Syllabus (year-semester)

Course Title	Engineering Mathematics 1	Course No.	TBA
Department/ Major	Electronic and Electrical Engineering	Credit/Hours	3/3
Class Time/ Classroom	TBA		
Instructor	Name: Jeehyeon Seo	Department: Electronic and Electrical Engineering	
	E-mail:meshgrid80@gmail.com	Telephone:	
Office Hours/ Office Location	Anytime, but by appointment only(email)		

Ⅰ. Course Overview

1. Course Description

This course aims to develop your understanding of fundamental mathematical concepts in Fourier Analysis, Laplace Transform, Partial Differential Equations.

2. Prerequisites

Calculus

3. Course Format

Lecture	Discussion/Presentation	Experiment/Practicum	Field Study	Other
100%	%	%		%

(Instructor can change to match the actual format of the class.)

Explanation of course format:

4. Course Objectives

1. Explain the mathematical concepts behind Fourier analysis, Laplace transform, partial differential equations, probability, mathematical statistics and numerical methods;

2. Implement basic operations in Fourier analysis and Laplace transform

3. Solve simple partial differential equations using direct integration, separation of variables and Laplace transform;

5. Evaluation System

Midterm Exam	Final Exam	Quizzes	Presentation	Projects	Assignments	Participation	Other
40%	40%	15%	%	%	%	5%	%

(Instructor can change to match the actual format of the class.)

* Evaluation of group projects may include peer evaluations.

Explanation of evaluation system:

II. Course Materials and Additional Readings

1. Required Materials

Kreyszig Erwin, Herbert Kreyszig, and Nominton E J, Advanced Engineering Mathematics, 10th Edition, John Wiley, 2011. (QA401.K92 2011)

2. Supplementary Materials

1. O'Neil Peter V, Advanced Engineering Mathematics, 8th Edition, Cengage Learning c2012. (TA330.N58 2018)
2. James Glyn, Advanced Modern Engineering Mathematics, 4th Edition, Pearson, 2011. (TA330.A244)
3. Singh Ravish R and Bhatt Mukul, Engineering Mathematics, McGraw Hill, 2010. (TA333.S617)

3. Optional Additional Readings

III. Course Policies

* For laboratory courses, all students are required to complete lab safety training.

Ⅳ. Course Schedule (15 credit hours must be completed.)

Week	Date	Topics & Class Materials, Assignments
Week 1	(mm/dd)	Laplace transform, Inverse Transform, Linearity, s-shifting (Ch.6)
	(mm/dd)	Transform of derivatives and integral
Week 2	(mm/dd)	unit step function, t-shifting (Ch.6)
	(mm/dd)	short inpulse, dirac's delta function, partial fractions
Week 3	(mm/dd)	convolution,Integral equations(Ch,6)
	(mm/dd)	Differentiation and integration of transforms
Week 4	(mm/dd)	Systems of ODES(Ch.6)
	(mm/dd)	Laplace transform: General formulas
Week 5	(mm/dd)	QUIz(1), Fourier Series(Ch.11)
	(mm/dd)	Functions of any period p-=2L
Week 6	(mm/dd)	Even and Odd functions. Half Range expansions(Ch. 11)
	(mm/dd)	Complex Fourier series
Week 7	(mm/dd)	Fourier integral(Ch.11)
	(mm/dd)	Fourier integral
Week 8	(mm/dd)	Midterm exam
	(mm/dd)	(Ch. 6 and part of 11)
Week 9	(mm/dd)	Fourier cosine and Sine transform(ch.11)
	(mm/dd)	Fourier cosine and sine transform
Week 10	(mm/dd)	Fourier transform(Ch.11)
	(mm/dd)	QUIZ(2)
Week 11	(mm/dd)	Basic concepts, Modelign, Vibrating string, Wave equation(Ch.12)
	(mm/dd)	Solution by separating variables, use of Fourier series
Week 12	(mm/dd)	D'Alembert's solution of the wave equation (Ch.12)
	(mm/dd)	Heat eqaution: Solution by Fourier series
Week 13	(mm/dd)	Heat eqaution: solution by Fourier integrals and transform (Ch.12)
	(mm/dd)	2-D Wave eqaution , QUIZ(3)

Week	Date	Topics & Class Materials, Assignments
Week 14	(mm/dd)	Double Fourier series(Ch.12)
	(mm/dd)	Solutions of PDE by Laplace transforms
Week 15	(mm/dd)	Fianl exam
	(mm/dd)	
Makeup Class	(mm/dd)	

V. Special Accommodations

* According to the University regulation section #57-3, students with disabilities can request for special accommodations related to attendance, lectures, assignments, or tests by contacting the course professor at the beginning of semester. Based on the nature of the students' request, students can receive support for such accommodations from the course professor or from the Support Center for Students with Disabilities (SCSD). Please refer to the below examples of the types of support available in the lectures, assignments, and evaluations.

Lecture	Assignments	Evaluation
· Visual impairment : braille, enlarged reading materials · Hearing impairment : note-taking assistant · Physical impairment : access to classroom, note-taking assistant	Extra days for submission, alternative assignments	· Visual impairment : braille examination paper, examination with voice support, longer examination hours, note-taking assistant · Hearing impairment : written examination instead of oral · Physical impairment : longer examination hours, note-taking assistant

- Actual support may vary depending on the course.

* The contents of this syllabus are not final—they may be updated.