
Module 0: INTRODUCTION

Objectives

- Introduction engineering drawing – its need and application.
- Basic drawing instruments and their uses.
- Familiarization with some basic drawing technics and conventions.

Basic guidelines

Use of Pencils

Generally two types of lines (of thickness ratio 2:1) are needed for drawing: HB pencil for **thick lines** (e.g. *object lines*) and H pencil for **thin lines** (e.g. *projection lines*). Any line drawn should be of uniform thickness.

Note: For machine drawing, ground lines and projection lines are not shown in views. However, if those lines are required, they are drawn in the form of very thin lines for ones own necessity (i.e. presence of the lines should be hard to be revealed unless noticed at very closely). These lines are to be drawn by H pencil with a very light pressure on it or 2H pencil.

Preparation of Drawing Sheet

Border lines, Title Block and Name Plate are the three essential parts which are to be completed in all respects from the hostel – conventions regarding them are to be strictly adhered to. Solutions for a particular plate are to be accommodated in one drawing sheet only (unless otherwise instructed). While preparing the drawing sheet Title Block is to be provided on the front side and the reverse with Name Plate.

Basic guidelines

Lettering in the drawing sheet

For uniform legible writing, stencils are preferable to free hand writing. But, as different sizes of stencils may not be always available, students need to learn free hand lettering (**keeping in mind that free hand writing is in no way free style writing**). Generally, all the writings in drawing sheets are to be done in block letters with HB pencils.

Recommended size of letters:

Title of drawing, cutting plane designation, problem no.	8 – 10 mm
Subtitles, other statements like denoting scales, designating parts etc.	4 – 6 mm
Dimensioning, legends, etc.	3 – 4 mm

Dimensioning

Aligned dimensioning system is to be followed in the drawing classes. Dark triangular arrow-head-termination (1:3) is to be used, in general, for dimensioning a length (or an angle). Unless otherwise specified, students should write "ALL DIMENSIONS ARE IN mm" at the top of the Title Block.

Drawing instruments and items

Cloth Duster

Brown Paper

Drawing Sheet (size approx 375 mm x 550 mm)

Board Clips or tape (Board pins discouraged)

Mini Drafter

Set-squares — 30°-60°, 45°-45° (diagonal approx 275 mm)

