



# Philadelphia University

Faculty of Engineering - Department of Computer Engineering  
Second Semester 2019/2020

## Course Details:

- Title:** Engineering Analysis (1) (650260)
- Prerequisite:** Calculus 2 (250102)
- Credit Hours:** 3 credit hours (approximately 44 contact hours)
- Textbook:** “Advanced Engineering Mathematics”, 10<sup>th</sup> 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 المهندس 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	Basic Concepts & Ideas
2,3,4	First Order Differential Equations
5,6,7	Second Order Differential Equations
8	Higher Order Differential Equations
9	Laplace Transform, Inverse Laplace Transform
10,11	Laplace Transform properties
12	Solving DE using Laplace Transform
13,14	Power Series Method
14,15	Frobenius method and Projects discussion.
16	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	a
2.	Be able to distinguish the appropriate methods to solve DE	a
3.	Use fundamental knowledge to analyze and solve different engineering models	e
4.	Able to use Laplace Transform and power series to solve DE	a

## **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 two scheduled written exams, first exam and second exam during the semester.

**Quizzes:** (5) Quizzes of (10-15) minutes will be conducted during the semester.

**Final Exam:** The students will undergo a scheduled final exam at the end of the semester covering the whole materials taught in the course.

## **Grading policy:**

First Exam	20% (18 – 26 / 3 / 2020)
Second Exam	20% (22 – 30 / 4 /2020)
Quizzes	20%
Final Exam	40% (30 / 5 – 6 / 6 /2020)
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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.

FEB, 2020