

CENTRE FOR DEVELOPMENT OF IMAGING TECHNOLOGY
TECHNOLOGY EXTENSION DIVISION

SYLLABUS

CERTIFICATE IN CAD TECHNOLOGY (CCAD)

Duration: 3 Months

Eligibility: SSLC or Equivalent

SCHEME OF STUDY

CCAD 101	PC Software
CCAD 102	CAD and Tools
CCAD 103	Lab I- CAD and Tools (Including 2D and 3D Drawings)

PAPER I - PC SOFTWARE

Module - I (10 Hrs)

Introduction

Generation of computers, types of computers, micro, mini, main frame & super computers, applications, functional units & operation concepts.

Memory Structure

Basic concepts, types of memories from semiconductor RAMs, Memory system Considerations, ROMs, concepts of cache and virtual memory.

Processor Unit

Basic concepts, sequence of operations to execute a complete instruction, hardware control and micro programmed control-brief introduction.

Secondary Storage

Magnetic disk systems-floppy and hard disk -concept of disk operations-characteristics of different types of disk systems-magnetic tape systems-concept of optical storage devices.

I/O Devices

Various I/O devices-concept of video terminals-video displays-alphanumeric displays-graphic displays.

Printers & Plotters — Types-Specifications-Characteristics.

Module - II (10 Hrs)

Operating System

DOS

Introduction, Different Operating Systems, Loading and Quitting the Operating Systems, Important DOS Commands (Internal and External), File and Directory System Concepts in DOS.

WINDOWS

Windows introduction

Operating System

Desktop icons

My Computer, Recycle Bin, Internet Explorer, Network Neighbourhood, My Documents.

Working with windows

How to create a Folder, Copying and cutting files, Renaming.

Start icon

Programs, Favorites, Documents, Settings, Find, Run, Shut down, application icons

Module - III (10 Hrs)

Documentation using MSWord & Open Office Writer

An introduction to word

The Word workspace, Starting and quitting Word, Creating and Manipulating Various documents, Editing of proofing files, Merging documents and macros.

How to use mouse and menu

Working with dialog box.

Primary commands in file menu

The open command, The New command, The Save As and Save all commands, The Close command, The Page Setup, The Print Exit command.

Edit menu commands

The Cut, Copy and Paste commands, The Undo and Repeat commands.

Format commands

Font commands, Paragraph command.

Other menu

The View menu, The Inset menu, The Tools menu, The Table menu, The Window menu.

Spread Sheet Preparation Using MS Office & Open Office

Building a simple worksheet

Entering Text, Entering Values, Entering Dates and Times, Moving Around, Selecting Ranges, Using Menu, Using Tool Bar, Using Shortcut Menus, Changing entries, Copying entries, Moving Entries, Inserting and Deleting cells.

Formatting Basics

Changing Character Style, Changing Alignment, Changing Column Width.

Working with Multiple worksheet

Copying entries between work books, Moving sheets between work books, Deleting sheets, Quitting Excel.

Opening existing workbooks

Simple calculations. Doing Arithmetic, Totaling column of values, Naming cells and Ranges.

Formatting Text

Displaying dollars and cents, Formatting decimal places, Formatting dates, Copying style and formats.

Formulas that make decisions — Using the IF function, Using the nested IF function, Copying formulas.

Checking Spelling, Printing Worksheets, Preview Worksheets, Setting up the pages.

Sorting data, Keeping Leading in View, Finding records, Adding and deleting Records, Filtering Records.

Plotting charts, Sizing and moving charts, Updating charts, Changing the chart type, Using chart auto format.

Creating Macros, Recording Macros, Running Macros.

Module - IV (10 Hrs)

Database Concepts Using MS Access

Introduction to Database — Database System Concepts, DBMS and RDBMS

Planning and designing a database

Creating a database — Sorting Data in Tables, Fields, Records, Two ways to Create a Database, Creating a Database with Database Wizard

Building and Modifying Tables

Create Tables by using the Table Wizard, Create Tables from Scratch, Field Names

Data Types and Field Properties, Modify Tables Using Design View, Entering Data in a Data sheet, Editing Data in a Datasheet, Changing the Width of Columns and Height of Rows, Changing the Order of Columns, Setting of Primary Key

Defining Relationship — Establish Relationship, Enforce Referential Integrity

Querying a Database — Constructing a Query, Creating the Query, Choose the Tables to Query, Field to Query, Entering the Query criteria, Saving the Results of a Query

Different Kinds of Queries — Crosstab, Update, Delete, Append, Make Table

Building and Modifying Forms — For Entering and Viewing Data, Creating a Form (Design View of Form Wizard), Use the Control Toolbox to Add Controls, Modify Format Properties (Font Style, Size, Color, Caption, etc.) of Controls, Use of Form Sections (Header, Footers and Detail), Use of Calculated Control on a Form.

