

UNIT 1

INTRODUCTION TO TECHNICAL DRAWING

Total Period: 1

Unit Outcome

At the end of this unit, students should be able to:

- ✓ Appreciate the contribution of graphical language (Drawing) in human civilization;
- ✓ Understand the basic concepts, purpose and areas/ professional disciplines of technical drawing.

Unit Overview

Technical drawing is a universal language by means of which the form, size, finish, colour, and construction of an object can be described accurately and clearly. Therefore it is the language used by engineers and architects to develop and record their ideas and to transmit them to those who are to execute their designs.

Without the ability to communicate well, engineers cannot function in a team and are of limited value to industry. Technical drawing is therefore essential communication tool for engineers. Using

established drawing conventions (orthographic projections and isometric drawings)

Lesson 1.1 *Introduction to technical drawing*

Number of Period: 1

Learning Competencies

At the end of this lesson, students should be able to:

- explain technical drawing.
- explain how and when drawing is originated.
- understand the difference in artistic and technical drawing.
- describe the area/professional disciplines of technical drawing involves.
- outline the use of technical drawing in designing;
- describe how to use technical drawing in the manufacturing industry.
- describe some important applications of technical drawing in every day life.
- state the advantage of CADD in related to manual work.
- explain the educational value of technical drawing.

Planning ahead

This lesson introduce students to the language of technical drawing. Through demonstration, and handouts, the students will learn the beginning standards for technical drawing.

1. Prepare visual aids to show “examples of drawings drawn by hand and CAD”
2. prepare photos of ancient graphics
3. Identify the Standards. Standards should be posted in the classroom for each lesson now onwards.
4. Review essential questions, “why is it important for drawing to be a standard, common language among all drafters or designers?”

Hints for Teaching

. Explain the “universality” of the graphic language and the need for all drafters and designers to be able to communicate worldwide in a common way. Explain the use of standards. Emphasize how drawing is a language made through symbols and the usage of lines to “speak” without using words.

Discussion

1. Ask students the kinds of drawings they can name. List them as they name them and ask whether they know what kind of designer does that kind of drawing, e.g., floor plans. Then list architect beside the term. Have students take notes from the list.
2. Explain process of going from idea into production. Illustrate Graphic Communications.
3. Explain and demonstrate traditional (board) drafting and CAD drafting.

4. Use visual aids to show “examples of drawings.”
5. Discuss the educational value of Technical drawing.
6. Explain the difference in artistic and technical drawing. Give definitions and have students list in notes.
7. At last, give peer group activity from the text and follow their participation.

Teaching Note

Technical drawing, also known as drafting, refers to the discipline of producing precise illustrations of things in fields like architecture and engineering. Generally, the term technical drawing pertains to any kind of drawing fashioned with technical ideas. Good examples of technical drawing are mechanical drawings, charts, and sketches. Technical drawings are a means of graphic communication, which aims to clearly and concisely communicate information about transforming technical ideas or concepts into reality. A technical drawing often contains both a graphic representation of its subject, and dimensions, notes and specifications.

Today the mechanics of the drafting task have been greatly accelerated through the use of computer-aided design and drafting systems, but regardless of whether a draft is drawn by hand or with computer assistance, the field-use-drawing must be reproducible with a version control system to maintain authorized and approved changes to the master document (or computer files, the modern analog).

In some fields, particularly electronics, draftsmen are also known by the ambiguous "designer", whose job would be distinct and separate from the engineers specifying and working out the design details. In short, draftsmen are communicators that are part of an engineering team charged with producing specialty documentation packaged as a design, which following the standards of the field, can be understood by others with the same training. Technical drawing in perspective is a universal picture language by which ideas and information may be readily available for others.

Lesson Guide

Period	Lesson title	Starter activity	Main activities	Concluding activities
1	1.1 Introduction	Ask brain storming question and discuss by listing the type and purpose of drawing around the school.	Assist students to discuss why technical drawing is a universal language and help them to do the activity 1.1 in the textbook	Summarize the lesson and give home work to list pros and cons of manual drawing and CAD system of drawing

Evaluation

Instruct students to:

- Explain why drawing is a universal language
- Identify the difference b/n artistic and technical drawings.
- List the classification of technical drawings.
- Differentiate the advantage and disadvantage between manual drawing and computer aided design software

- using line drawing show the direction from their home to school

Method

- Presentation (lecture)
- Demonstration
- Group discussion (6-8 students per a group)

Assessments

The teacher should follow and assess each student's work continuously over the whole activity of the lesson and compare it with the following description to determine whether the student has achieved the minimum required level.

Students working below the minimum requirement level will require extra help if they are to catch up with the rest of the class. They should be given extra attention in class and additional activities at the end of the lesson or during breaks.

Students working above the minimum requirement level should be praised and their achievements recognized. They should be encouraged to continue working hard and not become complacent.