. Study of polar, cylindrical, and spherical coordinates, vector differential calculus, vector integral calculus, and vector integral theorems. Examples are provided from electromagnetic, fluid mechanics, physics and geometry.

Student Learning Objectives/Outcomes

Students are expected to be able to:

1. Demonstrate the ability to solve advanced engineering problem 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 solution to problems in advanced engineering mathematics.

Required Textbooks and Materials

TEXTBOOK: Advanced Engineering Mathematics, 10th ED., WILEY, BY Erwin Kreyszig (ISBN 978-0-470-45836-5)

Class Work will be posted in eLearning. Students must have access to eLearning

Assignments & Academic Calendar Topics:

1. Vector Analysis and Vector Calculus. (Ch. 9 & 10)
2. Fourier Analysis (Ch.11)
3. Partial Differential Equations (Ch.12)
4. Complex Numbers and Functions (Ch.13, 14, 15, & 16)

Important Dates:

Last day to drop a course w/o "W" 9/4 (Th)
Last day to drop a course w "WP/WF" 11/5(T)
Last day of class: 12/5(Th)
Fall Break & Thanksgiving Holidays **11/25(Mon.) – 12/1(Sun.)**

Grading Policy

A: 90.00% or better (> 90.00 %, **B: 80.00% or better > 80.00 %,** **C: 70.00% or better >70.00 %)**

Grading

HW (20%) and Class Participation (10%)
Quizzes (20%)
Test I (25%) Thursday 9/26 (@ TI auditorium)
Test II (25%) Thursday 11/5 (@ TI auditorium)

Final Exam (optional) – 12:7 (Sat) (@ TI auditorium)

Course & Instructor Policies

* The dates for tests 1 & 2 can be changed at the discretion of the instructor.
* The final exam is comprehensive (1 hr. and 15 min.)

HW: 20%

* HW will be assigned weekly. **HW** will be collected **Tuesday** at the beginning of the class period. **Write on one-side of paper** only. Late HW- 33 % off per day.

QUIZ: 20%

* **Quiz** will be given **every Thursday**. (10 points each quiz)
* Quiz question(s) will be given during class hour.
* The lowest quiz score will be dropped.
* Missed quizzes cannot be made up
* Late Submission (Quiz) is accepted with penalty (33% off after 10 min.)

EXAM I, II & FINAL EXAM

* The optional final exam can replace the lowest exam grade. No Make-up exam will be given. The missed exam will be replaced by the Final exam.
* Late Submission (TEST I, II, and Final) will be accepted with penalty (10 % per 10 min.)

PARTICIPATION GRADE: 10%

* **Participation grade (10%)**: Class and Lab attendance is mandatory for each class (Lab) absence, 2% (1%) will be deducted. 1 absence from class and 1 absence from lab are excused.
* If you miss **6 consecutive days of the classes, you get automatic F.**
***Any extra points** (if any) will be added to HW score.

Classroom Citizenship: General good behavior with cell phones silenced required.

Assignment

1. HW #1. Student Survey … 15 pts **Due: Aug. 27, Tuesday**

Type, bring it to the class

You will be asked to write about you in the following questions as you complete your survey.

- Name, address, telephone (cell) number, e-mail address, where you can be reached.
- What is your major?
- Where are you from?
- What college mathematics classes have you taken, or are you taking it now? From where? If you are taking it now, write as NOW (where) and if you have not taken it yet, write as **not yet.** (Calculus II, III, DE, from UTD, DCC, etc.)

- What is your current GPA?
(eg., below 2.0, 2.0 – 2.5. 2.6 - 3.0, 3.0- 3.5, 3.5 - 4.0, or an exact GPA) •
What concerns, if any, you have about this course?
- What is your study plan for this course?
- How many credit hours (or classes) are you taking this semester? - If you work, where and how many hours per week?
  - If you are on scholarship, what kind and how does it cover for your study?
- What is your future plan?
- What else would you like me to know about you?

2. Portfolio (Optional) … 15 pts

Due The **Final Exam Day (Dec. 7) or Before**

Portfolio is a collection of a student's best work for the course.

1) **Redo** the **two tests** and **all Quizzes**
2) **Five** solved problems from **each Chapter** (1 Fourier Series problem from ch.11)
3) **Commentary** from the student concerning what you have learned from this work; and 4) **Self evaluation**

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.