Module - V (10 Hrs)

Slide Presentation Using MS Office & Open Office

Power Point

Main Features of Power Point

Making the Presentation

Creating Template with the Auto Content Wizard. Creating a Presentation with a Template. Creating a presentation from Scratch

Different Views

Normal Slide, Outline, Slide Sorter, Slide Show, Notes, Slide Master

Animation ,ART and Sound

Controlling Transitions between slides. Animating Different Parts of a slide. Inserting a Motion Clip. Including Sounds in slides.

Including Graphs, Charts, Tables and Columns

Organization Chart Slide, Creating a table Slide. Creating two column Slide, Module 1: Showing A Presentation, Rehearsing / Timing a Presentation, Designating some slides as “Hidden”, Viewing Slides Anywhere in a Slide Show.

Techniques for Making a Show Livelier

Office Connections

Presenting with the help of other Office Programs Importing the text from a Word Document.— Printing a Presentation.

Reference Text :-

1. Mastering and Using Microsoft Office — H.Albert Anpier ,Philip J.Judd — Galgotia Publications
2. Learn Microsoft Word — Janet Rampa
3. Mastering Office 2000 ,Professional Edition — Gini Courter ,Annette Marquis

www.cditi.org

PAPER II - CAD AND TOOLS

Module – I (10 Hrs)

AUTOCAD — Introduction and Background — Pre-Flight Checks — Brief History — Graphics Primer — Math Background—The Basics — Scale — The AUTOCAD Interface—Drawing Objects — Lines — Circles —Text — Arcs — Rectangles — Complex Entities—Navigation & Control — World Coordinate System — Zoom & Pan — Snapping — Layers — Colors — Linetypes — List & inquiry

Module – II (10 Hrs)

Editing — Selecting Objects — Copying Objects — Moving Objects — Resizing Objects — Editing Objects — Trim and Extent — Grips—**Power Tools** — Blocks — Hatch Patterns — Arrays — Mirror — Filtering Selections — Groups—**Printing & Plotting** — Model Space — Paper Space

Module – III (10 Hrs)

AUTOCAD – 2D Drawings — Part 1

Drawing — Straight lines — Rectangles — Circles — Arcs — Polygons — Ellipse — Text Creation — Hatching, etc—**Formatting** — Units Formats — Dimensions styles — creating Layers — line type — Object's Colors — Multiline Styles Line-weight settings — Point Styles,etc

Files — Opening and Saving Files — Exporting Files — Drawing recovery — auditing and recovering the error files — purging the unwanted blocks — layers — dimension styles, etc

Module – IV (10 Hrs)

AUTOCAD – 2D Drawings — Part 2

Automatic Dimensioning — Vertical / Horizontal Dimensions — Inclined Dimensions — Radius of circles — Diameter of Circles — Tolerance,text and lines alignment

Editing — Copy — paste — paste special — copy with base point — paste to original coordinate , etc

Modifications — Erase — Copy Objects — Move objects from one place to another — Text edit — extend lines and arcs to a boundary — trim objects within a boundary — change object's within a boundary — change object's property [colour,line type, thickness,etc]— edit hatches, edit texts

Tools — Spell checking — enquiries like area — distance and volumes — table settings,etc.

Module – V (10 Hrs)

AUTOCAD – 3D Drawings

Drawing — Drawing solids like Boxes, wedges,sphere,cylinder,cone,Torus, and 3D surfaces,etc

Modifications — solid editing like 3D Rotating,3D Array,merging of more than two objects

AUTOCAD — OPTIONS and CUSTOMISATION

Tools — Options like changing AUTOCAD background colour, fonts of menus,setting of automatic saving time,saving open files locations,changing or setting the template file locations,setting the temporary file locations,set the saving file type,set the plotter,set the default line weight,etc

Customisation of menus,tool bars,etc

Reference Texts :-

1. AUTOCAD 2002 with applications — Sham Tickoo — Tata Mc GrawHill