Philadelphia University

Faculty of Engineering - Mechatronics Engineering Department

Second Semester 2019/2020

Title:	**Engineering Skills (0640253)**
Prerequisite:	English II (130102)
Credit Hours:	Three credit hours (16 weeks per semester, approximately 45 contact hours)
Textbook:	Foundations of Engineering by Holtzapple and Reece. 2nd ed.
References	Engineering Fundamentals: An Introduction to Engineering by S. Moaveni. 5th ed.
	Engineering Your Future: A Brief Introduction to Engineering by W. Oakes.9th ed.
Class Times:	9:10 -10: 00
Website:	**http://www.philadelphia.edu.jo/academics/ttutunji**

Instructor: **Dr. Mustafa Awwad Al-Khawaldeh**
Email: malkhawaldeh@philadelphia.edu.jo
Office: Engineering building, room 6406. ext: 2540
Office hours: *Sunday, Tuesday, and Thursday:11:10-12:00* ,

Course Learning Outcomes with reference to ABET Student Outcomes:

Upon successful completion of this course, student should:

1.	Understand engineering definition	[2]
2.	Analyze basic engineering problems	[1]
3.	Propose and evaluate design solutions	[2]
4.	Communicate effectively within a team environment	[3, 5]
5.	Read research paper and write a technical report	[3]
6.	Understand professional and aware of ethical responsibility	[4]
7.	Understand project management basics and plan the management of simple projects	[5]

Course Academic Calendar	
Week	**Subject**
1	**Introduction** Course outline; Student Learning Outcomes; Introduction to Engineering: Definition, Engineering Disciplines, Successful Engineering Skills
2	**Problem Solving** Types of Problems, Problem Solving Skills, Problem Solving Procedure
3	Estimation, Creativity
4	**Introduction to Design** Design Method Steps, Problem Definition, Solution Search
5	Analysis, Implementation, Evaluation, Examples
	Exam I
6	**Communication I**: **Technical Reading** How to read a textbook.
7	**Communication II: Technical Writing** Engineering Documents; Main Sections in Technical Reports
8	Constructing Sentences; Punctuation; Constructing Paragraphs;
9	**Writing workshop** How to Write a Proposal; How to Write a Technical Report.
10	**Communication III: Presentation** Oral Presentation; Preparation; Structure; Visuals; Voice Quality; Body Language
	Exam II
11	**Student Presentations I** First Draft Student Presentations.
12	**Ethics** Code of Ethics for Engineers (Jordanian Engineers Association). Interaction rules; Moral theories; Guidelines; Engineering Responsibility
13	**Project Management Skills** CPM, Gantt Chart, Team Building, Leadership
14	**Student Presentations II**
15	**Review**
	FINAL EXAM

Assessment Guidance:

Evaluation of the student performance during the semester will be based on the following:

Exams: Two written exams will be given to the students. Each exam will cover material from the previous 4-5 weeks. Also, students will have a final exam at the end of the semester covering all the materials taught in the course.

Quizzes: Three 10-minute quizzes will be given to the students. The material will be based on one or two lectures.

Project Students will be required to work in a team to study an engineering system, write a technical report, and present the results in class.

Grading policy:

First Exam	20%
Second Exam	20%
Project / Quizzes	20%
Final Exam	40%
Total:	100%