| External Assessment Specifications Document | | | | |
|---|---|---|---|---|
| **Curriculum Code** | **Qualification Title** | | **NQF Level** | |
| 315101000 | National Occupational Qualification: Ship's Engineer (Marine Engineer) | | 6 | |
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**DQP Representative Signature** **Date**

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**AQP Representative Signature** **Date**

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# 1 ASSESSMENT STRATEGY

## 1.1 Assessment Model

The external assessment will be conducted through a combination of a written assessment and practical task at a registered trade test centre. The written examination will be concluded at the registered assessment centre and marked by registered assessors. Practical tasks will also be assessed by registered assessors. The combination of the written and practical assessment will be conducted over a period of one working day.

During both the theoretical and practical assessments, the learner must demonstrate knowledge and understanding of performing marine engineering duties, assisting with shipboard operations and care for persons, assisting with maintenance and repairs, security and contingency plans and personnel development and management.

## 1.2 Qualification Purpose

The purpose of this qualification is to prepare a learner to operate as a Ship's Engineer (Marine Engineer).

The Ship's Engineer (Marine Engineer) manages, controls and participates in the safe operation, maintenance and repair of mechanical, electrical and electronic equipment and machinery on board ship, or performs related supporting functions on shore.

A qualified learner will be able to:

- Perform marine engineering duties (Level 3 - 6)
- Execute safe operations duties (Level 3 - 6)
- Provide maintenance and repair on board ship (Level 3 - 6)
- Develop and manage personnel (Level 3 - 6)
- Monitor and control security duties and contingency plans (Level 3 – 6)

## 1.3 Qualification Outcomes

1. Marine engineering duties performed (20%)
2. Safe operations duties executed (20%)
3. Maintenance and repair provided on board ship (20%)
4. Personnel lead, developed and managed (20%)
5. Security duties and contingency plans achieved (20%)

## 1.4 Assessment Standards

### 1.4.1 Assessment Standards for the Qualification

***Integrated Assessment Focus Area 1***

IAFA01 Manage the operation, monitoring and evaluation of the performance of engines (internal combustion and gas turbines), propulsion plant and auxiliary machinery on a vessel (20%)

***Associated Assessment Criteria***

IAFA0101 The operation of the ship's equipment and machinery is safely controlled as part of a team
IAFA0102 Watchkeeping handover / shift change is executed
IAFA0103 Operating parameters (temperatures, levels, pressures) are monitored and analysed
IAFA0104 Corrective action is instituted
IAFA0105 Watchkeeping activities are recorded
IAFA0106 Engine room resource management principles are applied

***Integrated Assessment Focus Area 2***

IAFA02 Evaluate the status of the plant to ensure safe operations within the design parameters and manufacturer's requirements (20%)

***Associated Assessment Criteria***

IAFA0201 Start-up-, running- and shut down procedures for main propulsion and auxiliary machinery, including associated systems, are performed
IAFA0202 Fuel systems are operated and maintained
IAFA0203 Stability of vessel (Ballasting and de-ballasting of ballast water) is maintained
IAFA0204 Quality and quantity of fresh water supply systems (boilers, drinking and toilets) are monitored
IAFA0205 Quality and quantity of the types and grades of lubricating oil are observed
IAFA0206 Operations of refrigeration plant are managed
IAFA0207 Bilge pumping system is operated
IAFA0208 Emergency situations and damage are controlled
IAFA0209 Operational and legislated records are maintained

***Integrated Assessment Focus Area 3***

IAFA03 Appropriate action is taken to prevent damage/failure as per planned maintenance procedures, marine practice, safety regulations and manufacturer's instructions

***Associated Assessment Criteria***

IAFA0301 Diesel engines are maintained and repaired
IAFA0302 Diesel engine systems are maintained and repaired
IAFA0303 Safe working practices related to electrical equipment, are complied with
IAFA0304 Electrical and electronic systems are maintained, assessed and repaired
IAFA0305 Select and use engineering measuring equipment and power tool attachments
IAFA0306 Designated machining operations are carried out
IAFA0307 Welding operations are managed
IAFA0308 Comply with sheet and metal piping standards
IAFA0309 Hydraulic equipment are maintained, assessed and repaired
IAFA03010 Pneumatic equipment are maintained, assessed and repaired
IAFA03011 Marine refrigeration systems are operated, maintained and repaired
IAFA03012 Industrial electronics are designed, constructed and tested
IAFA03013 Control systems are maintained, assessed and repaired

***Integrated Assessment Focus Area 4***

IAFA04 Lead, develop and manage human resources as per operational and legislative requirements (20%)

***Associated Assessment Criteria***

IAFA0401 Service providers and / or personnel are managed
IAFA0402 Performance standards for personnel are determined
IAFA0403 Utilization of personnel is optimised
IAFA0404 Continuous professional development plans are compiled

***Integrated Assessment Focus Area 5***

IAFA05 Exercise all required safety, environmental and hazard control precautions and procedures when overseeing the operation and performance evaluation of engines (internal combustion and gas turbines), propulsion plant and auxiliary machinery

***Associated Assessment Criteria***

IAFA0501 Engine room security duties are monitored and controlled
IAFA0502 A security patrol is conducted in a simulated environment

### 1.4.2 Assessment Standards for Phases

No phase tests are applicable

### 1.4.3 Assessment Standards for Part Qualifications

#### 1.4.3.1 315101000#01: Fishing Chief Engineer

**A Fishing Chief Engineer** manages, controls and participates in the safe operation, maintenance and repair of mechanical, electrical and electronic equipment and machinery on board a fishing vessel, or performs related supporting functions on shore.

***Integrated Assessment Focus Area 1***

IAFA01 Manage the operation, monitoring and evaluation of the performance of engines (internal combustion and gas turbines), propulsion plant and auxiliary machinery on a vessel (20%)

***Associated Assessment Criteria***

IAFA0101 The operation of the ship's equipment and machinery is safely controlled as part of a team
IAFA0102 Watchkeeping handover / shift change is executed
IAFA0103 Operating parameters (temperatures, levels, pressures) are monitored and analysed
IAFA0104 Corrective action is instituted
IAFA0105 Watchkeeping activities are recorded
IAFA0106 Engine room resource management principles are applied

***Integrated Assessment Focus Area 2***

IAFA02 Evaluate the status of the plant to ensure safe operations within the design parameters and manufacturer's requirements (20%)

***Associated Assessment Criteria***

IAFA0201 Start-up-, running- and shut down procedures for main propulsion and auxiliary machinery, including associated systems, are performed
IAFA0202 Fuel systems are operated and maintained
IAFA0203 Stability of vessel (Ballasting and de-ballasting of ballast water) is maintained
IAFA0204 Quality and quantity of fresh water supply systems (boilers, drinking and toilets) are monitored
IAFA0205 Quality and quantity of the types and grades of lubricating oil are observed
IAFA0206 Operations of refrigeration plant are managed
IAFA0207 Bilge pumping system is operated
IAFA0208 Emergency situations and damage are controlled
IAFA0209 Operational and legislated records are maintained

***Integrated Assessment Focus Area 3***

IAFA03 Appropriate action is taken to prevent damage/failure as per planned maintenance procedures marine practice, safety regulations and manufacturer's instructions

