King Fahd University of Petroleum and Minerals

Department of Mathematics and Statistics

SYLLABUS

Semester II,2014- 2015 (142)

(Dr.Izhar Ahmad)

Course #: Math 513

Title: Mathematical Methods for Engineers

Textbook: Advanced Engineering Mathematics with MatLab, Dean G. Duffy, 3rd Edition

Extra References

-Beginning Partial Differential Equations, P. V. O"Neil.

-Advanced Engineering Mathematics by Zill and Wright.

Objective: This course aims to introduce some necessary concepts of Engineering Mathematical Methods such as Laplace and Fourier Transforms, Sturm-Liouville problems, basic PDE's, and some matrix theory.

Outcomes: By the end of this course, the student should be able to

-perform the Fourier and Laplace transforms of some commonly used functions

-solve the basic linear Laplace, wave, and heat equations and Sturm-liouville problems

-solving and computing solutions to systems of linear equations

-using MATLAB to solve computational problems

Week	Chapters	Material
1-2	6	The Laplace Transform
3-4	4	Fourier Series
5-6	5	The Fourier Transform
7-8	9	The Sturm-Liouville Problem
9-10	10	The Wave Equation
11	11	The Heat Equation
12	12	The Laplace Equation
13-14	14	Linear Algebra
15		Catch up and Review

Grading Policy: Project, Homework and Assignments 20%, Major I 20%, Major-II 20%, Final 40%

Note: Homework assignments for each sections will be assigned during semester.

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