

J4.12 Produce CAD/CAM jewellery or silverware designs and prototypes SQA Unit Code H9TP 04

Unit Summary

This unit covers the skills and knowledge required to design, develop and produce new products, using computer-aided design (CAD) and computer-aided manufacturing (CAM) technology. You will be required to produce CAD designs, transfer the design data to CAM systems and manufacture prototypes using this technology. You must also ensure that you understand what you need to do to perform the required activities and attain the required standards of workmanship. You will be expected to take personal responsibility for your own actions and for the quality and accuracy of the work.

Performance Indicators

You will be able to:

- a) Select the appropriate software for the required specification
- b) Identify problems with faulty equipment or software operation and carry out appropriate actions to overcome the problems
- c) Use CAD software to produce complex designs for either jewellery or silverware products
- d) Produce complex sample models or prototypes using CAM equipment
- e) Create clear and concise documentation, storing files and folder in an appropriate format
- f) Check that the completed work is to an acceptable standard and to specification

Knowledge and Understanding

You will know and understand:

- 1) How to use CAD workstation software and hardware
- 2) Typical faults that can occur with CAD/CAM techniques and processes and the procedures to be undertaken if a fault is identified
- 3) The principles of computer generated graphics and drafting skills
- 4) How to inspect for errors on any CAD/CAM designs made and the appropriate remedial action to take if errors are found
- 5) The documentation to be completed at the end of CAD/CAM activities
- 6) The mathematical calculations used in design
- 7) How to interpret drawn images
- 8) Current engineering drawing practice conventions
- 9) CAM techniques and processes
- 10) The manufacturing processes and techniques used
- 11) How to check that the finished prototype meets the required standard
- 12) How to record, store and protect newly completed designs