**The Hashemite University**
**Faculty of Engineering**
**Course Syllabus**
**Department of Mechanical Engineering**

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|---|---|---|---|
| **Course Title:** | **Mechanical Drawing 1 (0,3, 0)** | **Course Number:** | 110402445 |
| **Designation:** | Compulsory | **Prerequisite(s):** | 110400202 |
| **Instructor:** | Dr. Mohammad A Gharaibeh | **E-mail:** | mohammada_fa@hu.edu.jo |
| **Office Hours:** | 11:00 –1:00 Sunday/Tuesday | | |

**Course Description (catalog):** Parametric Mechanical Drawing, feature-based solid modeling with CREO Parametric software package.

**Textbook(s) and/or Other Supplementary Materials:**

1. Inside Pro/Engineer Wildfire, by D. Kelly, McGraw Hill
2. Pro/ENGINEER Wildfire Tutorial.

**Major Topics Covered:**

| Topic | # Weeks | # Contact hours* |
|---|---|---|
| Learning the CREO Interface | 1 | 3 |
| Solid Modeling Part-1(Extrusions, Sketching and Cuts) | 1 | 3 |
| Solid Modeling Part-2(Revolves, Holes and Feature Modification) | 1 | 3 |
| Complex parts, Shells, Rips, Rounds, Chamfers and Datum Planes | 2 | 6 |
| Thin solids, Mirror, Pattern, Datum Axes/Planes | 2 | 6 |
| Sweeps, Blends and Helical Sweeps | 2 | 6 |
| MID EXAM | 1 | 3 |
| Assembly | 3 | 9 |
| Engineering Drawings | 2 | 6 |
| **Total** | **15** | **45** |

*Contact hours include lectures, quizzes and exams

**Specific Outcomes of Instruction (Course Learning Outcomes):**
After completing the course, the student will be able to:

1. Recognize the general functionality of Pro-Engineer feature-based solid modeling.**(k)**

2. Produce professional-quality solid models of mechanical components (parts). These models should reflect professionalism in the use of the following: solid features, layers, sweeps, blends, patterns and parametric relations. **(c,k)**

3. Produce professional-quality solid models of mechanical assemblies. These models should reflect professionalism in the use of the following: constraints, exploded views, assembly views and sections. **(c,k)**

4. Produce professional part drawings that are fully dimensioned with orthographic, auxiliary, and sectional views to describe solid objects. **(c,k)**

5. Produce professional assembly drawings that are fully dimensioned with orthographic, auxiliary, and sectional views to describe assemblies. **(c,k)**

6. Understand the importance of team working and cooperative learning. **(g,i)**

**Student Outcomes (SO) Addressed by the Course:**

| # | Outcome Description | Contribution |
|---|---|---|
| | **General Engineering Student Outcomes** | |
| (a) | an ability to apply knowledge of mathematics, science, and engineering | |
| (b) | an ability to design and conduct experiments, as well as to analyze and interpret data | |
| (c) | an ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability | **M** |
| (d) | an ability to function on multidisciplinary teams | |
| (e) | an ability to identify, formulate, and solve engineering problems | |
| (f) | an understanding of professional and ethical responsibility | |
| (g) | an ability to communicate effectively | **L** |
| (h) | the broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context | |
| (i) | a recognition of the need for, and an ability to engage in life-long learning | **L** |
| (j) | a knowledge of contemporary issues | |
| (k) | an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice. | **H** |
| | **H**=High, **M**= Medium, **L**=Low | |

**Grading Plan:**

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|---|---|
| Homework & quizzes | 20% |
| Mid-term Exam | 30% |
| Project | 10% |
| Final Exam | 40% |

**General Note:**

- A team project that involves part modeling and assembly is required.
- Before starting on your project you need to turn in a proposal showing what you intend to do.
- By the completion of the project, each student is required to turn in a report as well as the electronic files of the project.

**Prepared by :** Dr. Mohammad A Gharaibeh **Date**: 11, Oct, 2020