



COURSE CODE: GEE 214
COURSE TITLE: ENGINEERING DRAWING
NUMBER OF UNITS: 2 Units
COURSE DURATION: Two hours per week

COURSE LECTURER: **ENGR. F. OAMEN ISAAC**

INTENDED LEARNING OUTCOMES

At the completion of this course, students are expected to:

1. Define and explain the uses of different drawing equipment.
2. Identify the different drawing equipment.
3. Layout drawing papers and prepare a title block.
4. Practically distinguish the types of dimensioning.
5. Carry out geometrical construction of different shapes.
6. Carry out isometric and orthographic drawing of objects.

COURSE DETAILS:

Week 1-2: *Introduction to Drawing Equipment and Dimensioning*

Week 3-4: *Geometrical Construction of Shapes*

Week 5-6: *Construction Involving Circles, Tangency and Loci*

Week 7-8: *Isometric and Orthographic Projections*

Week 9-10: *Development of Solids*

Week 11: *Intersection or Interpenetration of Solids*

Week 12: *Revision*

RESOURCES

• Lecturer's Office Hours:

• Engr. F. Oamen Isaac: Tuesdays 1-3pm.

• Books:

• *Engineering Drawing with Worked Examples* by M. A. Packer & E. Pickup, 3rd Edition ISBN: 0091264510. 1984.

• *Engineering Graphics Fundamentals* by Arvid R. Eide, Roland D. Jenison, Lane H. Mashaw, Larry L. Northup & C. Gordon Sanders, 3rd Edition ISBN: 0-07-019126-3. 1976.

Project:

- Dimensioning of objects
- Isometric and Orthographic Projection of various objects
- Homework + Project: ~ 30% of final grade.
- **Exams:**
- Final, comprehensive (according to university schedule): ~ 70% of final grade

Assignments & Grading

- **Academic Honesty:** All classwork should be done independently, unless explicitly stated otherwise on the assignment handout.
- You may discuss general solution strategies, but must write up the solutions yourself.
- If you discuss any problem with anyone else, you must write their name at the top of your assignment, labeling them “collaborators”.
- **NO LATE HOMEWORKS ACCEPTED**
- Turn in what you have at the time it’s due.
- All homeworks are due at the start of class.
- If you would be away, turn in the homework early.
- Late construction of projects will not be accepted, but penalized according to the percentages given on the syllabus.

PREAMBLE:

Engineering Drawing is a means of communication used by engineers to represent to scale the features of an object and ideas on paper. It’s studied by all technical men and women. These technical personnel may be involved in the production or manufacturing, construction of buildings, bridges, roads, dams, etc. Students should not have the idea that Engineering Drawing is the same as Fine Art or Photography. Engineering involves the production of drawings to scale with all dimensions and labeling of objects. No shading or colouring allowed in Engineering Drawing like in the Fine Art.



Lecture note by Engr. F. Oamen Isaac is licensed under a [Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License](https://creativecommons.org/licenses/by-nc-nd/4.0/)

INTRODUCTION

Engineering drawing is concerned mainly with using lines, circles, arcs etc., to illustrate general configuration of an object, however, it is very important that the drawing produced to be accurate and clear.

The ability to read and understand drawings is a skill that is very crucial for technical education students; this text aims at helping students to gain this skill in a simple and realistic way, and gradually progressed through drawing and interpreting different level of engineering drawings.

Some basic equipment are necessary in order to learn drawing, they are as follows:

INTRODUCTION TO DRAWING EQUIPMENT

T-SQUARE

A T-square is a technical drawing instrument primarily guides for drawing horizontal lines on a drafting table, it also used to guide the triangle that is used to draw vertical lines. The name “T-square” comes from the general shape of the instrument where the horizontal member of the T slides on the side of the drafting table. See Fig. 1.



Fig. 1. T-Square

SET SQUARE

A set square or triangle is a tool used to draw straight vertical lines at a particular planar angle to a baseline. The most common form of Set Square is a triangular piece of transparent plastic with the centre removed. The outer edges are typically beveled. These set squares come in two forms, both right triangles: one with 90-45-45 degree angles, and the other with 90-60-30 degree angles. See Fig. 2.

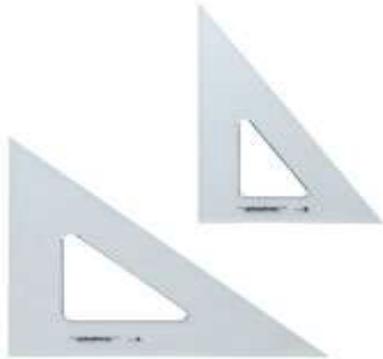


Fig. 2. Set Square



Lecture note by Engr. F. Oamen Isaac is licensed under a [Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License](https://creativecommons.org/licenses/by-nc-nd/4.0/)