

## Skills Framework for Marine and Offshore

Programmes that broaden or deepen specific skills and knowledge  
for the various occupations in the sector

### Design and Engineering

**Job Role:**  
Assistant Design Engineer

Full Qualification Programme	Provider
Diploma in Engineering (Marine SBMCs)	Ngee Ann Polytechnic
Diploma in Engineering (Electrical)	
Diploma in Engineering (ME SBMCs)	
Diploma in Engineering (AMS SBMCs)	
Diploma of Conversion Marine and Offshore Technology (SBMCs)	
Specialist Diploma in Marine Design (SBMCs)	
Higher Nitec in Offshore and Marine Engineering Design	Institute of Technical Education
Technical Diploma in Marine and Offshore Engineering (Engineering Design)	

Technical Skills and Competencies (TSC)			Modular Programmes	Providers
Category	Title	Proficiency Level		
Marine and Offshore System Design	Ballast System Design	3	Marine Engineering Systems (MOT SBMCs) Piping Design (MOT SBMCs)	Ngee Ann Polytechnic
	Control System Programming	2	Communication and Vision Systems (AMS SBMCs)	Ngee Ann Polytechnic
			Computer Programming (AMS SBMCs)	
			Basic Microcontroller Programming (AMS SBMCs)	
			Industrial Automation (AMS SBMCs)	
			Communication and Vision Systems (AMS SBMCs)	
	Cooling System Design	3	Marine Engineering Systems (MOT SBMCs)	Ngee Ann Polytechnic
			Piping Design (MOT SBMCs)	
			Thermodynamics (ME SBMCs)	
	Fuel and Lube System Design	3	Marine Design (MOT SBMCs)	Ngee Ann Polytechnic
			Piping Design (MOT SBMCs)	
	Heating, Ventilation and Air Conditioning System Design	3	Thermodynamics (ME SBMCs)	Ngee Ann Polytechnic
Instrumentation and Control System Design	3	Instrumentation and Control (AMS SBMCs)	Ngee Ann Polytechnic	
		Unmanned Systems (AMS SBMCs)		
Power Generation System Design	3	Thermodynamics (ME SBMCs)	Ngee Ann Polytechnic	
Propulsion System Design	3	Thermodynamics (ME SBMCs)	Ngee Ann Polytechnic	
Pump and Piping Design	3	Computer Aided 3D Design (AMS SBMCs)	Ngee Ann Polytechnic	
		Marine Design (MOT SBMCs)		
		Power Hydraulics (AMS SBMCs)		
Safety System Design	3	Electrical Technology (AMS SBMCs)	Ngee Ann Polytechnic	
		Power Hydraulics (AMS SBMCs)		
		Industrial Automation (AMS SBMCs)		
Marine Calculations	Marine Engineering Calculations	2	Engineering Mechanics (AMS SBMCs)	Ngee Ann Polytechnic
			Strength Of Materials (AMS SBMCs)	
			Marine Design (MOT SBMCs)	
			Mechanical Aspects Of Mechatronic Systems (AMS SBMCs)	
Naval Architecture Calculations	3	Fundamentals Of Hydrostatics (MOT SBMCs)	Ngee Ann Polytechnic	

Quality Management	Quality System Management	2	Advanced Manufacturing Systems and Management (ME SBMCs)	Ngee Ann Polytechnic
			Fluid Mechanics (MOT SBMCs)	
			Piping Design (MOT SBMCs)	
Systems Engineering	Interface Management	3	Mechanical Design (AMS SBMCs) Microcontroller Interfacing and Applications (AMS SBMCs)	Ngee Ann Polytechnic
	System Configuration Management	3	Computer Aided 3D Design (ME SBMCs) Computer Aided Engineering Drafting (ME SBMCs)	Ngee Ann Polytechnic
Technical Drawing	Electrical Drawing	2	Electrical and Electronic Drawing and CAD (AMS SBMCs)	Ngee Ann Polytechnic
			Electrical Technology (AMS SBMCs)	
	Equipment Drawing	2	Computer Aided 3D Design (AMS SBMCs)	Ngee Ann Polytechnic
			Computer Aided 3D Design (ME SBMCs)	
			Computer Aided Engineering Drafting (ME SBMCs)	
			Marine Design (MOT SBMCs)	
	Pipeline Drawing	2	Computer Aided 3D Design (AMS SBMCs)	Ngee Ann Polytechnic
			Marine Design (MOT SBMCs)	
			Piping Design (MOT SBMCs)	
	Structural and Arrangement Drawing	2	Computer Aided 3D Design (AMS SBMCs)	Ngee Ann Polytechnic
			Computer Aided 3D Design (ME SBMCs)	
			Computer Aided Engineering Drafting (ME SBMCs)	
Fundamentals Of Hydrostatics (MOT SBMCs)				
Marine Design (MOT SBMCs)				

For Generic Skills and Competencies (GSCs) programme listing, please refer to *Section (v) (c) - View the Training Programmes for GSCs*. Or click this [link](#) to view the GSCs Programme Listing.