

SKILLS FRAMEWORK FOR MARINE AND OFFSHORE SKILLS MAP – SENIOR PRODUCTION ENGINEER				
Sector	Marine and Offshore			
Track	Production Engineering			
Occupation	Marine Production Engineer			
Job Role	Senior Production Engineer			
Job Role Description	<p>The Senior Production Engineer heads the on-site manufacturing department and collaborates closely with the design department on projects to deliver cost effective, robust and timely solutions. He/She also manages resources efficiently and ensures quality assurance to achieve customer satisfaction through service excellence and reliability.</p> <p>He has spent significant years on the job and acquired technical knowledge and skills relating to the production of various ship and rig components, systems and equipment. The Senior Production Engineer's expertise is essential to his responsibilities to provide technical guidance to his team and lead projects of moderate complexity or less-routine in nature. He should be adaptable to work under different job demands to handle new build projects that require attention to detail and repair jobs which emphasise quick response and turnaround.</p>			
Critical Work Functions and Key Tasks	Critical Work Functions	Key Tasks	Performance Expectations (For legislated / regulated occupations)	
	Manufacture marine components	Develop process parameters and tooling requirements for machining, forming, joining and other manufacturing processes		In accordance with: • Classification Society regulations; • Workplace Safety and Health (WSH) Act
		Forecast time, materials and other resource requirements for projects and production workflow		
		Carry out internal audits on production activities to maintain efficiency and quality assurance standards		
		Approve technical specifications for materials and equipment required for each project		
		Collate and review production statistics reports		
		Guide procurement department in carrying out quality checks on received resources in line with quality management system (QMS) procedures		
	Assemble ships, rigs and marine equipment	Plan assembly workflows		
		Verify feasibility of design specifications for equipment installation locations and set-ups		
		Plan equipment installation approaches and schedules in tandem with assembly workflows		
		Plan and schedule quality control tests		
		Monitor conditions of foundation during installation works		
		Review vibration analysis, thermal analysis and other performance test results to confirm installation techniques		
	Execute launching operations	Assist in verifying conditions of underwater marine components prior to launch		
		Assist in monitoring individual machinery, equipment and system status on-board ships and/or rigs prior to launch		
		Support emergency response procedures for launch failures		
	Coordinate commissioning	Determine commissioning requirements according to specifications, design drawings and regulatory requirements		
		Review commissioning test results		
		Document commissioning procedures and findings		
Identify faults and liaise with related departments to redesign or replace marine equipment				
Oversee handover of operational equipment to approved personnel				
Develop prototypes	Develop component modelling plans to meet prototype production requirements			
	Determine suitable manufacturing processes and materials for prototype creation			
	Formulate workflows for prototype production			

	Manage people and organisational function	Collaborate with team members to deliver high performance		
		Track employee performance by utilising performance monitoring systems		
		Acquire and allocate resources to support operations and utility optimisation		
		Recommend improvements to business processes and operations to support change management initiatives		
		Support negotiations with relevant key internal and external stakeholders		
		Assist in formulating new workflows to incorporate new technology manufacturing processes		
Skills & Competencies	Technical Skills and Competencies		Generic Skills and Competencies (Top 5)	
	Additive Manufacturing	Level 4	Teamwork	Intermediate
	Big Data Analytics	Level 4	Communication	Advanced
	Business Negotiation	Level 4	Problem Solving	Advanced
	Business Presentation Delivery	Level 4	Interpersonal Skills	Advanced
	Change Management	Level 3	Leadership	Advanced
	Commissioning Coordination	Level 4		
	Component Assembly	Level 4		
	Computer Numeric Control Operations	Level 4		
	Continuous Quality Improvement	Level 3		
	Crisis Management	Level 3		
	Electrical Testing	Level 3		
	Emergency Response Management	Level 2		
	Financial Budgeting	Level 3		
	Financial Planning	Level 3		
	Incident and Accident Investigation	Level 2		
	Innovation Management	Level 3		
	Installation Planning and Execution	Level 4		
	Instrumentation and Control System Design	Level 4		
	Intellectual Property Management	Level 3		
	Interface Management	Level 4		
	Laser and Optics Application	Level 4		
	Launch Planning and Management	Level 5		
	Manufacturing Workflow Management	Level 4		
	Marine Design Customisation	Level 3		
	Marine Engineering Calculations	Level 3		
	Marine Equipment and System Maintenance	Level 4		
	Marine Equipment Material Selection	Level 4		
	Market Research	Level 3		
	Materials Inspection	Level 3		
	Naval Architecture Calculations	Level 4		
	Non-destructive Testing	Level 4		
	Operational Risk Management	Level 3		
	Opportunity Development	Level 3		
	Organisational Performance Management	Level 3		
	Procurement Coordination and Policy Development	Level 3		
	Programme Management	Level 5		
	Quality Engineering Integration	Level 3		
	Quality System Management	Level 3		
	Robotics and Automation Application	Level 4		
	Staff Performance Management	Level 3		
	Stakeholder Management	Level 4		
	Structural Testing	Level 3		
	System Architecture Design	Level 4		
System Configuration Management	Level 4			
Systems Integration	Level 4			
Technical Inspection	Level 3			
Technical Writing	Level 4			

	Value Engineering	Level 4	
	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.