**Philadelphia University**

Faculty of Engineering - Mechatronics Engineering Department

Second Semester 2018/2019



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| **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 edition |
| **Class Time:** | | 10:10-11:00 Sun, Tue, Thu  9:45-11:15 Mon, Wed |
| **Website:** | | <http://www.philadelphia.edu.jo/academics/aalshdiefat/> |
| **Instructor:** | |  | | --- | | **Dr**. Ala'a Alshdiefat  **Email**: aalshdiefat@philadelphia.edu.jo  **Office**: Civil engineering building, room, 312 ext.  Office hours: Sun, Tue and Thu: 11:00-12:00  Mon and Wed 11:15-12:45 | | |

**Course Learning Outcomes with reference to ABET Student Outcomes:**

Upon successful completion of this course, student should:

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| **1.** | Remember and understand engineering definition and history | h |
| **2.** | Analyze basic engineering problems | a, e |
| **3.** | Propose and evaluate design solutions | c, h |
| **4.** | Communicate effectively within a team environment | g ,d |
| **5.** | Write technical reports | g |
| **6.** | Understand professional and ethical responsibility | f |
| **7.** | Understand project management basics and plan the management of simple projects | d |

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| **Course Academic Calendar** | |
| **Week** | **Subject** |
| **Feb 17** | **Introduction**  Course outline; Student Learning Outcomes; Introduction to Engineering: Definition and History, Engineering Disciplines, Successful Engineering Skills |
| **Feb 24** | **Problem Solving**  Types of Problems, Problem Solving Skills, Problem Solving Procedure |
| **Mar 3** | Estimation, Creativity |
| **Mar 10** | **Introduction to Design**  Design Method Steps, Problem Definition, Solution Search |
| **Mar 17** | Analysis, Implementation, Evaluation, Examples |
|  | **Exam I** |
| **Mar 24** | **Communication I**: **Technical Reading** |
| **Mar 31** | **Communication II: Technical Writing**  Engineering Documents; Main Sections in Technical Reports |
| **Apr 7** | Constructing Sentences; Punctuation; Constructing Paragraphs; Action Verbs |
| **Apr 14** | Writing workshop |
| **Apr 28** | **Communication III: Presentation**  Oral Presentation; Preparation; Structure; Visuals; Voice Quality; Body Language |
|  | **Exam II** |
| **May 5** | **Ethics**  Interaction rules; Moral theories; Guidelines; Engineering Responsibility |
| **May 12** | **Project Management Skills**  CPM, Gantt Chart, Team Building, Leadership |
| **May 19** | **Student Presentations I** |
| **May 26** | **Student Presentations II** |
| **Jun 2** | **Review** |
|  | **FINAL EXAM** |

**Assessment Guidance:**

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

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| **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:**

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