

# 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	Section	Office Hours	Lecture Time

### Text Books

	Text book 1	Text book 2
<b>Title</b>	Engineering Design Graphics	The fundamentals of Engineering Drawing and Graphic Technology
<b>Author(s)</b>	James Earle	Thomas E. French and Charles J. Vierck
<b>Publisher, Year, Edition</b>	Prentice Hall, 2003, 11 <sup>th</sup> Edition	McGraw Hill Book Company, 2010, 4 <sup>th</sup> Edition

### References

<b>Books</b>	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, Prentice Hall, 1996.
<b>Journals</b>	Engineering Design Graphics Journal, <a href="http://www.edgj.org/index.php/EDGJ">http://www.edgj.org/index.php/EDGJ</a>
<b>Internet links</b>	<a href="https://www.autodesk.com/education/free-software/autocad">https://www.autodesk.com/education/free-software/autocad</a>

### Prerequisites

<b>Prerequisites by topic</b>	
<b>Prerequisites by course</b>	
<b>Co-requisites by course</b>	
<b>Prerequisite for</b>	Machine Drawing (0904233) (Mechanical Engineering Students)

### Topics Covered

Lecture	Topics	Chapter in Text
1	Manual: Introduction to Engineering Graphics and Lettering ACAD: Starting AutoCAD and Setting Parameters	Textbook (10, 11)
2	Manual: Geometrical Constructions ACAD: Object Construction and Drawing Commands	Textbook (12)
3	Manual: Sketching and Line Techniques ACAD: Editing and Organization	Textbook (13)
4-5	Manual: Multi-view Drawings and Orthographic Projection ACAD: Text, P-lines, Layers and Hatching	Textbook (14)
6	Manual: Engineering Sections and Hatching ACAD: Getting Information and Inquires	Textbook (16)
7-8	Manual: Pictorial Drawings and Dimensioning ACAD: Dimensioning	Textbook (20, 25)
9	Manual: Introduction to Descriptive Geometry and Successive Auxiliary Views ACAD: Introduction to 3D modeling	Textbook (27, 28)
10-11	Manual: Oblique Lines, Planes and Applications ACAD: UCS, Wireframe and Surface Modelling ACAD: Solid Editing, Slice and Dimensioning	Textbook (26)
12	Manual: Perpendicularity and Angularity ACAD: Construction of 3D-Orthographic Views	Textbook (26)

Mapping of Course Outcomes to ABET Student Outcomes							
SOs		Course Outcomes					
7		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. 4. Develop and ability to communicate graphically using various engineering tools including a modern computer graphics package.					
Evaluation							
Assessment Tools				Expected Due Date		Weight	
Manual Drawing Class work, Homework and Quizzes						10%	
AutoCAD Quizzes						10%	
Midterm Manual Drawing Exam						15%	
Midterm AutoCAD Exam						15%	
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 designs 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	
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, 2024							