***Associated Assessment Criteria***

IAFA0301 Diesel engines are maintained and repaired
IAFA0302 Diesel engine systems are maintained and repaired
IAFA0303 Safe working practices related to electrical equipment, are complied with
IAFA0304 Electrical and electronic systems are maintained, assessed and repaired
IAFA0305 Select and use engineering measuring equipment and power tool attachments
IAFA0306 Designated machining operations are carried out
IAFA0307 Welding operations are managed
IAFA0308 Comply with sheet and metal piping standards
IAFA0309 Hydraulic equipment are maintained, assessed and repaired
IAFA03010 Pneumatic equipment are maintained, assessed and repaired
IAFA03011 Marine refrigeration systems are operated, maintained and repaired
IAFA03012 Industrial electronics are designed, constructed and tested
IAFA03013 Control systems are maintained, assessed and repaired

***Integrated Assessment Focus Area 4***

IAFA04 Lead, develop and manage human resources as per operational and legislative requirements (20%)

***Associated Assessment Criteria***

IAFA0401 Service providers and / or personnel are managed
IAFA0402 Performance standards for personnel are determined
IAFA0403 Utilization of personnel is optimised
IAFA0404 Continuous professional development plans are compiled

***Integrated Assessment Focus Area 5***

IAFA05 Exercise all required safety, environmental and hazard control precautions and procedures when overseeing the operation and performance evaluation of engines (internal combustion and gas turbines), propulsion plant and auxiliary machinery

***Associated Assessment Criteria***

IAFA0501 Engine room security duties are monitored and controlled

IAFA0502 A security patrol is conducted in a simulated environment

**1.4.3.2 315101000#02: Fishing Chief Engineer < 3000KW**

**A Fishing Chief Engineer <3000KW** manages, controls and participates in the safe operation, maintenance and repair of mechanical, electrical and electronic equipment and machinery on board a fishing vessel less than 3000KW, or performs related supporting functions on shore.

***Integrated Assessment Focus Area 1***

IAFA01 Manage the operation, monitoring and evaluation of the performance of engines (internal combustion and gas turbines), propulsion plant and auxiliary machinery on a vessel (20%)

***Associated Assessment Criteria***

IAFA0101 The operation of the ship's equipment and machinery is safely controlled as part of a team

IAFA0102 Watchkeeping handover / shift change is executed

IAFA0103 Operating parameters (temperatures, levels, pressures) are monitored and analysed

IAFA0104 Corrective action is instituted

IAFA0105 Watchkeeping activities are recorded

IAFA0106 Engine room resource management principles are applied

***Integrated Assessment Focus Area 2***

IAFA02 Evaluate the status of the plant to ensure safe operations within the design parameters and manufacturer's requirements (20%)

***Associated Assessment Criteria***

IAFA0201 Start-up-, running- and shut down procedures for main propulsion and auxiliary machinery, including associated systems, are performed

IAFA0202 Fuel systems are operated and maintained

IAFA0203 Stability of vessel (Ballasting and de-ballasting of ballast water) is maintained

IAFA0204 Quality and quantity of fresh water supply systems (boilers, drinking and toilets) are monitored

IAFA0205 Quality and quantity of the types and grades of lubricating oil are observed

IAFA0206 Operations of refrigeration plant are managed

IAFA0207 Bilge pumping system is operated

IAFA0208 Emergency situations and damage are controlled

IAFA0209 Operational and legislated records are maintained

***Integrated Assessment Focus Area 3***

IAFA03 Appropriate action is taken to prevent damage/failure as per planned maintenance procedures marine practice, safety regulations and manufacturer's instructions

***Associated Assessment Criteria***

IAFA0301 Diesel engines are maintained and repaired
IAFA0302 Diesel engine systems are maintained and repaired
IAFA0303 Safe working practices related to electrical equipment, are complied with
IAFA0304 Electrical and electronic systems are maintained, assessed and repaired
IAFA0305 Select and use engineering measuring equipment and power tool attachments
IAFA0306 Designated machining operations are carried out
IAFA0307 Welding operations are managed
IAFA0308 Comply with sheet and metal piping standards
IAFA0309 Hydraulic equipment are maintained, assessed and repaired
IAFA03010 Pneumatic equipment are maintained, assessed and repaired
IAFA03011 Marine refrigeration systems are operated, maintained and repaired
IAFA03012 Industrial electronics are designed, constructed and tested
IAFA03013 Control systems are maintained, assessed and repaired

***Integrated Assessment Focus Area 4***

IAFA04 Lead, develop and manage human resources as per operational and legislative requirements (20%)

***Associated Assessment Criteria***

IAFA0401 Service providers and / or personnel are managed
IAFA0402 Performance standards for personnel are determined
IAFA0403 Utilization of personnel is optimised
IAFA0404 Continuous professional development plans are compiled

***Integrated Assessment Focus Area 5***

IAFA05 Exercise all required safety, environmental and hazard control precautions and procedures when overseeing the operation and performance evaluation of engines (internal combustion and gas turbines), propulsion plant and auxiliary machinery

***Associated Assessment Criteria***

IAFA0501 Engine room security duties are monitored and controlled
IAFA0502 A security patrol is conducted in a simulated environment

**1.4.3.3 315101000#03: Port Operations Chief Engineer**

**A Port Operations Chief Engineer** manages, controls and participates in the safe operation, maintenance and repair of mechanical, electrical and electronic equipment and machinery on board a fishing vessel, or performs related supporting functions on shore.

***Integrated Assessment Focus Area 1***

IAFA01 Manage the operation, monitoring and evaluation of the performance of engines (internal combustion and gas turbines), propulsion plant and auxiliary machinery on a vessel (20%)

***Associated Assessment Criteria***

IAFA0101 The operation of the ship's equipment and machinery is safely controlled as part of a team

IAFA0102 Watchkeeping handover / shift change is executed

IAFA0103 Operating parameters (temperatures, levels, pressures) are monitored and analysed

IAFA0104 Corrective action is instituted

IAFA0105 Watchkeeping activities are recorded

IAFA0106 Engine room resource management principles are applied

***Integrated Assessment Focus Area 2***

IAFA02 Evaluate the status of the plant to ensure safe operations within the design parameters and manufacturer's requirements (20%)

***Associated Assessment Criteria***

IAFA0201 Start-up-, running- and shut down procedures for main propulsion and auxiliary machinery, including associated systems, are performed

IAFA0202 Fuel systems are operated and maintained

IAFA0203 Stability of vessel (Ballasting and de-ballasting of ballast water) is maintained

IAFA0204 Quality and quantity of fresh water supply systems (boilers, drinking and toilets) are monitored

IAFA0205 Quality and quantity of the types and grades of lubricating oil are observed

IAFA0206 Operations of refrigeration plant are managed

IAFA0207 Bilge pumping system is operated

IAFA0208 Emergency situations and damage are controlled

IAFA0209 Operational and legislated records are maintained

***Integrated Assessment Focus Area 3***

IAFA03 Appropriate action is taken to prevent damage/failure as per planned maintenance procedures marine practice, safety regulations and manufacturer's instructions

***Associated Assessment Criteria***

IAFA0301 Diesel engines are maintained and repaired

IAFA0302 Diesel engine systems are maintained and repaired

IAFA0303 Safe working practices related to electrical equipment, are complied with

IAFA0304 Electrical and electronic systems are maintained, assessed and repaired

IAFA0305 Select and use engineering measuring equipment and power tool attachments

IAFA0306 Designated machining operations are carried out

IAFA0307 Welding operations are managed

IAFA0308 Comply with sheet and metal piping standards

IAFA0309 Hydraulic equipment are maintained, assessed and repaired
IAFA03010 Pneumatic equipment are maintained, assessed and repaired
IAFA03011 Marine refrigeration systems are operated, maintained and repaired
IAFA03012 Industrial electronics are designed, constructed and tested
IAFA03013 Control systems are maintained, assessed and repaired

***Integrated Assessment Focus Area 4***

IAFA04 Lead, develop and manage human resources as per operational and legislative requirements (20%)

***Associated Assessment Criteria***

IAFA0401 Service providers and / or personnel are managed
IAFA0402 Performance standards for personnel are determined
IAFA0403 Utilization of personnel is optimised
IAFA0404 Continuous professional development plans are compiled

***Integrated Assessment Focus Area 5***

IAFA05 Exercise all required safety, environmental and hazard control precautions and procedures when overseeing the operation and performance evaluation of engines (internal combustion and gas turbines), propulsion plant and auxiliary machinery

***Associated Assessment Criteria***

IAFA0501 Engine room security duties are monitored and controlled
IAFA0502 A security patrol is conducted in a simulated environment

**1.4.3.4 315101000#04: Port Operations Chief Engineer <1500kW**

**A Port Operations Chief Engineer <1500kW** manages, controls and participates in the safe operation, maintenance and repair of mechanical, electrical and electronic equipment and machinery on board a fishing vessel <1500kW, or performs related supporting functions on shore.

