CADT 103
2-D CAD Graphics

Description:

CADT 103 is developed for the entry-level student into the Computer Aided Design Technology program. This course focuses on learning two-dimensional (2-D) Computer Aided Design (CAD) software and provides a comprehensive understanding of 2-D CAD software. The latest version of 2-D CAD software will be used in a windows operating environment. While learning 2-D CAD software, geometric construction techniques, and developing visualization skills will also be emphasized along with plotting in paper space. Concentrated efforts will be made to stress the importance of accuracy and clarity of drawing solutions. At the same time, students will develop confidence and speed in drafting. In the lecture/Lab environment, students will be presented with hands-on activities to reinforce their learning. The content of this course will prepare students for CADT-105 and CADT-107.

The student will be able to:

Demonstrate Proper Use and Care of Equipment Hardware

- Operate computers, printers and plotters.
- Demonstrate correct handling and operation of storage media.
- Recognize availability of information services (e.g., electronic mail, Internet).
- Demonstrate proper file management techniques (e.g., copying, deleting).
- Format storage media.
- Identify, create, and use directory structure and change directory paths.
- Demonstrate proper file maintenance and backup procedures.
- Translate, import, and export date files between formats (e.g., DXF, DWG, DWT, and PDF).
- Use on-line help.
- Save drawings to storage devices.

Demonstrate Geometric Construction with CAD

- Manipulate points, lines, and planes in space for the purpose of establishing true positions, true sizes, and true shapes of features.
- Use drafting equipment to construct basic geometric figures.
- Use geometric principles to bisect lines and angles.
- Use geometric construction to construct perpendicular and parallel lines.
- Use geometric principles to construct point to circle tangent lines and locate the point of intersection.
- Use geometric principles to construct tangent arcs.
- Use geometric principles to construct ogee curves.
- Use geometric principles to construct ellipses.

General CAD Skills

- Use properties manager to edit objects.
- Copy objects and paste.
- Rotate objects.
- Cut and paste objects.
- Create fillets and chamfers.
- Make objects longer or shorter.
- Measure and divide objects.
- Use grips to edit objects.
- Fill areas with patterns and solids.
- Control objects with the Object Properties Toolbar.
- Use the Zoom and Pan functions.
- Use blocks and block attributes.
- Create tables.
- Create and use Templates.
- Use External References.
- Use various basic dimensioning skills.
- Use Design Center.
- Use object snap settings to aid in geometric construction techniques.

Organizing Objects with Layers

- Organize objects using layers and line types.
- Assign layers and line types to objects.

Create, Place and Manage Symbols

- Use Content Explorer to manage symbols and drawings.
- Create and insert blocks and Wblocks.
- Create intelligent symbols.

Dimension AutoCAD Drawings

- Use dimension styles to define and change dimensions.
- Dimension in US customary inch system and metric system as well as other units.
- Dimension with tolerances.
- Prepare drawings containing linear standard dimensions and notes.
- Use linear, angular and radial dimensions.
- Use dimension overrides to break dimension style rules.
- Create center marks, leaders and ordinate dimensions.
- Prepare drawings that contain circular standard dimensions.

Place Text in Drawings

- Use the Paragraph Editor to create and edit text.
- Control text appearance with the Style Dialog Box.

Scale and Layout Drawings

- Use the Drawing Setup Wizard to setup drawings.
- Create custom drawing sheets.
- Control the scaling of a drawing, its views, dimension scale and linetypes.
- Use layers to control objects and views.
- Plot and/or print drawing to proper scale on hard copy.
- Plot file at a specified location.

Prepare pictorial drawings

- Prepare isometric drawings.
- Prepare cabinet drawings.
- Prepare one- and two-point perspective drawings.