Specification of Competency Standards
for the Manufacturing Technology Industry
Unit of Competency

Functional Area - Product Design and Development

Title	2D computer aided drawing, 3D surface & solid modeling and parametric design
Code	106391L3
Range	This unit of competency is applicable to design and development departments of manufacturing technology industry. Practitioners should be familiar with relevant knowledge of computer-aided design and capable to apply in the product design.
Level	3
Credit	6 （For Reference Only）
Competency	Performance Requirements 1. Understand knowledge of 2D graphics, 3D surface and entities simulation as well as parametric design • Understand usage of commonly used CAD systems, such as AutoCAD, PRO/E, UG, Solidwork • Understand operation skills of 2D graphics, 3D surface and entities simulation 2. Carry out 2D graphics, 3D surface and entities simulation as well as parametric design • Effectively apply and operate commonly used CAD system to draw, construct and alternate 2D lines and graphics • Effectively apply and operate common CAD system to draw, construct and alternate 3D framework, 3D surface models and entities simulation. • Use CAD system to set up engineering drawing and components of tooling, plastic or metal products and mark size and tolerance • Effectively use CAD system to carry out tooling, plastic and metal workpiece assembly in computer, so as to check if the workpiece size has mistakes, and amend it • Effectively apply and operate CAD system to carry out parametric design for all kinds of tooling, plastic and metal products and components • According to the design guidelines of all kinds of tooling and products, use computer to draw detailed 3D workpiece drawings 3. Professional handling of 2D graphics, 3D surface and entities simulation as well as parametric design • Ensure all contents and information of 2D graphics, 3D surface and entities simulation and parametric design are accurate
Assessment Criteria	The integrated outcome requirements of this unit of competency are: • Capable to operate CAD system, build product models and all kinds of parametric designs. • Capable to build all kinds of 2D and 3D drawings, and also accurately mark size and tolerance.
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