***Integrated Assessment Focus Area 1***

IAFA01 Manage the operation, monitoring and evaluation of the performance of engines (internal combustion and gas turbines), propulsion plant and auxiliary machinery on a vessel (20%)

***Associated Assessment Criteria***

IAFA0101 The operation of the ship's equipment and machinery is safely controlled as part of a team
IAFA0102 Watchkeeping handover / shift change is executed
IAFA0103 Operating parameters (temperatures, levels, pressures) are monitored and analysed
IAFA0104 Corrective action is instituted
IAFA0105 Watchkeeping activities are recorded
IAFA0106 Engine room resource management principles are applied

***Integrated Assessment Focus Area 2***

IAFA02 Evaluate the status of the plant to ensure safe operations within the design parameters and manufacturer's requirements (20%)

***Associated Assessment Criteria***

IAFA0201 Start-up-, running- and shut down procedures for main propulsion and auxiliary machinery, including associated systems, are performed
IAFA0202 Fuel systems are operated and maintained
IAFA0203 Stability of vessel (Ballasting and de-ballasting of ballast water) is maintained
IAFA0204 Quality and quantity of fresh water supply systems (boilers, drinking and toilets) are monitored
IAFA0205 Quality and quantity of the types and grades of lubricating oil are observed
IAFA0206 Operations of refrigeration plant are managed
IAFA0207 Bilge pumping system is operated
IAFA0208 Emergency situations and damage are controlled
IAFA0209 Operational and legislated records are maintained

***Integrated Assessment Focus Area 3***

IAFA03 Appropriate action is taken to prevent damage/failure as per planned maintenance procedures marine practice, safety regulations and manufacturer's instructions

***Associated Assessment Criteria***

IAFA0301 Diesel engines are maintained and repaired
IAFA0302 Diesel engine systems are maintained and repaired
IAFA0303 Safe working practices related to electrical equipment, are complied with
IAFA0304 Electrical and electronic systems are maintained, assessed and repaired
IAFA0305 Select and use engineering measuring equipment and power tool attachments
IAFA0306 Designated machining operations are carried out
IAFA0307 Welding operations are managed
IAFA0308 Comply with sheet and metal piping standards
IAFA0309 Hydraulic equipment are maintained, assessed and repaired
IAFA03010 Pneumatic equipment are maintained, assessed and repaired
IAFA03011 Marine refrigeration systems are operated, maintained and repaired
IAFA03012 Industrial electronics are designed, constructed and tested
IAFA03013 Control systems are maintained, assessed and repaired

***Integrated Assessment Focus Area 4***

IAFA04 Lead, develop and manage human resources as per operational and legislative requirements (20%)

***Associated Assessment Criteria***

IAFA0401 Service providers and / or personnel are managed
IAFA0402 Performance standards for personnel are determined
IAFA0403 Utilization of personnel is optimised
IAFA0404 Continuous professional development plans are compiled

***Integrated Assessment Focus Area 5***

IAFA05 Exercise all required safety, environmental and hazard control precautions and procedures when overseeing the operation and performance evaluation of engines (internal combustion and gas turbines), propulsion plant and auxiliary machinery

***Associated Assessment Criteria***

IAFA0501 Engine room security duties are monitored and controlled

IAFA0502 A security patrol is conducted in a simulated environment

**1.4.3.5 315101000#05: Fishing 2nd Engineer**

**A Fishing 2nd Engineer** supports the Chief Engineer to manage, control and participate in the safe operation, maintenance and repair of mechanical, electrical and electronic equipment and machinery on board a fishing vessel, or performs related supporting functions on shore.

***Integrated Assessment Focus Area 1***

IAFA01 Correct records are made relating to the operation and performance evaluation of engines (internal combustion or gas turbine), propulsion plant and auxiliary equipment and any engine or gas turbine or machinery failure incidents (20%)

***Associated Assessment Criteria***

IAFA0101 Documentation is maintained and updated

IAFA0102 All engineers know the location of LSA and FFA

IAFA0103 All emergency escape routes are clearly marked and clear of any obstruction

IAFA0104 Record keeping: Different records of the engine room have to be maintained and updated regularly. This is the responsibility of the second engineer. A few examples of important records are log book, bell book, Saturday or Monday routine book etc.

IAFA0105 All the spares for engine room machineries like pumps, auxiliary engine etc are to be stored and inventory to be maintained and updated regularly

IAFA0106 The quantity for oil present in the tanks for machinery operation like lube oil, fuel or diesel oil etc has to be recorded in an oil record book

IAFA0107 A track for the next bunker order also needs to be maintained

***Integrated Assessment Focus Area 2***

IAFA02 Identify typical operational and performance evaluation problems and hazards and take appropriate action (20%)

***Associated Assessment Criteria***

IAFA0201 Engine room is properly managed

IAFA0202 All engineers know the location of LSA and FFA

IAFA0203 All emergency escape routes are clearly marked and clear of any obstruction

IAFA0204 Oily water separator is effectively used

IAFA0205 Operation of incinerator is conducted

IAFA0206 Sewage plant is effectively monitored and controlled

IAFA0207 Oil transferring procedure is executed

IAFA0208 Oil record book and engine room log book is updated

IAFA0209 All bilge over board valves are shut and locked in port and in special area

***Integrated Assessment Focus Area 3***

IAFA03 Identify malfunctioning and faulty engines (internal combustion and gas turbines), propulsion plant and auxiliary machinery and initiate appropriate action for repair or replacement (20%)

***Associated Assessment Criteria***

IAFA0301 Engine room is maintained in clean, painted and sanitary condition
IAFA0302 All tools and stores are kept safely and location recorded
IAFA0303 All heavy items are secured at all times
IAFA0304 All leaks and damages are attended as soon as possible
IAFA0305 Bilge garbage and sewage are managed as per regulation
IAFA0306 In state of readiness at all times
IAFA0307 Proper round checks carried out
IAFA0308 PMS jobs to be carried out
IAFA0309 Attend to all major repair works
IAFA03010 Keep track of all defects and repair required
IAFA03011 Able to damage any other emergency repairs outside PMS
IAFA03012 Ensure handling / tacking over reports cover the engineer's general duties, their performance and any special job as a requirement

***Integrated Assessment Focus Area 4***

IAFA04 Repair processes and the organisation and control engine room personnel to facilitate repairs are as per established procedures (20%)

***Associated Assessment Criteria***

IAFA0401 Ensure engine room is properly manned
IAFA0402 Jobs are properly distributed
IAFA0403 Clear briefing is done before job is carried out
IAFA0404 Guidance and proper training of personnel are provided
IAFA0405 Understanding the consequence of pollution is ensured
IAFA0406 All work done is compiled for future records
IAFA0407 Shore personnel is observed

***Integrated Assessment Focus Area 5***

IAFA05 Safety, hazard minimisation and pollution control procedures and national and international regulations are followed at all times during maintenance and repair operations (20%)

***Associated Assessment Criteria***

IAFA0501 Engine room security duties are monitored and controlled
IAFA0502 A security patrol is conducted in a simulated environment

**1.4.3.6 315101000#06: Marine Motorman Higher Grade**

**A Marine Motorman Higher Grade** manages, controls and participates in the safe operation, maintenance and repair of mechanical, electrical and electronic equipment and machinery on board a fishing vessel, or performs related supporting functions on shore.

