

DES24 Create 3D Models using a Computer Aided Design System - SQA Unit Code H9X4 04

Unit Summary

This unit is about the skills and knowledge required to prepare the 3D CAD environment, creating and modifying 3D models, and producing output from the 3D model.

What you must be able to do:

- a) Establish the coordinate system to meet the requirements of the work
- b) Establish the orientation to meet the requirements of the work
- c) Establish the views to best meet the work requirements
- d) Create entities in 3D space to meet the work requirements
- e) Manipulate entities in 3D space to work requirement
- f) Create surfaces in 3D space to meet the requirements including ruled and revolved
- g) Modify existing 3D model to meet the requirements
- h) Apply basic rendering techniques to a 3D model
- i) File is saved in various formats for retrieval as per standard operating procedures
- j) Physical properties are extracted to meet requirements including volume, mass and centre of gravity

What you must know:

- 1) Purpose for which the 3D model is to be developed
- 2) Appropriate coordinate system for the job
- 3) Reasons for selecting the chosen coordinate system
- 4) Orientation of the model with respect to the coordinate system
- 5) Number of views required to establish the model
- 6) Procedures for creating entities in 3D space
- 7) The entities that can be created/manipulated in 3D space
- 8) Procedures for manipulating entities in 3D space
- 9) Procedures for creating ruled and revolved surfaces in 3D space
- 10) Applications of ruled and revolved surfaces
- 11) Procedures for modifying existing 3D models
- 12) application of basic rendering techniques to a 3D model
- 13) Procedures for saving drawing files
- 14) The various formats in which drawing files can be saved
- 15) Reasons for using different formats when saving drawing files
- 16) Procedures for extracting data with respect to the physical properties of shapes created in 3D space
- 17) The physical properties of shapes created in 3D space that can be extracted from the drawing file
- 18) Hazard and control measures associated with using computer aided design system, including housekeeping
- 19) Safe work practices and procedures