

**The University of Jordan
School of Engineering**



Department	Course Name	Course Number	Semester
Mechanical Engineering	Engineering Graphics and Descriptive Geometry	0904131	

2019 Course Catalog Description

Drawing equipment and use of instruments. Lettering, Geometric construction, Sketching and shape description. Basic descriptive geometry, Developments and intersections. Axonometric, oblique and perspective drawings, Multiview projection, Principal views, Conventional practice, and sectional views. Auxiliary views. Dimensioning techniques. Parallel: Introduction to computer drawing, Drawing aids, Geometrical construction, and the appropriate commands of text, editing, plotting, sections, layers, pictorial views, and dimensioning. Auxiliary views.

Instructors

Name	E-mail	Sec	Office Hours		Lecture Time	

Text Books

	Text book 1	Text book 2
Title	Engineering Design Graphics	
Author(s)	James Earle	
Publisher, Year, Edition	Printace Hall, 2003, 11 th Edition	

References

Books	<ol style="list-style-type: none"> 1. Engineering Graphics with AutoCAD 2014, James D. Bethune. 2. Getting Started, AutoCAD 2014, Autodesk. 3. Graphic Science and Design, French, Vierck and Foster. 4. Descriptive Geometry, Pare, Loving, Hill and Pare, Printace Hall, 1996.
Journals	Engineering Design Graphics Journal, (http://www.edgj.org/index.php/EDGJ)
Internet links	http://www.autodesk.com/education/student-software http://fetweb.ju.edu.jo/acad/ http://homepages.cae.wisc.edu/~me231/online_notes/descriptive_geometry/prob/problems.htm

Prerequisites

Prerequisites by topic	
Prerequisites by course	
Co-requisites by course	
Prerequisite for	Machine Drawing (0904233)

Topics Covered

Week	Topics	Chapter in Text	Sections
1	Manual: Introduction to Engineering Graphics and Lettering ACAD: Starting AutoCAD and Setting Parameters	<i>Textbook</i> (10, 11)	
2	Manual: Geometrical Constructions ACAD: Object Construction and Drawing Commands	<i>Textbook</i> (12)	
3	Manual: Sketching and Line Techniques ACAD: Editing and Organization	<i>Textbook</i> (13)	

4-5	Manual: Multi-view Drawings and Orthographic Projection ACAD: Text, P-lines, Layers and Hatching	<i>Textbook</i> (14)	
6	Manual: Engineering Sections and Hatching ACAD: Getting Information and Inquires	<i>Textbook</i> (16)	
7-8	Manual: Oblique, Isometric Drawings and Dimensioning ACAD: Dimensioning	<i>Textbook</i> (20, 25)	
9	Manual: Introduction to Descriptive Geometry and Successive Auxiliary Views ACAD: Introduction to 3D modeling	<i>Textbook</i> (27, 28)	
10-11	Manual: Oblique Lines, Planes and Applications ACAD: UCS, Wireframe and Surface Modelling	<i>Textbook</i> (26)	
12-13	Manual: Piercing Points and Angle Between Plane-Plane and Line-Plane ACAD: Extrusion and Boolean Operations	<i>Textbook</i> (28)	
14	Manual: Parallelism and Perpendicularity ACAD: Solid Editing, Slice and Dimensioning	<i>Textbook</i> (26)	
15	Manual: Spatial Construction of Solids ACAD: Construction of 3D-Orthographic Views	<i>Textbook</i> (31)	

Mapping of Course Outcomes to ABET Student Outcomes

SOs	Course Outcomes
7	<ol style="list-style-type: none"> 1. Appropriate mastery of the knowledge, techniques, skills, and modern tools of the discipline. 2. An ability to apply creativity in the design of systems, components, or appropriate to program objectives. 3. Develop an understanding of the design process and the fundamental methods necessary to do creative problem solving. 4. Develop and ability to communicate graphically using various engineering tools including a modern computer graphics package. 5. Develop an ability to organize a team design project and to present the results of a design solution.

Evaluation

Assessment Tools	Expected Due Date	Weight
Midterm Exam		30%
Quizzes + C.W.		20%
Final Exam		50%

Contribution of Course to Meet the Professional Components

This course is one of the first opportunities for engineering students to encounter the fundamental principles of design problem solving. It is an important prerequisite course for number of design related-courses, which occur later in the programs of engineering students.

Relationship to Student Outcomes

SOs	1	2	3	4	5	6	7
Availability							X

Relationship to Mechanical Engineering Program Objectives (MEPOs)

MEPO1	MEPO2	MEPO3	MEPO4	MEPO5
ABET Student Outcomes (SOs)				
1	An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics			
2	An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors			
3	An ability to communicate effectively with a range of audiences			
4	An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts			
5	An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives			
6	An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions			
7	An ability to acquire and apply new knowledge as needed, using appropriate learning strategies			
Updated by ABET Committee, 2020				