They could perform in both the 2nd and Chief Engineer roles, depending on the vessel propulsion and engine kW.

***Integrated Assessment Focus Area 1***

IAFA01 Correct records are made relating to the operation and performance evaluation of engines (internal combustion or gas turbine), propulsion plant and auxiliary equipment and any engine or gas turbine or machinery failure incidents (20%)

***Associated Assessment Criteria***

IAFA0101 Documentation is maintained and updated
IAFA0102 All engineers know the location of LSA and FFA
IAFA0103 All emergency escape routes are clearly marked and clear of any obstruction
IAFA0104 Record keeping: Different records of the engine room have to be maintained and updated regularly. This is the responsibility of the second engineer. A few examples of important records are log book, bell book, Saturday or Monday routine book etc.
IAFA0105 All the spares for engine room machineries like pumps, auxiliary engine etc are to be stored and inventory to be maintained and updated regularly
IAFA0106 The quantity for oil present in the tanks for machinery operation like lube oil, fuel or diesel oil etc has to be recorded in an oil record book
IAFA0107 A track for the next bunker order also needs to be maintained

***Integrated Assessment Focus Area 2***

IAFA02 Identify typical operational and performance evaluation problems and hazards and take appropriate action (20%)

***Associated Assessment Criteria***

IAFA0201 Engine room is properly managed
IAFA0202 All engineers know the location of LSA and FFA
IAFA0203 All emergency escape routes are clearly marked and clear of any obstruction
IAFA0204 Oily water separator is effectively used
IAFA0205 Operation of incinerator is conducted
IAFA0206 Sewage plant is effectively monitored and controlled
IAFA0207 Oil transferring procedure is executed
IAFA0208 Oil record book and engine room log book is updated
IAFA0209 All bilge over board valves are shut and locked in port and in special area

***Integrated Assessment Focus Area 3***

IAFA03 Identify malfunctioning and faulty engines (internal combustion and gas turbines), propulsion plant and auxiliary machinery and initiate appropriate action for repair or replacement (20%)

***Associated Assessment Criteria***

IAFA0301 Engine room is maintained in clean, painted and sanitary condition
IAFA0302 All tools and stores are kept safely and location recorded
IAFA0303 All heavy items are secured at all times
IAFA0304 All leaks and damages are attended as soon as possible
IAFA0305 Bilge garbage and sewage are managed as per regulation

IAFA0306 In state of readiness at all times
IAFA0307 Proper round checks carried out
IAFA0308 PMS jobs to be carried out
IAFA0309 Attend to all major repair works
IAFA03010 Keep track of all defects and repair required
IAFA03011 Able to damage any other emergency repairs outside PMS
IAFA03012 Ensure handling / tacking over reports cover the engineer's general duties, their performance and any special job as a requirement

***Integrated Assessment Focus Area 4***

IAFA04 Repair processes and the organisation and control engine room personnel to facilitate repairs are as per established procedures (20%)

***Associated Assessment Criteria***

IAFA0401 Ensure engine room is properly manned
IAFA0402 Jobs are properly distributed
IAFA0403 Clear briefing is done before job is carried out
IAFA0404 Guidance and proper training of personnel are provided
IAFA0405 Understanding the consequence of pollution is ensured
IAFA0406 All work done is compiled for future records
IAFA0407 Shore personnel is observed

***Integrated Assessment Focus Area 5***

IAFA05 Safety, hazard minimisation and pollution control procedures and national and international regulations are followed at all times during maintenance and repair operations (20%)

***Associated Assessment Criteria***

IAFA0501 Engine room security duties are monitored and controlled
IAFA0502 A security patrol is conducted in a simulated environment

**1.4.3.7 315101000#07: Marine Motorman Grade 1**

**A Marine Motorman Grade 1** supports the Chief Engineer to manage, control and participate in the safe operation, maintenance and repair of mechanical, electrical and electronic equipment and machinery on board a fishing vessel, or performs related supporting functions on shore. They could perform in both the 2nd and Chief Engineer roles, depending on the vessel propulsion and engine kW.

***Integrated Assessment Focus Area 1***

IAFA01 Correct records are made relating to the operation and performance evaluation of engines (internal combustion or gas turbine), propulsion plant and auxiliary equipment and any engine or gas turbine or machinery failure incidents (20%)

***Associated Assessment Criteria***

IAFA0101 Documentation is maintained and updated
IAFA0102 All engineers know the location of LSA and FFA
IAFA0103 All emergency escape routes are clearly marked and clear of any obstruction

IAFA0104 Record keeping: Different records of the engine room have to be maintained and updated regularly. This is the responsibility of the second engineer. A few examples of important records are log book, bell book, Saturday or Monday routine book etc.

IAFA0105 All the spares for engine room machineries like pumps, auxiliary engine etc are to be stored and inventory to be maintained and updated regularly

IAFA0106 The quantity for oil present in the tanks for machinery operation like lube oil, fuel or diesel oil etc has to be recorded in an oil record book

IAFA0107 A track for the next bunker order also needs to be maintained

***Integrated Assessment Focus Area 2***

IAFA02 All operational and performance evaluation documentation is completed in accordance with vessel's procedures, bridge orders, survey and company requirements and regulations (20%)

***Associated Assessment Criteria***

IAFA0201 Engine room is properly managed

IAFA0202 All engineers know the location of LSA and FFA

IAFA0203 All emergency escape routes are clearly marked and clear of any obstruction

IAFA0204 Oily water separator is effectively used

IAFA0205 Operation of incinerator is conducted

IAFA0206 Sewage plant is effectively monitored and controlled

IAFA0207 Oil transferring procedure is executed

IAFA0208 Oil record book and engine room log book is updated

IAFA0209 All bilge over board valves are shut and locked in port and in special area

***Integrated Assessment Focus Area 3***

IAFA03 Carry out the necessary corrective action based on the outcome of planned and unplanned maintenance assessments of the mechanical, electrical, pneumatic and hydraulic conditions of the plant (20%)

***Associated Assessment Criteria***

IAFA0301 Engine room is maintained in clean, painted and sanitary condition

IAFA0302 All tools and stores are kept safely and location recorded

IAFA0303 All heavy items are secured at all times

IAFA0304 All leaks and damages are attended as soon as possible

IAFA0305 Bilge garbage and sewage are managed as per regulation

IAFA0306 In state of readiness at all times

IAFA0307 Proper round checks carried out

IAFA0308 PMS jobs to be carried out

IAFA0309 Attend to all major repair works

IAFA03010 Keep track of all defects and repair required

IAFA03011 Able to damage any other emergency repairs outside PMS

IAFA03012 Ensure handling / tacking over reports cover the engineer’s general duties, their performance and any special job as a requirement

***Integrated Assessment Focus Area 4***

IAFA04 Repair processes and the organisation and control engine room personnel to facilitate repairs are as per established procedures (20%)

