Course Descriptor
ENGR2002 ENGINEERING DRAWING

جامعة الشرقية
A' SHARQIYAH UNIVERSITY

Proposed Academic Year	2020/2021	**Last Reviewed Academic Year**	Spring Semester - 2020/2021
Course Code	ENGR2002	**Course Title**	ENGINEERING DRAWING
Credit hours	4	**Level of study**	Undergraduate
College / Centre	College of Engineering	**Department**	Civil & Environmental Engineering
Co-requisites		**Pre-requisites**	

1. COURSE OUTLINE

This course focus on teaching students engineering drawing through the practice of AutoCAD, completing laboratory drawings, and developing a set of working drawings. Principles of orthographic projection, dimensioning, section, isometric and working drawings are covered. Laboratory exercises are included.

2. AIMS

This course prepares students with the basic knowledge and skills of engineering drawing so that they can efficiently develop engineering plans and details. Students should be able to visualize, interpret, and produce working drawings through different drawing techniques in both freehand sketching, 2D and 3D drawings using AutoCAD.

3. LEARNING OUTCOMES *(Definitive) and* TEACHING, LEARNING and ASSESSMENT METHODS

Learning Outcomes (Definitive) Upon successful completion of this course, students will be able to:	**Teaching and Learning methods *(Indicative)***	**Assessment (Indicative)**
1. Apply the principles of orthographic projection	Lectures, Demonstration, Tutorials, lab work	Class test – actual drawing using autoCAD
2. Use freehand drawing in conceptualizing design ideas	Lectures, Demonstration, Tutorials, lab work	Class test – actual drawing using autoCAD
3. Understand drawing standards and section views	Lectures, Demonstration, Tutorials, lab work	Class test – actual drawing using autoCAD
4. Use proper dimensioning and to draw plates	Lectures, Demonstration, Tutorials, lab work	Class test – actual drawing using autoCAD
5. Use computer aided design software (CAD) software to develop and document design intent	Lectures, Demonstration, Tutorials, lab work	Class test – actual drawing using autoCAD

4. ASSESSMENT WEIGHTING

Assessment	Percentage of final mark (%)
Assignments	10%
Participation	10%
Midterm 1	20%
Midterm 2	20%
Finals	40%
TOTAL	100%

5. ACHIEVING A PASS

Students will achieve **4** credit hours for this course by passing **ALL** of the course assessments *[alternatively, list the compulsory pass assessments*]* and achieving a **minimum overall score of 50%**

NB *Ensure that ALL learning outcomes are taken into account

6. Course Delivery Plan

LECTURE TOPIC	TIME (HOURS)
Introduction to engineering drawing	3
Engineering drawing basics, glass box approach and orthographic view	3
Exercise 01 - Orthographic view	3
AutoCAD environment, drawing unites, drawing limits, Zoom, Draw commands – Line – Rectangle - Object snap – Snap and Grid	3
Exercise 02 – Sketch of repetitive floor plan	3
Layers - Text	3
Exercise 03 – Improving repetitive floor plan	
Dimensions: Linear Dimension, Baseline Dimension, Continue Dimension	3
Exercise 04 – adding dimensions to repetitive floor plan	3
Multiline - Hatch	3
Exercise 05 -	
Modify commands: Offset, Array, Extend, Trim, Mirror, Move	3
Exercise 06 – Plan and sections	3
Working with blocks, Block Library, Inserting Blocks	3

Exercise 07 – Floor plan details	3
Dynamic Blocks	3
3D drawing, Isometric view, 3D operations, Solid editing, Extrude	6
Project	12
TOTAL HOURS	**60**
Plus **RECOMMENDED INDEPENDENT STUDY HOURS**	**120**
TOTAL COURSE HOURS	**180**

7. RECOMMENDED READING

Core text/s:

AutoCAD 2015 tutorial –First Level: 2D fundamentals; by Randy H. Shih, Oregon Institute of Technology, SDC Publications

Technical Drawing 101 with AutoCAD 2017 (2016), Douglas Smith and all, SDC publications,

Textbook of Engineering Drawing (2008), K. Venkata Reddy, Second Edition, BS Publications

Library + online resources:

https://www.pdfdrive.com/textbook-of-engineering-drawing-e28918244.html

https://www.pdfdrive.com/introduction-to-autocad-2017-2d-and-3d-design-d184816941.html

https://www.pdfdrive.com/technical-drawing-101-with-autocad-2017-d158557939.html