

Malaysia's Maritime & Offshore Engineering Tech Workforce Set for Strong Growth by 2030

Digital transformation, green energy, and automation drive demand for 11,800 professionals in Malaysia's maritime technology sector

KARLSRUHE, GERMANY, November 12, 2025 /EINPresswire.com/ -- [Malaysia's](#) maritime and offshore engineering sector is undergoing a major digital and workforce transformation. The country now employs an estimated 8,200 technology professionals in this

field, representing 12% of the total maritime and offshore workforce. By 2030, this number is projected to grow to 11,800 professionals, marking a 7.6% annual growth rate—well ahead of Malaysia's broader technology sector growth of 5.2% per year, according to OECD indicators.



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Malaysia Top 30 Trending Roles in the Maritime & Offshore Engineering Industry: Strategic workforce planning, Hiring Trend, In Demand Skillsets, Demand Push, Salary Benchmarking, job demand and supply”

By Florian Marthaler

This growth reflects the industry's rapid adoption of digital tools in port automation, vessel management, and offshore platform monitoring. These advances are being driven by Malaysia's National Transport Policy (2019–2030) and integration with ASEAN Single Window trade systems, as well as environmental compliance standards set by the International Maritime Organization (IMO).

Technology Roles Powering the Industry

Malaysia's maritime technology workforce is concentrated in four main clusters. Engineering and Platform Specialists make up 45% of the workforce, focusing on smart port and industrial IoT systems. Data and AI professionals account

for 28%, building predictive systems that improve safety and maintenance efficiency.

Cybersecurity experts represent 18%, protecting ports and offshore platforms from growing cyber threats. Product and Experience teams form the remaining 9%, designing user-friendly digital interfaces for vessel tracking and logistics.

This evolving mix of roles highlights Malaysia's increasing focus on digital transformation and automation in critical infrastructure.

Workforce Demand and Supply Gaps

Malaysia's position as a regional energy and shipping hub has intensified the demand for maritime and offshore engineers. Vacancies in this sector have risen by 35–40% since 2020, led by growth in offshore renewable energy and digitalization projects.

Among the most sought-after roles are Offshore Platform Engineers, Marine Systems Integration Specialists, and Maritime Digitalization Engineers. New positions such as Process Automation Engineers and Subsea Technology Specialists have also surged, with vacancy postings increasing by 45–50% in recent years.

However, the supply of skilled workers remains limited. Malaysian universities produce around 3,000 engineering graduates annually in relevant fields, but only 8–12% enter maritime or offshore roles. This creates a shortfall of about 400–600 professionals each year, resulting in longer hiring times—often double the duration of general engineering roles.

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Competitive Salaries and Evolving HR Models

Technology professionals in Malaysia's maritime and offshore engineering field earn significantly higher salaries than general IT workers, reflecting the sector's complexity and risk profile.

Subsea Technology Specialists command a median salary of USD 75,000, up 22% year over year.

Offshore Platform Tech Leads earn around USD 68,000, growing at 18% annually.

Maritime Systems Engineers earn about USD 52,000, while Marine Software Developers average USD 45,000.

Kuala Lumpur-based positions typically offer 25–30% salary premiums over other regions. Many employers now include retention bonuses of up to 25% to secure critical talent.

HR departments face new challenges as traditional job structures struggle to keep up with fast-evolving digital operations. Companies report 25–30% productivity gaps where rigid job models limit flexibility. Attrition rates in AI, data, and cybersecurity roles exceed 35%, highlighting the need for more agile workforce strategies and advanced training programs.

Future Roles and Skills Shaping 2030

By 2030, 40% of existing maritime engineering roles will require significant reskilling as

automation and green energy reshape the industry. New roles will emerge, including:

Autonomous Marine Systems Engineers managing unmanned vessel operations

Green Hydrogen Infrastructure Specialists supporting renewable offshore energy

Digital Twin Operations Managers integrating real-time monitoring with predictive analytics

Marine Cybersecurity Architects safeguarding connected marine systems

Carbon Capture Engineering Specialists working on offshore decarbonization

Regulatory Technology Officers automating compliance processes

These roles demand interdisciplinary expertise across robotics, AI, marine systems, and sustainability technologies—marking a fundamental shift from traditional engineering skill sets.

Automation and Workforce Impact

Automation is reshaping job structures rather than replacing them. Around 35–60% of tasks in the sector are now automatable, especially in design, quality assurance, and operational monitoring. Instead of cutting jobs, automation enhances productivity—enabling 25–30% efficiency gains across major offshore facilities. Technical specialists are being redeployed into higher-value activities, with up to 80% redeployment success rates, according to industry assessments.

Government and Investment Support

Malaysia's strong economic fundamentals and policy initiatives continue to support this transformation. GDP growth is expected to remain steady at 4.2–5.1% annually, while the Malaysia Digital Economy Blueprint allocates USD 3.2 billion to digitalization programs.

Under the Twelfth Malaysia Plan, offshore engineering has been identified as a strategic growth sector, receiving USD 1.8 billion for modernization of ports and shipyards. Major energy companies—including Petronas, Shell, and ExxonMobil—have committed over USD 12 billion in offshore investments through 2027. This activity could generate 15,000–22,000 new jobs between 2025 and 2030.

Educational and Talent Pipeline

Malaysia's universities play a key role in developing maritime talent. Universiti Teknologi Malaysia (UTM), Universiti Malaysia Terengganu, and Universiti Teknologi PETRONAS collectively produce around 1,000 graduates annually with specialized marine and offshore expertise. Partnerships with national oil and engineering firms help align academic training with industry needs.

However, experts note ongoing mismatches between graduate skills and emerging digital

roles—particularly in automation, AI, and renewable energy systems. Continued curriculum modernization under national initiatives is expected to narrow this gap by 2025.

Malaysia's Position as a Regional Maritime Hub

Malaysia continues to attract international professionals from ASEAN countries, the UK, and Norway, reflecting its role as a regional maritime hub. Foreign specialists account for 12–15% of new hires, particularly in deepwater and subsea engineering.

Geographically, Kuala Lumpur remains the main engineering services hub, while Johor Bahru, Kuching, and Kota Kinabalu serve as key operational centers supporting offshore projects in the South China Sea.

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