***Associated Assessment Criteria***

IAFA0401 Ensure engine room is properly manned
IAFA0402 Jobs are properly distributed
IAFA0403 Clear briefing is done before job is carried out
IAFA0404 Guidance and proper training of personnel are provided
IAFA0405 Understanding the consequence of pollution is ensured
IAFA0406 All work done is compiled for future records
IAFA0407 Shore personnel is observed

***Integrated Assessment Focus Area 5***

IAFA05 Action is taken in the event of an engine or machinery failure or emergency to secure the engine (internal combustion and gas turbine) or machinery and the vessel and maintain the safety of the vessel and persons involved, and shipboard emergency and contingency plans are followed (20%)

***Associated Assessment Criteria***

IAFA0501 Engine room security duties are monitored and controlled
IAFA0502 A security patrol is conducted in a simulated environment

### 1.4.3.8 315101000#08: Marine Motorman Grade 2

**A Marine Motorman Grade 2** supports the Engineering Officer (Marine Motorman Higher Grade, Marine Motorman Grade 1, 2nd Engineer, Chief Engineer) to manage, control and participate in the safe operation, maintenance and repair of mechanical, electrical and electronic equipment and machinery on board a fishing vessel, or performs related supporting functions on shore. They could perform in the 2nd and Chief Engineer roles, depending on the vessel propulsion and engine kW.

***Integrated Assessment Focus Area 1***

IAFA01 Correct records are made relating to the operation and performance evaluation of engines (internal combustion or gas turbine), propulsion plant and auxiliary equipment and any engine or gas turbine or machinery failure incidents (20%)

***Associated Assessment Criteria***

IAFA0101 Documentation is maintained and updated
IAFA0102 All engineers know the location of LSA and FFA
IAFA0103 All emergency escape routes are clearly marked and clear of any obstruction
IAFA0104 Record keeping: Different records of the engine room have to be maintained and updated regularly. This is the responsibility of the second engineer. A few examples of important records are log book, bell book, Saturday or Monday routine book etc.
IAFA0105 All the spares for engine room machineries like pumps, auxiliary engine etc are to be stored and inventory to be maintained and updated regularly

IAFA0106 The quantity for oil present in the tanks for machinery operation like lube oil, fuel or diesel oil etc has to be recorded in an oil record book

IAFA0107 A track for the next bunker order also needs to be maintained

***Integrated Assessment Focus Area 2***

IAFA02 All operational and performance evaluation documentation is completed in accordance with vessel's procedures, bridge orders, survey and company requirements and regulations (20%)

***Associated Assessment Criteria***

IAFA0201 Engine room is properly managed

IAFA0202 All engineers know the location of LSA and FFA

IAFA0203 All emergency escape routes are clearly marked and clear of any obstruction

IAFA0204 Oily water separator is effectively used

IAFA0205 Operation of incinerator is conducted

IAFA0206 Sewage plant is effectively monitored and controlled

IAFA0207 Oil transferring procedure is executed

IAFA0208 Oil record book and engine room log book is updated

IAFA0209 All bilge over board valves are shut and locked in port and in special area

***Integrated Assessment Focus Area 3***

IAFA03 Carry out the necessary corrective action based on the outcome of planned and unplanned maintenance assessments of the mechanical, electrical, pneumatic and hydraulic conditions of the plant (20%)

***Associated Assessment Criteria***

IAFA0301 Engine room is maintained in clean, painted and sanitary condition

IAFA0302 All tools and stores are kept safely and location recorded

IAFA0303 All heavy items are secured at all times

IAFA0304 All leaks and damages are attended as soon as possible

IAFA0305 Bilge garbage and sewage are managed as per regulation

IAFA0306 In state of readiness at all times

IAFA0307 Proper round checks carried out

IAFA0308 PMS jobs to be carried out

IAFA0309 Attend to all major repair works

IAFA03010 Keep track of all defects and repair required

IAFA03011 Able to damage any other emergency repairs outside PMS

IAFA03012 Ensure handling / tacking over reports cover the engineer’s general duties, their performance and any special job as a requirement

***Integrated Assessment Focus Area 4***

IAFA04 Repair processes and the organisation and control engine room personnel to facilitate repairs are as per established procedures (20%)

***Associated Assessment Criteria***

IAFA0401 Ensure engine room is properly manned

IAFA0402 Jobs are properly distributed

IAFA0403 Clear briefing is done before job is carried out
IAFA0404 Guidance and proper training of personnel are provided
IAFA0405 Understanding the consequence of pollution is ensured
IAFA0406 All work done is compiled for future records
IAFA0407 Shore personnel is observed

***Integrated Assessment Focus Area 5***

IAFA05 Action is taken in the event of an engine or machinery failure or emergency to secure the engine (internal combustion and gas turbine) or machinery and the vessel and maintain the safety of the vessel and persons involved, and shipboard emergency and contingency plans are followed (20%)

***Associated Assessment Criteria***

IAFA0501 Engine room security duties are monitored and controlled
IAFA0502 A security patrol is conducted in a simulated environment

## 2. ASSIGNMENTS TO BE EVALUATED EXTERNALLY

No assignments must be produced for external evaluation

## 3. CRITICAL ASPECTS OF THE INTERNAL ASSESSMENTS BE ASSESSED EXTERNALLY

No internal assessments to be re-assessed during external assessment

## 4. CRITERIA FOR THE REGISTRATION OF ASSESSORS

- Minimum of two (2) years' qualifying service as certificated Engineer Officer
- Registered with ETQA as an assessor
- Registered with SAMSA in its regulatory capacity

## 5. FOUNDATIONAL LEARNING

Foundational learning competence is a pre-requisite for the awarding Part Qualifications: Marine Motorman Grade 2, 1 and Higher Grade of this qualification.

## 6 ELIGIBILITY REQUIREMENTS FOR THE EXTERNAL ASSESSMENT

In order to qualify for the external summative assessment learners must have a copy of a completed and signed Statement of Work Experience as well as proof of successful completion of the following subjects and modules or alternative programmes where applicable.

### 6.1 Qualification

| Proof of Knowledge Modules | | | | Or | Proof of Alternative Programmes | | | |
|---|---|---|---|---|---|---|---|---|
| ***Number*** | ***Title*** | ***NQF Level*** | ***Credits*** | | **Number** | **Title** | **NQF Level** | **Credits** |
| 315101000-KM-01 | Naval Architecture | 6 | 12 | | | | | |
| 315101000-KM-02 | Naval Architecture (Fishing) | 5 | 5 | | | | | |
| 315101000-KM-03 | Personnel Management and Ships Master Business | 5 | 10 | | | | | |
| 315101000-KM-04 | Personnel Management and Ships Master Business (Fishing) | 5 | 5 | | | | | |
| 315101000-KM-05 | Engineering Knowledge | 5 | 24 | | | | | |
| 315101000-KM-06 | Emergency Procedures | 4 | 2 | | | | | |
| 315101000-KM-07 | Fishing Safety | 3 | 2 | | | | | |
| 315101000-KM-08 | Electrotechnology | 6 | 6 | | | | | |
| 315101000-KM-09 | Applied Marine Science and Mathematics | 6 | 8 | | | | | |
| 315101000-KM-10 | Engineering Drawing | 4 | 6 | | | | | |
| 315101000-KM-11, | General Engineering Science / Applied Mechanics | 5 | 6 | | | | | |
| 315101000-KM-12 | Heat Engines / Thermodynamics | 5 | 6 | | | | | |
| 315101000-KM-13 | Proficiency in Survival Craft and Rescue Boats | 3 | 3 | | | | | |
| 315101000-KM-14 | Personal Survival Techniques | 4 | 2 | | | | | |
| 315101000-KM-15 | Personal Safety and Social Responsibility | 4 | 2 | | | | | |
| 315101000-KM-16 | Medical First Aid | 3 | 2 | | | | | |
| 315101000-KM-17 | Fire Prevention and Fire | 3 | 2 | | | | | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Fighting | | | | | | | |
| 315101000-KM-18 | Advanced Fire Fighting | 4 | 2 | | | | | |
| 315101000-KM-19 | Industrial Electronics | 6 | 6 | | | | | |
| 315101000-KM-20 | Control Systems | 6 | 6 | | | | | |
| 315101000-KM-21 | Fundamentals of Communications | 3 | 2 | | | | | |

