TSC Category	Product Development					
TSC	Engineering Product Design					
TSC Description	Facilitate the design of products to meet requirements for functionality and performance					
TSC Proficiency Description	**Level 1**	**Level 2**	**Level 3**	**Level 4**	**Level 5**	**Level 6**
			PRE-DTH-3001-1.1	**PRE-DTH-4001-1.1**	**PRE-DTH-5001-1.1**	**PRE-DTH-6001-1.1**
			Review product designs for ease of assembly in manufacturing	Establish specifications and provide design solutions for products to satisfy requirements	Create engineering designs, in accordance with approved procedures to meet design brief objectives	Create physical models of new product designs, and verify the performance against defined design data
Knowledge			• Product and process design for easy assembly • Manual assembly design • Assembly system design • Principles of design for assembly • Role and importance of rules for ease of assembly	• Principles of precision engineering • Types of critical information to gather from clients to establish design requirements • Types of design features to be considered unique and/or specific • Factors affecting the feasibility of achieving requirements • Methods for assessing the feasibility of achieving requirements • Information required to prepare briefs to confirm requirements • Workplace safety and health (WSH) requirements	• Types of information required for establishing design objectives • Types of design features to be considered unique and/or specific • Components of design briefs and specifications • Factors affecting the feasibility of achieving requirements • Manufacturing principles and concepts required to produce fit-for-purpose designs • Potential risks to designs and their mitigating measures • Functionality of designs and inter-relationships with other components, products, systems and technologies • Organisational processes or procedures for recording design requirements • Workplace safety and health (WSH) requirements	• Technologies used in the creation of physical models • Benefits, constraints and physical limitations of various modelling processes • Procedures and information systems for verifying designs, using physical models • Equipment and methods used to evaluate physical models • Engineering principles in modelling and evaluation processes • Types of problems encountered in modelling processes • Resources for modelling exercises • Workplace safety and health (WSH) requirements

Abilities			• Design product and process for easy assembly • Design for manual assembly • Design for assembly systems • Assess a given product for ease of assembly • Review existing processes to meet industrial requirements for assessing areas of potential value-add	• Define the components of product designs, development processes, and their relationships from concept to final delivery • Record accurate information on client requirements, consultations and reviews • Interpret design requirements from job instructions and/or through consultation • Analyse design concepts, factoring processes, costs, materials and functionality • Evaluate unique designs that require special considerations • Determine design limitations in accordance with organisation standard operating procedures (SOPs), and regulatory and legislative requirements • Apply mechanical principals to the product designs • Review design proposals to determine areas of improvement	• Confirm objectives for engineering products or processes • Identify unique and/or specific features that require specific attention • Determine the feasibility of achieving requirements • Create designs for engineering products and processes, as specified in design briefs and in accordance with requirements • Apply approved engineering concepts, processes and principles to achieve the design specifications • Create suitable range of designs for stakeholders' consideration • Ensure designs comply with all relevant regulations, standard directives and codes of practice • Ensure that designs are protected, in accordance with organisational procedures	• Identify potential design limits and constraints from physical modelling exercises • Arrange construction of physical models • Collect design data from physical models using appropriate equipment and materials • Monitor modelling processes to ensure fulfilment of design characteristics • Evaluate data from physical models against design data requirements to determine variances • Analyse data from physical models to determine measures that may enhance the performance of the new product designs