Philadelphia University

Faculty of Engineering - Department of Computer Engineering
First Semester 2021/2022

Course Details:

Title:	Engineering Analysis (1) (650260)
Prerequisite:	Calculus 2 (250102)
Credit Hours:	3 credit hours (approximately 44 contact hours)
Textbook:	"Advanced Engineering Mathematics", 10th edition By: Erwin Kreyszig
References:	1) Boyce, William E., DiPrima, Richard C., Elementary Differential Equations, ninth Edition, Wiley, New York, 2009. 2) Rabenstein, Albert L., Elementary Differential Equations with Linear Algebra, Third Edition, Academic Press, New York, 1982. 3) Krusemeyer, Mark, Differential Equations, Macmillan Publishing Co., New York, 1994. 4) Simmons, George F., Differential Equations with Applications and Historical Notes, third edition, Taylor & Francis Group, LLC, 2017 5) المعادلات التفاضلية وتطبيقاتها,, الدكتور عبدالرحمن القواسمي و المهندسة ندى الخطيب 2011 6) http://www.sosmath.com/diffeq/diffeq.html
Course Description:	The course is a requirement for all engineering students. It introduces the principles of digital communications to make the student able to understand the communication system with zoom in digital form of electronics.
Website:	http://www.philadelphia.edu.jo/academics/srushdan/
Instructor:	Eng. Sultan M. Al-Rushdan **Email**: srushdan@philadelphia.edu.jo **Office**: Engineering building, room 6715, ext: 2149 **Office hours**: MON, WED 12:45 – 14:00

Course Outlines:

Week	Topic
1 (17/10 – 21/10)	Basic Concepts & Ideas
2,3,4 (24/10 – 11/11)	First Order Differential Equations
5,6,7 (14/11 – 2/12)	Second Order Differential Equations
8 (5/12 – 9/12)	Higher Order Differential Equations
9 (12/12 – 16/12)	Laplace Transform, Inverse Laplace Transform
10,11 (19/12 – 30/12)	Laplace Transform properties
12 (2/1 – 6/1)	Solving DE using Laplace Transform
13,14 (9/1 – 20/1)	Power Series Method
15 (23/1 – 27/1)	Frobenius method and Projects discussion.
16 (29/1 – 5/2)	final exam

Course Learning Outcomes with reference to ABET Student Outcomes:

Upon successful completion of this course, the student should:

1.	Understand Basic concepts and the elementary of DE	[1]
2.	Be able to distinguish the appropriate methods to solve DE	[1]
3.	Use fundamental knowledge to analyze and solve different engineering models	[1,6]
4.	Able to use Laplace Transform and power series to solve DE	[1,6]

Assessment Guidance:

Evaluation of the student performance during the semester (total final mark) will be conducted according to the following activities:

Exams: The students will be subjected to scheduled written exam, during the semester.

Semester Work: At least (4) Quizzes and assignments will be conducted during the semester.

Final Exam: The students will be subjected to scheduled final exam at the end of the semester covering the whole materials taught in the course.

Grading policy:

MidTerm Exam	30% (5/12 – 9/12)
Semester Work	30%
Final Exam	40% (29/1 – 5/2)
Total:	100%

Attendance Regulation:

The semester has in total 45 credit hours. Total absence hours from classes and tutorials must not exceed 15% of the total credit hours. Exceeding this limit without a medical or emergency excuse approved by the deanship will prohibit the student from sitting the final exam and a zero mark will be recorded for the course. If the excuse is approved by the deanship the student will be considered withdrawn from the course.

OCT, 2020