| **Proof of Practical Skill Modules** | | | | **Or** | **Proof of Alternative Programmes** | | | |
|---|---|---|---|---|---|---|---|---|
| ***Number*** | ***Title*** | ***NQF Level*** | ***Credits*** | | **Number** | **Title** | **NQF Level** | **Credits** |
| 315101000-PM-01 | Perform marine engineering duties | 6 | 25 | | | | | |
| 315101000-PM-02 | Ensure the vessel is in good mechanical order and is safe to take passengers and crew out to sea | 6 | 25 | | | | | |
| 315101000-PM-03 | Provide maintenance and repair on board ship | 6 | 25 | | | | | |
| 315101000-PM-04 | Manage Service Providers and / or Personnel | 6 | 25 | | | | | |
| 315101000-PM-05 | Monitor and control designated security duties and contingency plans at management level | 5 | 5 | | | | | |

**And**

**Statement of Work Experience**

**6.2 Phase 1**

No Phase Tests applicable

### 6.3 Part Qualification

#### 6.3.1 315101000#01: Fishing Chief Engineer

**A Fishing Chief Engineer** manages, controls and participates in the safe operation, maintenance and repair of mechanical, electrical and electronic equipment and machinery on board a fishing vessel, or performs related supporting functions on shore

| Proof of Knowledge Modules | | | | Or | Proof of Alternative Programmes | | | |
|---|---|---|---|---|---|---|---|---|
| ***Number*** | ***Title*** | ***NQF Level*** | ***Credits*** | | **Number** | **Title** | **NQF Level** | **Credits** |
| 315101000-KM-02 | Naval Architecture (Fishing) | 5 | 5 | | | | | |
| 315101000-KM-04 | Personnel Management and Ships Master Business (Fishing) (1 to 4 ) | 5 | 5 | | | | | |
| 315101000-KM-05 | Engineering Knowledge (Module 1) | 5 | 12 | | | | | |
| 315101000-KM-06 | Emergency Procedures (1 to 2) | 4 | 2 | | | | | |
| 315101000-KM-07 | Fishing Safety (1 to 2) | 3 | 2 | | | | | |
| 315101000-KM-08 | Electrotechnology (1) | 6 | 6 | | | | | |
| 315101000-KM-09 | Applied Marine Science and Mathematics (1 to 2) | 6 | 8 | | | | | |
| 315101000-KM-10 | Engineering Drawing (1) | 4 | 6 | | | | | |
| 315101000-KM-11 | General Engineering Science / Applied Mechanics (1 to 2) | 5 | 7 | | | | | |
| 315101000-KM-12 | Heat Engines / Thermodynamics (1 to 3) | 5 | 7 | | | | | |
| 315101000-KM-13 | Proficiency in Survival Craft and Rescue Boats | 4 | 4 | | | | | |
| 315101000-KM-18 | Advanced Fire Fighting | 4 | 4 | | | | | |
| 315101000-KM-19 | Industrial Electronics | 6 | 6 | | | | | |
| 315101000-KM-20 | Control Systems | 6 | 6 | | | | | |

| Proof of Practical Skill Modules | | | | Or | Proof of Alternative Programmes | | | |
|---|---|---|---|---|---|---|---|---|
| ***Number*** | ***Title*** | ***NQF Level*** | ***Credits*** | | **Number** | **Title** | **NQF Level** | **Credits** |
| 315101000-PM-01 | Perform marine engineering duties | 6 | 25 | | | | | |
| 315101000-PM-02 | Ensure the vessel is in good mechanical order and is safe to take passengers and crew out to sea | 6 | 25 | | | | | |
| 315101000-PM-03 | Provide maintenance and repair on board ship | 6 | 25 | | | | | |
| 315101000-PM-04 | Manage Service Providers and or Personnel | 6 | 25 | | | | | |
| 315101000-PM-05 | Monitor and control designated security duties and contingency plans at management level | 5 | 5 | | | | | |

**And**

**Statement of Work Experience**

### 6.3.2 315101000#02: Fishing Chief Engineer < 3000KW

**A Fishing Chief Engineer <3000KW** manages, controls and participates in the safe operation, maintenance and repair of mechanical, electrical and electronic equipment and machinery on board a fishing vessel less than 3000KW, or performs related supporting functions on shore.

| Proof of Knowledge Modules | | | | Or | Proof of Alternative Programmes | | | |
|---|---|---|---|---|---|---|---|---|
| ***Number*** | ***Title*** | ***NQF Level*** | ***Credits*** | | **Number** | **Title** | **NQF Level** | **Credits** |
| 315101000-KM-02 | Naval Architecture (Fishing) | 5 | 5 | | | | | |
| 315101000-KM-04 | Personnel Management and | 5 | 5 | | | | | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Ships Master Business (Fishing) (1 to 4 ) | | | | | | | |
| 315101000-KM-05 | Engineering Knowledge (Module 1) | 5 | 12 | | | | | |
| 315101000-KM-06 | Emergency Procedures (1 to 2) | 4 | 2 | | | | | |
| 315101000-KM-07 | Fishing Safety (1 to 2) | 3 | 2 | | | | | |
| 315101000-KM-08 | Electrotechnology (1) | 6 | 6 | | | | | |
| 315101000-KM-09 | Applied Marine Science and Mathematics (1 to 2) | 6 | 8 | | | | | |
| 315101000-KM-10 | Engineering Drawing (1) | 4 | 6 | | | | | |
| 315101000-KM-11 | General Engineering Science / Applied Mechanics (1 to 2) | 5 | 6 | | | | | |
| 315101000-KM-12 | Heat Engines / Thermodynamics (1 to 3) | 5 | 6 | | | | | |
| 315101000-KM-13 | Proficiency in Survival Craft and Rescue Boats | 4 | 4 | | | | | |
| 315101000-KM-18 | Advanced Fire Fighting | 4 | 2 | | | | | |
| 315101000-KM-19 | Industrial Electronics | 6 | 6 | | | | | |
| 315101000-KM-20 | Control Systems | 6 | 6 | | | | | |

| **Proof of Practical Skill Modules** | | | | **Or** | **Proof of Alternative Programmes** | | | |
|---|---|---|---|---|---|---|---|---|
| ***Number*** | ***Title*** | ***NQF Level*** | ***Credits*** | | **Number** | **Title** | **NQF Level** | **Credits** |
| 315101000-PM-01 | Perform marine engineering duties | 6 | 25 | | | | | |
| 315101000-PM-02 | Ensure the vessel is in good mechanical order and is safe to take passengers and crew out to sea | 6 | 25 | | | | | |
| 315101000-PM-03 | Provide maintenance and repair on board ship | 6 | 25 | | | | | |
| 315101000-PM-04 | Manage Service Providers and or Personnel | 6 | 25 | | | | | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 315101000-PM-05 | Monitor and control designated security duties and contingency plans at management level | 5 | 5 | | | | | |

**And**

**Statement of Work Experience**

### 6.3.3 315101000#03: Port Operations Chief Engineer

**A Port Operations Chief Engineer** manages, controls and participates in the safe operation, maintenance and repair of mechanical, electrical and electronic equipment and machinery on board a vessel, or performs related supporting functions on shore.

