كلية الهندسة

GE 103 - Engineering Graphics and Design (Required Course)

Code and Name: GE 103 - Engineering Graphics and Design
Credit Hours: 3 (Lecture: 3, Tutorial: 1)

Textbook:
- Fundamentals of Graphics Communications, Gary Bertoline, Hartman, Ross, 6th Edition, McGraw-Hill, 2009.

Other References:
- Engineering Graphics & Design Handbook, prepared by College of Engineering at Imam university
- Engineering Graphics with AutoCAD 2014, James D. Bethune, 1st Edition, Pearson, 2014.

Course Description:
Use of computer drafting software (AutoCAD) to model parts and assemblies. Use of parametric and non-parametric solids, surface and wire frame models. Part editing, two-dimensional documentation of models. Planar projection theory, including sketching of perspective, isometric, multi-view, auxiliary, and section views. Spatial visualization exercises. Dimensioning guidelines, tolerance techniques. Team or individual design project.

Pre-requisites: None
Co-requisites: None

Course Learning Outcomes:
With relation to ABET Student Outcomes (SOs: 1-7)

1. To recognize different types of drawings with respect to views (i.e. orthographic, isometric, section, etc.) (1)
2. To recognize drawings with respect to application (i.e. design drawing, shop drawings, floor plans etc.) (1)
3. To recognize and extract relevant information from engineering drawings (6)
4. To produce simple design drawings using hand sketching methods (2)
5. To produce engineering drawings on AUTOCAD using both 2D and 3D methods (1,2,6)
6. To list and describe the objectives and processes of engineering design (2)
7. To work within a team setting and execute a simple design project (5)

Topics to be covered:

- Introduction to Engineering Drawing
- Introduction to AutoCAD
- Introduction to different types of views
- Introduction to Orthographic views
- Orthographic drawing with projections
- Advanced orthographic drawings
- Review of Orthographic Drawing– Practice
- Introduction to 3-D solid modeling
- Advanced 3-D Solid Model
- Section Views
- Introduction to course project
- Engineering Design Methodology
- Geometric Dimensioning and Scaling
- Drawing Readings
- Additional topics in Engineering Graphics

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Grading Policy:

The grading for the course are 60% coursework and 40% Final Exam. The course work consists of two Midterm Exams, where each midterm exam is worth 20%. It also includes quizzes, homework, and projects for the remaining 20% that is modified by the course instructor.