

Ministry of Higher Education and Scientific research



**Department of Mechanical Engineering**

**College of Engineering**

**University of Salahaddin**

**Subject: Engineering Drawing**

**Course Book – Year 1**

**Lecturer's name: Dr.Gawhar Ibraheem Khidhir**

**Academic Year: 2024-2025**

## Course Book

1. Course name	Engineering Drawing
2. Lecturer in charge	Dr.Gawhar Ibraheem Khidhir
3. Department/ College	Mechanical / Engineering
4. Contact	E-mail : <a href="mailto:gawhar_eng@yahoo.com">gawhar_eng@yahoo.com</a> , <a href="mailto:gawhar.khidhir@su.edu.krd">gawhar.khidhir@su.edu.krd</a> Mob. 009647504811655
5. Time (in hours) per week	Four
6. Office hours	six
7. Course code	
8. Teacher's academic profile	<p>*B.Sc. of Mechanical engineering from university of Salahaddin _Erbil –Iraq at July 1996.</p> <p>* M Sc. In manufacturing processes from University of Salahaddin –Erbil –Iraq at Aprilr 2007.</p> <p>* PhD. In production from University of Salahaddin –Erbil –Iraq at July 2020.</p> <p><b>Research Interest:</b></p> <p>1. Efficiency of Dissimilar Friction Welded SAF 2205 Duplex Stainless Steel and 1045 Medium Carbon Steel Joints.</p> <p>2. Efficiency of dissimilar friction welded 1045 medium carbon steel and 316L austenitic stainless steel joints.</p>

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9. Keywords	Drawing ,projection,Isometric ,missing view
<p>10. Course overview: Engineering drawing is the main materials distinguish between engineering field and other field during by studding the engineering drawing increases the ability of person to imagine the objects of different and difficult shapes and geometry from different views and locations and increases the accuracy to estimate the distance between different points. AutoCAD is a computer-aided design software developed by the company Autodesk (hence the name AutoCAD). It allows you to draw and edit digital 2D and 3D designs more quickly and easily than you could by hand. The files can also be easily saved and stored in the cloud, so they be accessed anywhere at anytime</p>	
<p>11. Course objective: Engineering drawing is the principle method of communication in engineering and science and is the language used internationally by engineers and technologists and also may be defined as the graphic representation of physical objects and their relationship. The graphic language straight line and curves to represent the objects. The objective of this course is to teach users the basic commands and tools necessary for professional 2D drawing, design and drafting using AutoCAD.</p>	
<p>12. Student's obligation Student must attend lectures, bring all drawing tools and commitment to perform household duties and read the latest sources of newly printed books and sites interested in this subject, and repeat the what done in home on AutoCAD version2013.</p>	
<p>13. The essence of the teaching program is prepared on MS power point presentation .Elaborations of the details are done verbally and when needed on white board .For student to achieve a level of excellence in this subject, the following point should be given utmost consideration:</p> <ul style="list-style-type: none"><li>*Drawing whole attendance on regular basis for the purpose of learning and doing class work.</li><li>* Active participation in class discussions.</li><li>*Reviewing the lecture notes and topics weekly basis, noting the ambiguous points, if any, and requesting clarification during during lecturer office hours.</li><li>* Giving adequate and sufficient priority of drawing tools to draw hole for daily test.</li></ul>	

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**14. Assessment scheme:** In this system the maximum mark is 100% .The grading system is based on the summation of two categories of evaluation.

First 50 % of marks are based on the academic year efforts of the student which includes:

semesters examination = 30 % , for which the study materials is set for the topic reviewed in the particular semester.

-Quizzes 5%

-Project and home work 15%

**15. Student learning outcome:**

To develop the student's ability to imagine the different parts and geometric shapes and how to relate the parts in different engineering projects and to draw easily by AutoCAD.

**16. Course Reading List and References:**

▪ Key references:

1.P J Shah, Engineering Graphics.

2.A W Boundy, Engineering Drawing.

3. Bertoline, Fundamentals of Graphics communication.

4.Lakshminarayanan, Engineering Graphics.

5.Engineering Drawing and Desighn.Cecial Jensen,Jay Helsel,and Dennis Short.

6.A text book of Engineering Drawing,Venkata Reddy

▪ Useful references:

1.P J Shah, Engineering Graphics.

2. Bertoline, Fundamentals of Graphics communication.

**17. The Topics:**

Week No.	Subject detail; Engineering Metallurgy
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<p>Week 1</p> <p>Feb. 24, 2022</p>	<ul style="list-style-type: none"> <li>- The graphic language and design</li> <li>- Instrumental drawing</li> <li>- Types of lines</li> <li>- Line thickness</li> <li>- Size of drawing paper</li> <li>- Sheets</li> <li>- Scales</li> <li>- Lettering</li> </ul>
<p>Week 2</p>	<ul style="list-style-type: none"> <li>- Geometric constructions</li> <li>- Drawing circles</li> <li>- Polygons</li> <li>- Ellipse</li> <li>- Helix and parabola</li> <li>- Constructing geometric shapes and templates</li> </ul>
<p>Week 3</p>	<ul style="list-style-type: none"> <li>- Projections First angle projection</li> <li>- Projections of inclined surface</li> <li>- Projection of oblique surface</li> </ul>
<p>Week 4</p>	<ul style="list-style-type: none"> <li>- Freehand projection problems</li> </ul>
<p>Week 5</p>	<ul style="list-style-type: none"> <li>- isometric Free hand isometric sketch</li> <li>- Oblique Isometric</li> </ul>
<p>Week 6 and7</p>	<ul style="list-style-type: none"> <li>- Introduction to AutoCAD</li> </ul>
<p>Week 8 and 9</p>	<ul style="list-style-type: none"> <li>- Testing commands on AutoCAD</li> </ul>
<p>Week 10 and 11</p>	<ul style="list-style-type: none"> <li>- Drawing by AutoCAD</li> </ul>
<p>Week 12</p>	<ul style="list-style-type: none"> <li>- Midterm Exam</li> </ul>
<p>Week 13</p>	<ul style="list-style-type: none"> <li>- Projection in AutoCAD</li> </ul>
<p>Week 14</p>	<ul style="list-style-type: none"> <li>- isometric in AutoCAD</li> </ul>
<p>Week 15</p>	<ul style="list-style-type: none"> <li>- Sections</li> </ul>

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	<ul style="list-style-type: none"><li>- Full section ,Half sections</li><li>- Partial section</li></ul>
<b>19. Examinations:</b>	
<b>20. Extra notes:</b>	
<b>21. Peer review :</b>	