| Proof of Knowledge Modules | | | | Or | Proof of Alternative Programmes | | | |
|---|---|---|---|---|---|---|---|---|
| ***Number*** | ***Title*** | ***NQF Level*** | ***Credits*** | | **Number** | **Title** | **NQF Level** | **Credits** |
| 315101000-KM-01 | Naval Architecture (1-6, 7(#5, 6, 7) 8,11 and 12) | 6 | 6 | | | | | |
| 315101000-KM-03 | Personnel Management and Ships Master Business (1 to 4 and 6) | 5 | 6 | | | | | |
| 315101000-KM-05 | Engineering Knowledge (1 and 2) | 5 | 24 | | | | | |
| 315101000-KM-08 | Electrotechnology (1) | 6 | 6 | | | | | |
| 315101000-KM-09 | Applied Marine Science and Mathematics (1) | 6 | 8 | | | | | |
| 315101000-KM-10 | Engineering Drawing (1) | 4 | 6 | | | | | |
| 315101000-KM-11 | General Engineering Science / Applied Mechanics (1 to 2) | 5 | 6 | | | | | |
| 315101000-KM-12 | Heat Engines / Thermodynamics (1 to 3) | 5 | 6 | | | | | |
| 315101000-KM-18 | Advanced Fire Fighting | 4 | 2 | | | | | |
| 315101000-KM-19 | Industrial Electronics | 6 | 6 | | | | | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 315101000-KM-20 | Control Systems | 6 | 6 | | | | | |

| Proof of Practical Skill Modules | | | | Or | Proof of Alternative Programmes | | | |
|---|---|---|---|---|---|---|---|---|
| ***Number*** | ***Title*** | ***NQF Level*** | ***Credits*** | | **Number** | **Title** | **NQF Level** | **Credits** |
| 315101000-PM-01 | Perform marine engineering duties | 6 | 25 | | | | | |
| 315101000-PM-02 | Ensure the vessel is in good mechanical order and is safe to take passengers and crew out to sea | 6 | 25 | | | | | |
| 315101000-PM-03 | Provide maintenance and repair on board ship | 6 | 25 | | | | | |
| 315101000-PM-04 | Manage Service Providers and or Personnel | 6 | 25 | | | | | |
| 315101000-PM-05 | Monitor and control designated security duties and contingency plans at management level | 5 | 5 | | | | | |

**And**

**Statement of Work Experience**

### 6.3.4 315101000#04: Port Operations Chief Engineer <1500kW

**A Port Operations Chief Engineer <1500kW** manages, controls and participates in the safe operation, maintenance and repair of mechanical, electrical and electronic equipment and machinery on board a vessel <1500kW, or performs related supporting functions on shore.

| Proof of Knowledge Modules | | | | Or | Proof of Alternative Programmes | | | |
|---|---|---|---|---|---|---|---|---|
| ***Number*** | ***Title*** | ***NQF Level*** | ***Credits*** | | **Number** | **Title** | **NQF Level** | **Credits** |
| 315101000-KM-01 | Naval Architecture (1-6) | 6 | 6 | | | | | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 315101000-KM-03 | Personnel Management and Ships Master Business (1 to 4) | 5 | 5 | | | | | |
| 315101000-KM-05 | Engineering Knowledge (1) | 5 | 12 | | | | | |
| 315101000-KM-08 | Electrotechnology (1) | 6 | 6 | | | | | |
| 315101000-KM-09 | Applied Marine Science and Mathematics (1) | 6 | 8 | | | | | |
| 315101000-KM-10 | Engineering Drawing (1) | 4 | 6 | | | | | |
| 315101000-KM-11 | General Engineering Science / Applied Mechanics (1) | 5 | 3 | | | | | |
| 315101000-KM-12 | Heat Engines / Thermodynamics (1) | 5 | 2 | | | | | |
| 315101000-KM-19 | Industrial Electronics | 6 | 6 | | | | | |
| 315101000-KM-20 | Control Systems | 6 | 6 | | | | | |

| **Proof of Practical Skill Modules** | | | | **Or** | **Proof of Alternative Programmes** | | | |
|---|---|---|---|---|---|---|---|---|
| ***Number*** | ***Title*** | ***NQF Level*** | ***Credits*** | | **Number** | **Title** | **NQF Level** | **Credits** |
| 315101000-PM-01 | Perform marine engineering duties | 6 | 25 | | | | | |
| 315101000-PM-02 | Ensure the vessel is in good mechanical order and is safe to take passengers and crew out to sea | 6 | 25 | | | | | |
| 315101000-PM-03 | Provide maintenance and repair on board ship | 6 | 25 | | | | | |
| 315101000-PM-04 | Manage Service Providers and or Personnel | 6 | 25 | | | | | |
| 315101000-PM-05 | Monitor and control designated security duties and contingency plans at management level | 5 | 5 | | | | | |

**And**

**Statement of Work Experience**

### 6.3.5 315101000#05: Fishing 2nd Engineer

**A Fishing 2nd Engineer** supports the Chief Engineer to manage, control and participate in the safe operation, maintenance and repair of mechanical, electrical and electronic equipment and machinery on board a fishing vessel, or performs related supporting functions on shore.

| Proof of Knowledge Modules | | | | Or | Proof of Alternative Programmes | | | |
|---|---|---|---|---|---|---|---|---|
| ***Number*** | ***Title*** | ***NQF Level*** | ***Credits*** | | **Number** | **Title** | **NQF Level** | **Credits** |
| 315101000-KM-02 | Naval Architecture (Fishing) | 5 | 5 | | | | | |
| 315101000-KM-04 | Personnel Management and Ships Master Business (Fishing) (1 to 3 ) | 4 | 5 | | | | | |
| 315101000-KM-05 | Engineering Knowledge (1) | 5 | 12 | | | | | |
| 315101000-KM-06 | Emergency Procedures (1 to 2) | 4 | 2 | | | | | |
| 315101000-KM-07 | Fishing Safety (1 to 2) | 3 | 2 | | | | | |
| 315101000-KM-08 | Electrotechnology (1) | 6 | 6 | | | | | |
| 315101000-KM-09 | Applied Marine Science and Mathematics (1) | 6 | 8 | | | | | |
| 315101000-KM-10 | Engineering Drawing (1) | 4 | 6 | | | | | |
| 315101000-KM-11 | General Engineering Science / Applied Mechanics (1) | 5 | 6 | | | | | |
| 315101000-KM-12 | Heat Engines / Thermodynamics (1) | 5 | 6 | | | | | |
| 315101000-KM-13 | Proficiency in Survival Craft and Rescue Boats | 4 | 4 | | | | | |
| 315101000-KM-18 | Advanced Fire Fighting | 4 | 2 | | | | | |
| 315101000-KM-19 | Industrial Electronics | 5 | 6 | | | | | |
| 315101000-KM-20 | Control Systems | 5 | 6 | | | | | |

| Proof of Practical Skill Modules | Or | Proof of Alternative Programmes |
|---|---|---|

| *Number* | *Title* | *NQF Level* | *Credits* | | Number | Title | NQF Level | Credits |
|---|---|---|---|---|---|---|---|---|
| 315101000-PM-01 | Perform marine engineering duties | 6 | 25 | | | | | |
| 315101000-PM-02 | Ensure the vessel is in good mechanical order and is safe to take passengers and crew out to sea | 6 | 25 | | | | | |
| 315101000-PM-03 | Provide maintenance and repair on board ship | 6 | 25 | | | | | |
| 315101000-PM-04 | Manage Service Providers and or Personnel | 6 | 25 | | | | | |
| 315101000-PM-05 | Monitor and control designated security duties and contingency plans at management level | 5 | 5 | | | | | |

