

**SKILLS FRAMEWORK FOR MARINE AND OFFSHORE
SKILLS MAP - ASSISTANT DESIGN ENGINEER**

Sector	Marine and Offshore				
Track	Design and Engineering				
Occupation	Marine Design Engineer				
Job Role	Assistant Design Engineer				
Job Role Description	<p>The Assistant Design Engineer is responsible for supporting design and engineering activities under instructions from more experienced engineers. He/She assists project teams by carrying out routine tasks in different aspects of product design; research, conceptualisation, drawing, testing and publication.</p> <p>The Assistant Design Engineer should possess a meticulous nature to analyse various factors and calculations involved in ship and rig design. His duties may require working outdoors on the shop floor, within dry docks to support production work and alignment to design specifications. He must possess a level of physical fitness appropriate to the job requirements.</p>				
Critical Work Functions and Key Tasks	Critical Work Functions		Key Tasks	Performance Expectations (For legislated / regulated occupations)	
					Source design data from databases and/or existing designs
					Execute system design calculations
					Execute marine engineering calculations for dimensioning in technical drawings and support product and system designs
					Translate hand sketches and tracing drawings into technical drawings
	Modify sections of drawings and ensure compliance with international standards				
	Develop technical drawings and design plans				
Filter meaningless and unnecessary data to enhance data quality					
Apply analytical techniques to process data					
Employ advanced analytics and big data					
				Interpret big data through analytical and visualisation techniques	
Contribute to creating technical and business reports with analytical findings					
				Conduct research for green initiatives and other product innovations	
Drive innovation and research					
Skills & Competencies	Technical Skills and Competencies		Generic Skills and Competencies (Top 5)		
	Big Data Analytics	Level 3	Digital Literacy	Intermediate	
	Ballast System Design	Level 3	Problem Solving	Basic	
	Cargo System Design	Level 3	Communication	Basic	
	Control System Programming	Level 2	Service Orientation	Basic	
	Cooling System Design	Level 3	Teamwork	Basic	
	Electrical Drawing	Level 2			
	Emergency Response Management	Level 2			
	Equipment Drawing	Level 2			
	Fuel and Lubrication System Design	Level 3			
	Green Ship Design	Level 2			
	Heat Transfer System Design	Level 2			
	Heating, Ventilation and Air Conditioning System Design	Level 3			
	Instrumentation and Control System Design	Level 3			
	Interface Management	Level 3			
	Marine Design Customisation	Level 2			
	Marine Engineering Calculations	Level 2			
	Marine Equipment Material Selection	Level 3			
	Naval Architecture Calculations	Level 3			
	Pipeline Drawing	Level 2			
	Power Generation System Design	Level 3			
	Programme Management	Level 3			
	Propulsion System Design	Level 3			
	Pump and Piping Design	Level 3			
Quality System Management	Level 2				
Safety System Design	Level 3				
Structural and Arrangement Drawing	Level 2				

	System Architecture Design	Level 3	
	System Configuration Management	Level 3	
	Systems Integration	Level 3	
	WSH Culture Development	Level 2	
	WSH Performance Management	Level 2	
Programme Listing	For a list of Training Programmes available for the Marine and Offshore sector, please visit: www.skillsfuture.sg/skills-framework/marineandoffshore		

The information contained in this document serves as a guide.