

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

Functional Area - Process Design and Development

Title	Plastic products manufacturing process design and planning
Code	106585L5
Range	This unit of competency is applicable to the engineering or manufacturing development department of the corporation of plastic product. Practitioners should be capable to understand plastic products manufacturing process, and design and plan appropriate manufacturing process of specific plastic products
Level	5
Credit	6 (For Reference Only)
Competency	<p>Performance Requirements</p> <p>1. Recognise the manufacturing processes and all kinds of engineering application tools</p> <ul style="list-style-type: none"> • Understand the characteristics of all manufacturing process, including raw materials, all kinds of forming techniques and technologies, post-processing, intake processing, colouring and surface decoration, assembly and testing • Understand plastic product design principle and calculation methods, such as wall thickness, strength, characteristics of plastic materials • Understand interrelation between the design of different thickness, shape, product materials and the tonnage of production machinery, such as injection moulding machine • Understand the calculation method of product design and manufacturing costs • Understand the manufacturing process of manpower allocation • Understand engineering analysis methods and tools, such as the processing roadmap, work flowcharts, work factor analysis and work measurement • Understand the required equipment of manufacturing plastic products • Understand the latest technology of the design and manufacture of plastic products, such as Multi-component Moulding, Film insert moulding and 3D printing and CAD/CAE/CAM software, such as Solidworks, Catia and Pro-Engineer <p>2. Propose the best manufacturing solutions in accordance with customers requirements and plastic products</p> <ul style="list-style-type: none"> • Analyse and review customer s requirements of on cost, environmental protection, quality, function and appearance of plastic stamping products, propose the best manufacturing methods and processes in the areas of materials, equipment and manufacturing technology • Analyse and design plastic products manufacturing processes and set the manufacturing schedule • Analyse actual situation of different equipment in shopfloor, adjust and optimise the manufacturing process of plastic products • Balance the manufacturing time and product quality, so as to optimize the manufacturing process • Develop production efficiency and quality of key performance indicators, measurement methods and plans • Recognise the important quality monitoring points in all stages of the manufacturing process and the corresponding supervise and monitoring methods • Communicate with customers, product development and marketing staff, give feedback to improve product design, so as to improve product quality, lower cost and optimise productivity • Draft manufacturing solutions manual and relevant records and documents <p>3. Professional handling of plastic products manufacturing process</p>

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	<ul style="list-style-type: none">Carefully consider elements of safety, risk, capacity, quality, environmental protection and cost etc, design, plan and optimise plastic products manufacturing process, ensure safety operation and also meet all aspects of requirements
Assessment Criteria	<p>The integrated outcome requirements of this unit of competency are:</p> <ul style="list-style-type: none">Capable to develop a schedule of plastic products manufacturing process, including outward processing, plant processing, workflow and relevant quality measurementCapable to clearly explain the manufacturing solutions of effective cost control, production process which meets the environmental protection requirements, product quality, functions and appearance reaches the relevant standards
Remark	