**And**

**Statement of Work Experience**

### 6.4.6 315101000#06: Marine Motorman Higher Grade

**A Marine Motorman Higher Grade** manages, controls and participates in the safe operation, maintenance and repair of mechanical, electrical and electronic equipment and machinery on board a fishing vessel, or performs related supporting functions on shore. They could perform in both the 2nd and Chief Engineer roles, depending on the vessel propulsion and engine kW.

| Proof of Knowledge Modules | | | | Or | Proof of Alternative Programmes | | | |
|---|---|---|---|---|---|---|---|---|
| *Number* | *Title* | *NQF Level* | *Credits* | | Number | Title | NQF Level | Credits |
| 315101000-KM-02 | Naval Architecture (Fishing) (1-4) | 5 | 5 | | | | | |
| 315101000-KM-04 | Personnel Management and Ships Master Business (Fishing) | 5 | 5 | | | | | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | (1-4) | | | | | | | |
| 315101000-KM-05 | Engineering Knowledge (1) | 4 | 12 | | | | | |
| 315101000-KM-06 | Emergency Procedures (1 to 2) | 4 | 2 | | | | | |
| 315101000-KM-07 | Fishing Safety (1 to 2) | 3 | 2 | | | | | |
| 315101000-KM-08 | Electrotechnology | 4 | 6 | | | | | |
| 315101000-KM-11 | General Engineering Science / Applied Mechanics | 4 | 6 | | | | | |
| 315101000-KM-13 | Proficiency in Survival Craft and Rescue Boats | 4 | 4 | | | | | |
| 315101000-KM-18 | Advanced Fire Fighting | 4 | 2 | | | | | |
| 315101000-KM-19 | Industrial Electronics | 4 | 6 | | | | | |
| 315101000-KM-20 | Control Systems | 4 | 6 | | | | | |

| **Proof of Practical Skill Modules** | | | | **Or** | **Proof of Alternative Programmes** | | | |
|---|---|---|---|---|---|---|---|---|
| ***Number*** | ***Title*** | ***NQF Level*** | ***Credits*** | | **Number** | **Title** | **NQF Level** | **Credits** |
| 315101000-PM-01 | Perform marine engineering duties | 4 | 25 | | | | | |
| 315101000-PM-02 | Ensure the vessel is in good mechanical order and is safe to take passengers and crew out to sea | 4 | 25 | | | | | |
| 315101000-PM-03 | Provide maintenance and repair on board ship | 4 | 25 | | | | | |
| 315101000-PM-04 | Manage Service Providers and or Personnel | 4 | 25 | | | | | |
| 315101000-PM-05 | Monitor and control designated security duties and contingency plans at management level | 5 | 5 | | | | | |

**And**

**Statement of Work Experience**

### 6.4.7 315101000#07: Marine Motorman Grade 1

**A Marine Motorman Grade 1** supports the Chief Engineer to manage, control and participate in the safe operation, maintenance and repair of mechanical, electrical and electronic equipment and machinery on board a fishing vessel, or performs related supporting functions on shore. They could perform in both the 2nd and Chief Engineer roles, depending on the vessel propulsion and engine kW.

| Proof of Knowledge Modules | | | | Or | Proof of Alternative Programmes | | | |
|---|---|---|---|---|---|---|---|---|
| ***Number*** | ***Title*** | ***NQF Level*** | ***Credits*** | | **Number** | **Title** | **NQF Level** | **Credits** |
| 315101000-KM-02 | Naval Architecture (Fishing) (1-2) | 3 | 2 | | | | | |
| 315101000-KM-04 | Personnel Management and Ships Master Business (Fishing) (1 to 3) | 4 | 2 | | | | | |
| 315101000-KM-05 | Engineering Knowledge (1 MN26 of 2013) | 3 | 12 | | | | | |
| 315101000-KM-06 | Emergency Procedures (1) | 4 | 2 | | | | | |
| 315101000-KM-07 | Fishing Safety (1 to 2) | 3 | 2 | | | | | |

| Proof of Practical Skill Modules | | | | Or | Proof of Alternative Programmes | | | |
|---|---|---|---|---|---|---|---|---|
| ***Number*** | ***Title*** | ***NQF Level*** | ***Credits*** | | **Number** | **Title** | **NQF Level** | **Credits** |
| 315101000-PM-01 | Perform marine engineering duties | 3 | 6 | | | | | |
| 315101000-PM-02 | Ensure the vessel is in good mechanical order and is safe to take passengers and crew out to sea | 3 | 6 | | | | | |
| 315101000-PM-03 | Provide maintenance and repair on board ship | 3 | 7 | | | | | |
| 315101000-PM-04 | Manage Service Providers and | 3 | 7 | | | | | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | or Personnel | | | | | | | |
| 315101000-PM-05 | Monitor and control designated security duties and contingency plans at management level | 5 | 4 | | | | | |

**And**

**Statement of Work Experience**

### 6.3.8 315101000#08: Marine Motorman Grade 2

**A Marine Motorman Grade 2** supports the Engineering Officer (Marine Motorman Higher Grade, Marine Motorman Grade 1, 2nd Engineer, Chief Engineer) to manage, control and participate in the safe operation, maintenance and repair of mechanical, electrical and electronic equipment and machinery on board a fishing vessel, or performs related supporting functions on shore. They could perform in the 2nd and Chief Engineer roles, depending on the vessel propulsion and engine kW.

| **Proof of Knowledge Modules** | | | | **Or** | **Proof of Alternative Programmes** | | | |
|---|---|---|---|---|---|---|---|---|
| ***Number*** | ***Title*** | ***NQF Level*** | ***Credits*** | | **Number** | **Title** | **NQF Level** | **Credits** |
| 315101000-KM-02 | Naval Architecture (Fishing) (1) | 3 | 2 | | | | | |
| 315101000-KM-04 | Personnel Management and Ships Master Business (Fishing) (1) | 4 | 2 | | | | | |
| 315101000-KM-05 | Engineering Knowledge (1 MN26 of 2013) | 3 | 12 | | | | | |
| 315101000-KM-06 | Emergency Procedures (1) | 4 | 2 | | | | | |
| 315101000-KM-07 | Fishing Safety (1) | 3 | 2 | | | | | |
| 315101000-KM-14 | Personal Survival Techniques | 4 | 2 | | | | | |
| 315101000-KM-16 | Medical First Aid | 4 | 2 | | | | | |
| 315101000-KM-17 | Fire Prevention and Fire Fighting | 3 | 2 | | | | | |
| 315101000-KM-21 | Fundamentals of Communications | 3 | 2 | | | | | |

| Proof of Practical Skill Modules | | | | Or | Proof of Alternative Programmes | | | |
|---|---|---|---|---|---|---|---|---|
| ***Number*** | ***Title*** | ***NQF Level*** | ***Credits*** | | **Number** | **Title** | **NQF Level** | **Credits** |
| 315101000-PM-01 | Perform marine engineering duties | 3 | 10 | | | | | |
| 315101000-PM-02 | Ensure the vessel is in good mechanical order and is safe to take passengers and crew out to sea | 3 | 6 | | | | | |
| 315101000-PM-03 | Provide maintenance and repair on board ship | 3 | 15 | | | | | |
| 315101000-PM-04 | Manage Service Providers and or Personnel | 3 | 6 | | | | | |
| 315101000-PM-05 | Monitor and control designated security duties and contingency plans at management level | 5 | 5 | | | | | |

**And**

**Statement of Work Experience**