Diagonal Scale

Protractor

Compass – Big, Small

Divider – Big, Small

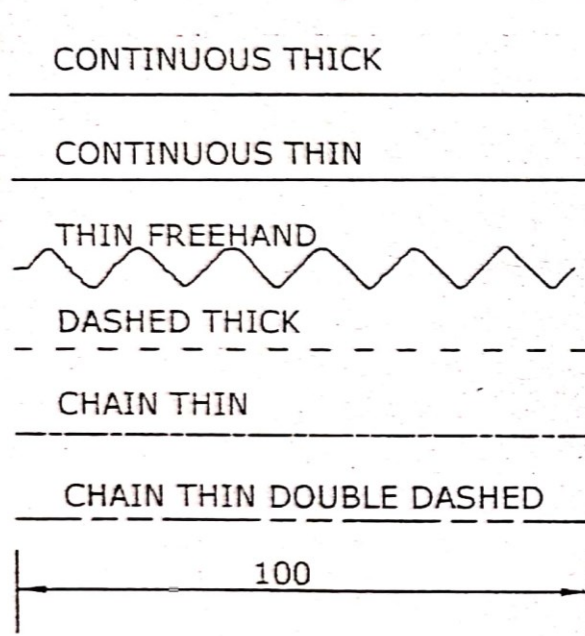
10 mm Lettering Stencil

Pencils – Grade H, HB, optional – 2H

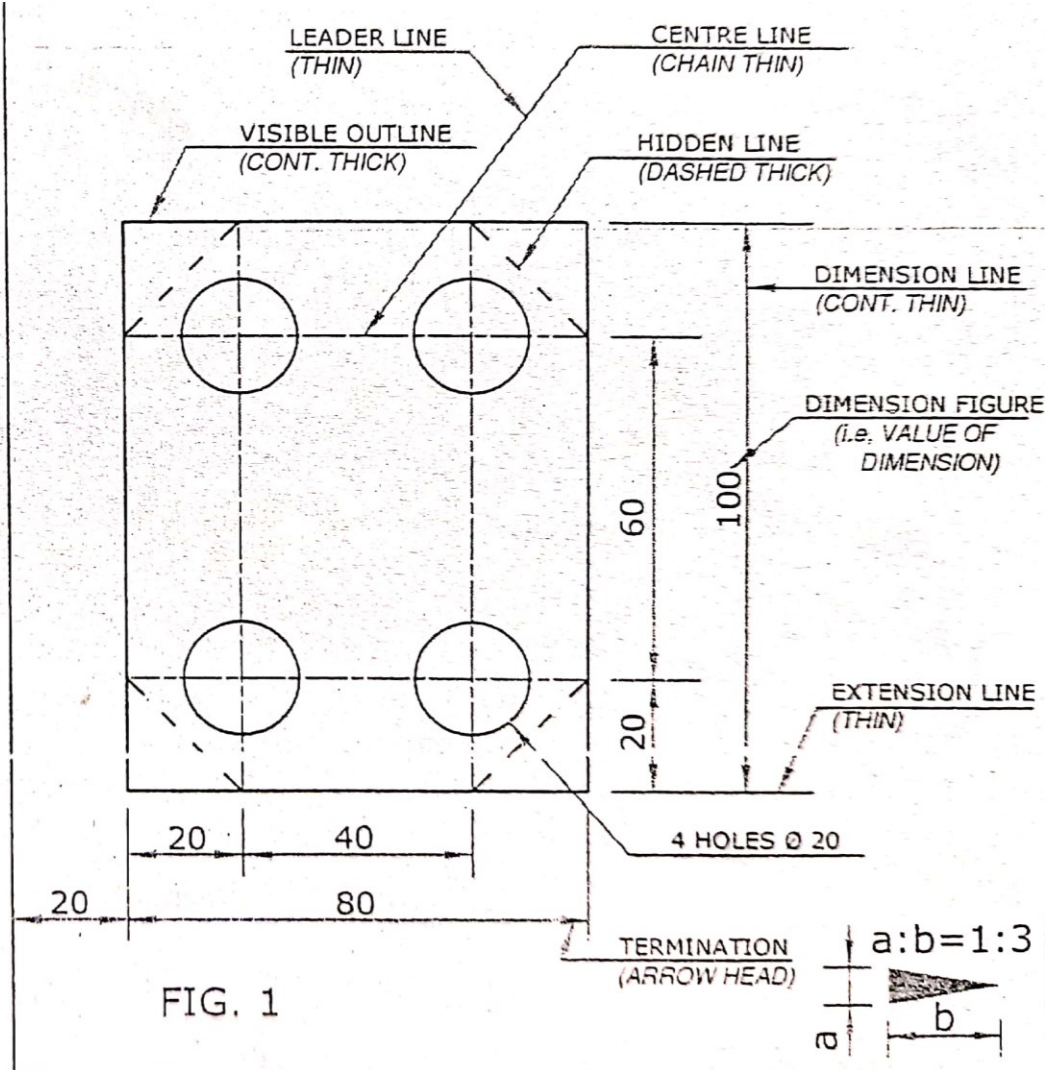
Pencil sharpener and sand paper

Eraser – good quality

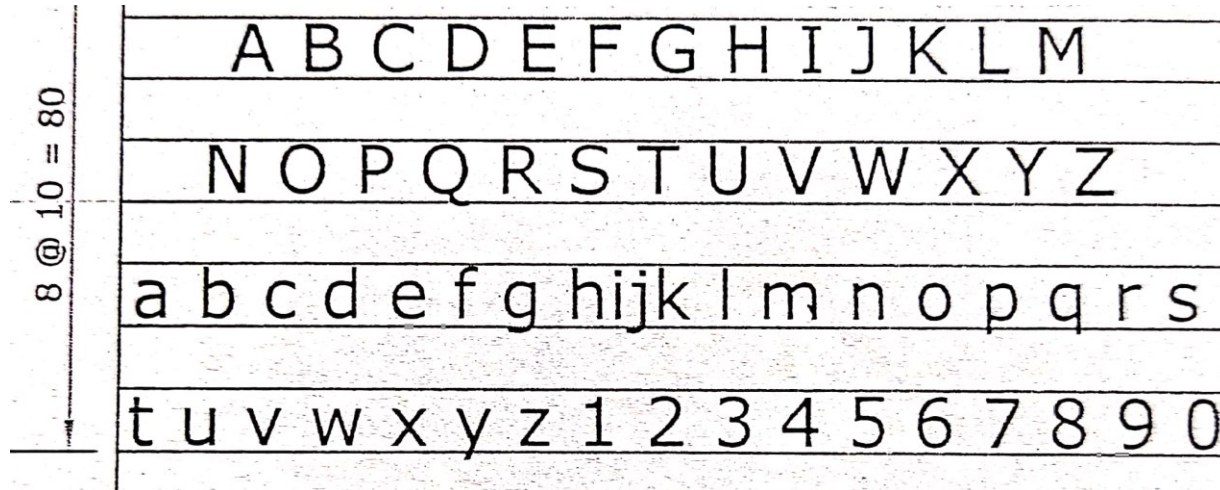
Conventions: Line types and dimensioning



NOTE: THE RATIO OF THICK TO THIN LINE $\geq 2 : 1$ IN ANY DRAWING



Conventions: Lettering and nameplate



SCALE 1 : 1
ALL DIMENSIONS ARE IN mm

NATIONAL INSTITUTE OF TECHNOLOGY DURGAPUR
ENGINEERING GRAPHICS : XES 51
1ST SEMESTER, SESSION : 2019-20
NAME :
ROLL NO. ; SECTION :
PLATE NO. : 1 COMMENCED ON :

13 @ 5 = 65

To be drawn at bottom right corner of drawing sheet

Assignment#0

Reproduce the following figures in 1:1 scale and following standard conventions.

A REGULAR
PENTAGON (SIDE 25)

