

## Lab Session I

### Introduction to **Solid Edge V14**:

- Developed by **EDS** (Electronic Data Systems Corp.)
- CAD software for three basic environments **Draft** (2D), **Part Modeling** (3D) and **Mechanical Assembly**.

### Advantages:

- 1) The aforesaid environments are tightly integrated to facilitate the product development.
- 2) Drawing editing by simple commands like rotate, move etc.
- 3) Automatic orthographic view creation (in Draft Environment) from the part model (in Part Environment).

Open Solid Edge V14 from the '**Engineering Fundamentals**' folder.

Standard Desktop in '**Draft Environment**' consists of:

- Drawing Screen (the working sheet)
- Ribbon Bar
- Drawing View
- Drawing tools
- Relationship
- Main Bar
- Pull down menus

Extension for a drawing made in Draft Environment is **“.dft”**

All Commands can be executed by:

1. **Clicking** on the icon in the toolbar, and
2. Feeding the inputs either by clicking by mouse or by **typing** in the ribbon bar boxes.

General Description of Commands:

1. Basic commands like NEW, OPEN, SAVE etc. are in the 'File' menu.
2. **Esc** key to cancel a command.
3. Undo- to undo the commands previously executed.
4. Redo- to redo the previous commands.

Coordinate System:

#### **A) Absolute Vs Relative**

1. Absolute – With respect to the origin.
2. Relative – With respect to any other object on the screen; Using the SketchPoint command.

## **B) Cartesian Vs Polar**

1. Cartesian – Specify the coordinates with respect to the X, Y and Z direction of the point. Eg- 20, 30, 50.
2. Polar – Specify the distance and the angle(both with respect to the Origin)

### Sheet Setup:

- 1) Go to 'File' menu and click on 'Sheet Setup'
- 2) Click on the **Size** tab and select '**A4 Wide**'
- 3) Click on the **Background** tab and select '**A4**' and click OK and click on the 'Fit' icon on the Main Bar.
- 4) Go to 'View' menu and click on 'Background Sheet'.
- 5) Click on the Text icon from the Drawing tools and type the required fields on the background.

### Useful Commands:

- 1) **Line**: Can be executed by-
  - a) Clicking on the line icon, and
  - b) Clicking on the start and the end points or  
by clicking on the start point and feeding the length in the ribbon bar box.
- 2) **Circle**: Can be executed by-
  - a) Clicking on the circle icon, and
  - b) Clicking on the center point and periphery point or  
by clicking on the center point and feeding the radius in the ribbon bar box.
- 3) **Arc**: Can be executed by-
  - a) Clicking on the Arc icon, and
  - b) Clicking on the two points between which the arc is wanted, and
  - c) Click on a third point where the arc radius is correct, or  
by feeding the arc radius in the ribbon bar box.
- 4) **SketchPoint**: Can be executed by-
  - a) Selecting the "SketchPoint" from the Tools menu.
  - b) Placing the 'Target' point from where the relative coordinates are known.
  - c) Target point can be disabled and changed using the tabs on the Ribbon Bar.
- 5) **Dimensioning**: Can be executed by-
  - a) Clicking on the "Smart Dimension" tool in the Drawing Tools bar, and then clicking on the line whose dimensions you want to show, or

- b) Clicking on the “Distance Between” tool in the Drawing Tools bar, and then clicking on the lines between which you want to show the dimensions.

**Printing** instructions for the assignments:

- 1) Remember to make A4 Wide as the sheet setup and write the appropriate fields in the background.
- 2) Click on Print from the File menu and select the appropriate printer.