

**SKILLS FRAMEWORK FOR SEA TRANSPORT
TECHNICAL SKILLS AND COMPETENCIES (TSC) REFERENCE**

TSC Category	Marine Engineering					
TSC	3D Modelling					
TSC Description	Generate 3D models using a variety of modelling software to represent characteristics of a real-world system					
TSC Proficiency Description	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6
			STP-DES-3032-1.1-1	STP-DES-4032-1.1-1		
			Use multiple 3D modelling software to create advanced three-dimensional models for engineering equipment, components and systems	Analyse 3D models and conduct scenario visualisation to validate engineering plans and design quality		
Knowledge			<ul style="list-style-type: none"> • Engineering drawing principles • Fundamentals of engineering graphics • Principles and practices of the international graphic language for engineering • Advanced 3D modelling strategies and techniques • Types of 3D computer-aided design (CAD) software 	<ul style="list-style-type: none"> • Engineering project plans • Engineering analysis tools and techniques • Visualisation tools and techniques • Simulation models and tools • Principles and techniques of animation • Modelling concepts for Virtual Reality (VR) 		
Abilities			<ul style="list-style-type: none"> • Apply advanced modelling strategies and techniques to create complex designs • Utilise multiple 3D CAD software and tools • Select suitable 3D modelling software for design creation • Ensure models are created in adherence to the relevant international standards 	<ul style="list-style-type: none"> • Review and analyse 3D models with the use of engineering analysis tools • Identify areas of improvement pertaining to the engineering plan • Conduct scenario visualisation for 3D modelling • Run simulations to test 3D models • Test what-if scenarios • Validate engineering plans • Test feasibility of designs 		

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				<ul style="list-style-type: none"> • Identify problems with design quality • Ensure engineering plans and design compliant with relevant international standards • Explore and apply key animation principles and techniques to create 3D animation for VR optimisation 		
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