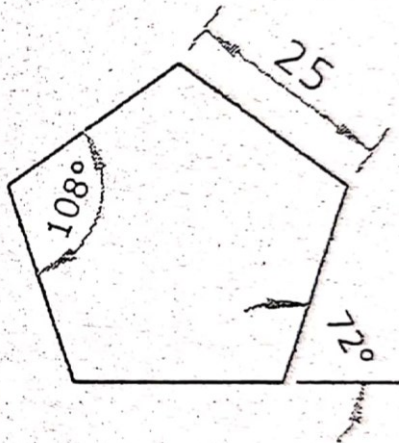


Figure 1

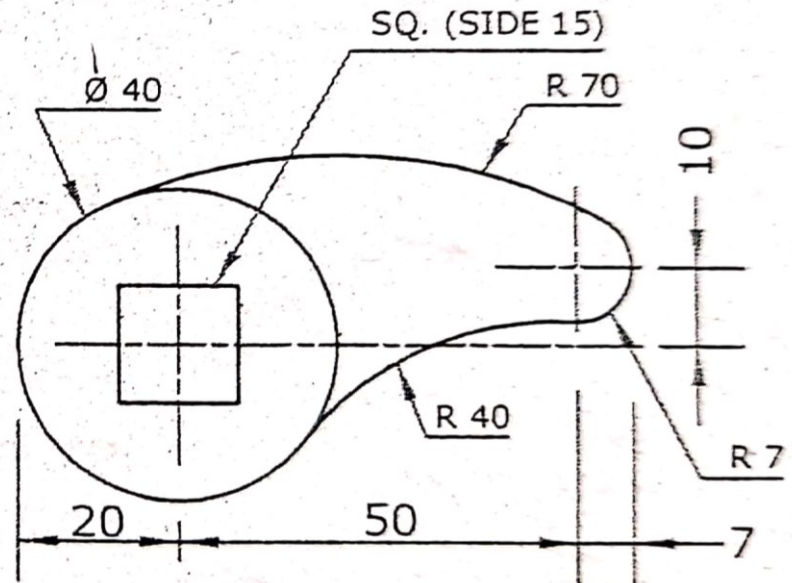


Figure 2

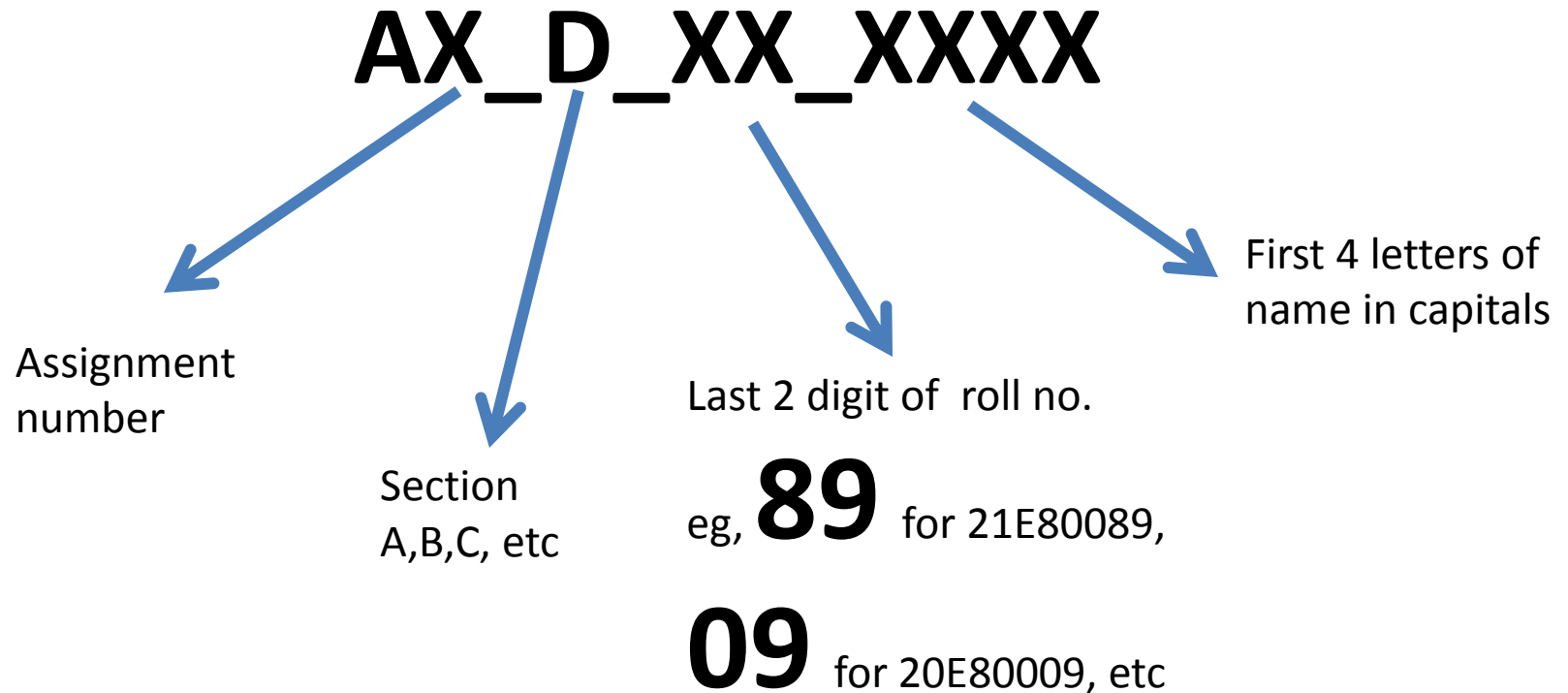
Last date of submission: 30/12/21

Instruction regarding format of assignments

- Assignments will be given at the end of every lecture. These are meant for general practice as well as evaluation contributing to the final grading.
- Students are expected to solve them before the next lecture i.e, within a week. However, last date of submission will be the 10th day after the date when the assignment was given. No late submission is allowed under any circumstance.
- All problems are to be solved in A4 sheet paper/ similar size white copy, lab notebook, etc. Problems are selected keeping in mind that students will be solving them at home. Hence, a good quality geometry box, one used in high school, HB, H & 2H pencils and a good quality compass should be sufficient (for this online course).
- Adoption of any unfair means, if caught, will lead to severe consequences.

Instruction regarding format of assignments

- Assignment no. , name, roll no. should be clearly written at the top of every A4 sheet.
- Assignments are to be submitted in a single pdf file of image(s) of the hand drawn A4 sheet(s) in MS TEAMS. The file name should be in following format.



A sample to show format of assignment solution to be submitted

