

## Unit 51: Computer-aided Drafting and Design for Construction

Unit code: H/600/0232

OCF Level : 3

Credit value: 10

Guided learning hours: 60

### Unit aim

This unit aims to give learners the opportunity to gain knowledge of how CADD is used to produce drawings, including the software and hardware components, and skills in using CADD software to produce 2D drawings and 3D models.

### Learning outcomes and assessment criteria

In order to pass this unit, the evidence that the learner presents for assessment needs to demonstrate that they can meet all the learning outcomes for the unit. The assessment criteria determine the standard required to achieve the unit.

Learning outcomes	Assessment criteria
1 Know the advantages of using CADD in comparison with other methods of producing drawings	1.1 Describe the advantages, compared to other methods, of producing drawings electronically using a CADD package
2 Know about the software and hardware required to produce CADD drawings	2.1 Describe the software and hardware required to produce CADD drawings
3 Be able to use CADD software to produce 2D construction drawings and details	3.1 Prepare a template drawing using a CADD system, saving it to a file
	3.2 Use 2D CADD features to produce a hard copy of a graphical drawing showing a plan, section and elevation at different scales
4 Be able to use CADD software to produce 3D construction virtual models	4.1 Use 3D CADD features to produce a simple virtual model, plotting out various views that are fit for purpose

## Unit content

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### **1 Know the advantages of using CADD in comparison with other methods of producing drawings**

*Advantages of CADD:* quality; accuracy; time; cost; electronic transfer of information; links with other software eg rendering software, animation software, finite element analysis (FEA)

*Other methods:* manual drafting; model making

### **2 Know about the software and hardware required to produce CADD drawings**

*Software:* operating systems; CADD software packages eg AutoCAD; minimum system requirements eg hard disk space, memory required, processor, video card

*Hardware:* keyboard; mouse; other input devices eg light pen, digitiser, joystick, thumbwheel; monitor; printer; other output devices eg plotter, rapid prototyping; storage eg floppy disk, hard disk, memory stick, CD, network

### **3 Be able to use CADD software to produce 2D construction drawings and details**

*2D CADD features:* set up of drawing; drawing aids; drawing and editing commands; line-weights and widths; layer convention and controls; text and dimensioning commands; changing properties; layouts; model space; paper space; different scales on the same drawing; plotting routines

### **4 Be able to use CADD software to produce 3D construction virtual models**

*3D CADD features:* component libraries; model space; paper space; different scales on the same drawing; plotting routines

*Model:* wire frame, extruded and surface developments; elevations and sections eg 3D views, plan views, perspective views including walk-throughs with rendered and textured surfaces