

# IX CHE129 Engineering Drawing & Graphics Lab

## Course Outlines

- **Title:** Engineering Drawing & Graphics Lab
- **Code Number:** CHE129
- **Semester:** 2<sup>nd</sup>
- **Credit hours:** 1
- **Pte-requisites course requirements/ skills:**
- **Learning Outcomes:**

Upon successful completion of the course, the students will be able to

1. Create accurate engineering drawings using appropriate standards and conventions.
2. Interpret technical drawings and graphical representations in engineering contexts.
3. Utilize CAD software to produce and modify engineering graphics efficiently.

- **Contents**

- **Unit I: Introduction to Engineering Drawing**

- 1.1 Importance of Engineering Drawing
    - 1.2 Types of Engineering Drawings (Orthographic, Isometric, etc.)
    - 1.3 Drawing Instruments and Equipment

- **Unit II: Drawing Standards and Conventions**

- 2.1 Understanding Drawing Standards (ISO, ANSI)
    - 2.2 Line Types and Symbols
    - 2.3 Dimensioning and Tolerancing

- **Unit III: Basic Drawing Techniques**

- 3.1 Sketching Fundamentals
    - 3.2 Orthographic Projection
    - 3.3 Isometric Projections

#### **Unit IV: Advanced Drawing Techniques**

- 4.1 Section Views and Auxiliary Views
- 4.2 Detail Drawings and Assembly Drawings
- 4.3 Exploded Views

#### **Unit V: Computer-Aided Design (CAD)**

- 5.1 Introduction to CAD Software
- 5.2 Creating 2D Drawings in CAD
- 5.3 3D Modeling Techniques

#### **Unit VI: Applications of Engineering Drawing**

- 6.1 Engineering Drawing in Design and Manufacturing
- 6.2 Communicating Design Intent through Drawings

- **Teaching-learning Strategies:**

The teaching and learning strategy has been designed on the understanding of concepts and the ability to critically analyze and apply the learned content through lectures, discussion, activities, case studies using computer, multi-media and writing board instructional aids.

Lab Lectures: 03 contact hours per week

- **Assignments- Types and Number with calendar**

A minimum of two assignments to be submitted before the written exam of final Term

- **Assessment and Examinations:**

Sr. No.	Elements	Weightage	Details
1.	Midterm Assessment	35%	Written/Practical examination at the mid-point of the semester.
2.	Formative Assessment	25%	It includes: Lab participation, attendance, assignments and performance on computer.
3.	Final Assessment	40%	Written/Practical examination at the end of semester.

- **Textbooks and reference readings**

1. Madsen, D. A., & Madsen, D. P. (2016). Engineering drawing and design (6th ed.). Cengage Learning.
2. Giesecke, F. E., Mitchell, A., & Hill, I. L. (2016). Technical drawing (14th ed.). Pearson.
3. Muccio, D. (2021). AutoCAD 2022 for the interior designer. Cengage Learning.
4. Bethune, J. D. (2014). Engineering graphics with AutoCAD (2nd ed.). Cengage Learning.
5. Goetsch, D. L., & McCauley, W. J. (2016). Fundamentals of engineering drawing (8th ed.). Pearson.
6. Bethune, J. D. (2018). Engineering drawing and graphics using AutoCAD (2nd ed.). Cengage Learning.
7. Giesecke, F. E., et al. (2016). Technical drawing with engineering graphics (7th ed.). Pearson.