MARINE ENGINEER

ALSO KNOWN AS: NAVAL ARCHITECT | SHIP ENGINEER | OFFSHORE ENGINEER | MARITIME ENGINEER | VESSEL SYSTEMS ENGINEER

NAVIGATE THE SEA OF INNOVATION AND VESSEL DESIGN.

Be the captain of maritime technology as a Marine Engineer, ensuring that ships sail smoothly from blueprint to blue waters.

KEY SKILLS

Skills which may benefit anyone considering a job as a marine engineer include:

- CAD software proficiency
- Mechanical design
- Project management
- Environmental Management
- Naval architecture

VALUES & ATTRIBUTES

Values and attributes of anyone considering a job as a marine engineer include:

- Innovative
- Adaptable
- Safety-conscious
- Analytical
- Attention to detail
- Investigative – "Thinker"

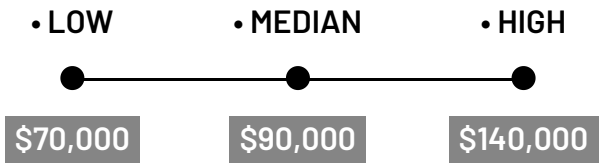
CAREER PROGRESSION

In this role, you may have the opportunity to progress to other positions. Career progression opportunities include:

- Chief Engineering Officer
- Mechanical Engineering Supervisor
- Chief Operating Officer
- Quality Engineer

SALARY EXPECTATION

The expected salary for Marine Engineer can vary across different areas of manufacturing and may vary as you become more experienced.



RELATED INDUSTRIES

▸ Aerospace and Defence ▸ General Manufacturing and Engineering ▸ Transport Equipment and Machinery

RECOMMENDED SCHOOL SUBJECTS

- Chemistry
- Engineering Skills
- Mathematical Methods
- Physics
- Specialist Mathematics

CORE SCHOOL SUBJECTS

- General Mathematics
- Essential English
- Engineering
- Marine Science
- Biology

JOB OVERVIEW

Marine engineers are the driving force behind the design, construction, and maintenance of all types of marine vessels and structures. From massive cargo ships and oil rigs to sleek yachts and submarines, these professionals ensure that waterborne vehicles and structures are seaworthy, efficient, and environmentally compliant.

Working in shipyards, design offices, or onboard vessels, marine engineers collaborate with naval architects, mechanical engineers, and environmental specialists. They're involved in every stage of a marine vessel's lifecycle, from initial concept and design to construction, testing, and ongoing maintenance. A typical day might involve using computer-aided design (CAD) software to develop ship systems, analysing performance data, troubleshooting mechanical issues, or overseeing repair and maintenance operations.

Marine engineers need a strong foundation in mechanical engineering principles, coupled with specialised knowledge of marine systems and maritime regulations. They must be adept at problem-solving, often in challenging environments. Proficiency in engineering software, excellent communication skills, and the ability to work in diverse teams are crucial. Additionally, they must stay updated with evolving maritime technologies and environmental regulations.

WHAT WILL YOU DO?

Your role may include duties as follows:

1. Design and oversee the construction of marine vessels and structures
2. Develop and maintain ship propulsion, electrical, and control systems
3. Conduct performance tests and sea trials on new or modified vessels
4. Ensure compliance with maritime safety and environmental regulations
5. Troubleshoot and repair complex marine engineering systems

HOW TO BECOME A MARINE ENGINEER

Becoming a marine engineer typically requires a bachelor's degree in marine engineering, naval architecture, or a related field. Some positions, especially leadership roles, may require advanced degrees or specialised certifications. Trade pathways exist. Here are the steps to pursue this career:

1. Complete a bachelor's degree in marine engineering or naval architecture
2. Gain practical experience through internships or entry-level positions in shipyards or marine engineering firms
3. Consider pursuing a master's degree for advanced positions or specialisations
4. Stay updated with the latest maritime technologies and regulations through continuous professional development

VOCATIONAL EDUCATION & TRAINING

While a bachelor's degree is typically required for marine engineering positions, there are vocational education and training options that can provide foundational knowledge and skills in related areas. These courses can be beneficial for those looking to enter the field as technicians or to supplement their engineering education.

- Certificate II in Maritime Operations (Marine Engine Driver Grade 3 Near Coastal) (MAR20421)
- Certificate III in Engineering – Fixed and Mobile Plant Mechanic (MEM31419)
- Diploma of Engineering – Advanced Trade (MEM50119)
- Diploma of Marine Engineering (MAR50120)
- Advanced Diploma of Marine Engineering (Class 1) (MAR60120)

UNIVERSITY & HIGHER EDUCATION

A bachelor's degree in marine engineering or naval architecture is the most common entry point for this career. These programs combine mechanical engineering principles with specialised knowledge of marine systems and maritime regulations. Many universities also offer postgraduate programs for those seeking advanced positions or specialisations.

Typical degree options include:

- Bachelor of Engineering specialising in naval architecture or marine and offshore engineering
- Master of Maritime Engineering
- Doctor of Philosophy (Ph.D.) in Marine Engineering

These programs provide comprehensive knowledge of ship design, marine systems, and maritime operations, preparing graduates for innovative roles in the maritime industry.