

The University of Jordan

School of Engineering



Department	Course Name	Course Number	Semester
Mechanical Engineering	Engineering Drawing and Descriptive Geometry	0904131	Spring 2020/2021

2005 Course Catalog Description

Lettering, Geometric construction, Sketching and shape description. Basic descriptive geometry, Developments and intersections. Axonometric and oblique drawings, Multi-view projection, Principal views, Conventional practice, and sectional views. Dimensioning techniques. Parallel: Introduction to computer drawing, Drawing aids, Geometrical construction, and the commands of text, editing, plotting, sections, layers, pictorial views, and dimensioning. Auxiliary views. This course aims at developing the skills needed for documenting designs using drawings and for performing graphical analysis of two-dimensional and three-dimensional problems. Manual and computer aided methods of graphical analysis and communication are covered.

Text Books

	Text book 1	Text book 2
Title	Engineering Design Graphics	The fundamentals of Engineering Drawing and Graphic Technology
Author(s)	James Earle	Thomas E. French and Charles J. Vierck
Publisher, Year, Edition	Prentice Hall, 2003, 11 th Edition	McGraw Hill Book Company, 2010, 4 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, Prentice Hall, 1996.
Journals	Engineering Design Graphics Journal, http://www.edgj.org/index.php/EDGJ
Internet links	https://www.autodesk.com/education/free-software/autocad 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
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: Pictorial 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 ACAD: Solid Editing, Slice and Dimensioning	<i>Textbook</i> (26)
12	Manual: Perpendicularity and Angularity ACAD: Construction of 3D-Orthographic Views	<i>Textbook</i> (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. 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	
First Manual Exam						5%	
Second Manual Exam						10%	
Midterm AutoCAD Exam						15%	
Manual Quizzes						5%	
Manual Homework						5%	
AutoCAD Quizzes						10%	
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, 2021							

TECHNICAL DRAWING TOOLS

THE INSTRUMENTS USED IN ENGINEERING DRAWING ARE:

- ✓ DRAWING SHEETS.



- ✓ TWO PENCILS: (0.5 HB) AND (0.35 OR 0.5 2H).



- ✓ T-SQUARE: (60cm)



- ✓ COMPASS.



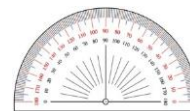
- ✓ SHARPNER FOR COMPASS LEAD.



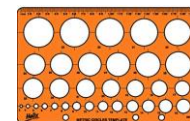
- ✓ TRIANGLES.



- ✓ PROTRACTOR.



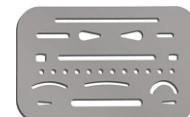
- ✓ CIRCLES TEMPLATE



- ✓ ERASER.



- ✓ Erasing Shield Template



- ✓ Scotch Paper

