

Curriculum Document				
Curriculum Code	Curriculum Title			
315202000	National Occupational Certificate: Ship's Officer (Fishing Deck Officer)			
Development Quality Partner	Name	E-mail	Phone	Logo
	Transport Education Training Authority	Victor@teta.org.za	011-781 1280	

Learner QDF Signature

Date

QDF Signature

Date

DQP Representative Signature

Date

SECTION 1: CURRICULUM SUMMARY

1. Occupational Information

1.1 Associated Occupation

315202: Ship's Officer

1.2 Occupation or Specialisation Addressed by this Curriculum

315202000: Fishing Deck Officer

1.3 Alternative Titles used by Industry

- Boatswain / Bosun
- Deck Officer
- Officer of the Watch
- Mate or 2nd Mate

2. Curriculum Information

2.1 Curriculum Structure

This qualification is made up of the following compulsory Knowledge and Practical Skill Modules:

Knowledge Modules:

- 315202000-KM-01, Chartwork (1 to 5), NQF Level 4, Learning Contract Time 18 days, (Credit: 13)
- 315202000-KM-02, Electronic Navigation System (1 to 2), NQF Level 4, Learning Contract Time 10 days, (Credit: 7)
- 315202000-KM-03, Naval Architecture (Fishing) (1 to 4), NQF Level 4, Learning Contract Time 15 days, (Credit: 10)
- 315202000-KM-04, Ship's Power Plants (1), NQF Level 4, Learning Contract Time 10 days, (Credit: 8)
- 315202000-KM-05, Personnel Management and Ship's Master's Business (Fishing) (1 to 2 and 6), NQF Level 4, Learning Contract Time 10 days, (Credit: 6)
- 315202000-KM-06, Marine Environmental Studies (1), NQF Level 4, Learning Contract Time 14 days, (Credit:129)
- 315202000-KM-07, Ship and Manoeuvring and Handling (1), NQF Level 4, Learning Contract Time 6 days, (Credit: 4)
- 315202000-KM-08, Fishing Safety (1 to 2), NQF Level 4, Learning Contract Time 2 days (Credit: 2)
- 315202000-KM-09, Emergency Procedures (1 to 2), NQF Level 4, Learning Contract Time 2 days (Credit: 2)
- 315202000-KM-10, Maritime Communications (1), NQF Level 5, Learning Contract Time 10 days, (Credit: 7)
- 315202000-KM-11, Advanced Firefighting, 4, Learning Contract Time 3 days, Credits 4
- 315202000-KM-12, Security Awareness, NQF Level 3, Learning Contract Time 1 day, Credits 2

Total number of credits for Knowledge Modules: 71 (30%)

Practical Skill Modules:

- 315202000-PM-01, Navigate at an operational level, NQF Level 4, Learning Contract Time 80h, Credits 10
- 315202000-PM-02, Handle and stow catch (fish) at an operational level, NQF Level 4, Learning Contract Time 30h, Credits 4
- 315202000-PM-03, Assist with shipboard operations and care for persons on board at an operational level, NQF Level 4 Learning Contract Time 50h, Credits 5
- 315202000-PM-04, Handle and manoeuvre vessel at an operational level, NQF Level 4, Learning Contract Time 30h, Credits 4
- 315202000-PM-05, Maintain lifesaving and vessel's safety equipment at an operational level, NQF Level 3, Learning Contract Time 40h, Credits 4
- 315202000-PM-06; Contribute to security of vessel and crew, NQF Level 3, Learning Contract Time 20h, Credits 2
- 315202000-PM-07, Monitor, lead and develop crew, NQF Level 4, Learning Contract Time 35 days (Credits: 44)

Total number of credits for Practical Skill Modules: 72 (30%)

This qualification also requires the following **Work Experience Modules:**

- 315202000-WM-01, Following navigational procedures at an operational level, NQF Level 4, Learning Contract Time 30 days, Credits:14
- 315202000-WM-02, Complying with catch (fish) handling processes at an operational level, NQF Level 4, Learning Contract Time 26 days, Credits: 10
- 315202000-WM-03, Abiding by shipboard operations procedures and caring for persons on board at operational level, NQF Level 4, Learning Contract Time 30 days, Credits: 12
- 315202000-WM-04, Handling and manoeuvring vessel at an operational level, NQF Level 4, Learning Contract Time 20 days, Credits 8
- 315202000-WM-05, Complying with maintenance of lifesaving and vessel safety equipment, NQF Level 4, Learning Contract Time 10 days Credits: 8
- 315202000-WM-06, Conducting security operations at an operational level, NQF Level 4, Learning Contract Time 10 days Credits: 8
- 315202000-WM-07: Complying with personnel policies and procedures at an operational level, NQF level 6, Learning Contract Time 45 days Credits: 36

Total number of credits for Work Experience Modules: 96 (40%)

2.2 Entry Requirements

The entry requirements are prescribed by the Merchant Shipping (Safe Manning Training and Certification) Regulations

Further to the above requirement, the learner must have a current approved SAMSA medical fitness and eye test certificates

A specific requirement for entry into the workplace component of the Fishing Deck Officer <24m, is valid certification against the following ancillary courses:

- Personal Survival Techniques
- Personal Safety and Social Responsibility
- Medical First Aid
- Fire Prevention and Firefighting
- Safety Familiarisation

3. Assessment Quality Partner Information

Name of body: South African Maritime Safety Authority (SAMSA)

Address of body: 146 Lunnon Road, Cnr Jan Shoba & Lunnon Road, Hillcrest, 0183.
P.O Box 13186, Hatfield, Gauteng, Republic of South Africa

Contact person name: Mr Azwimbavhi Mulaudzi

Contact person work telephone number: (012) 366 2600, amulaudzi@smsa.org.za

4. Part Qualification Curriculum Structure

315202000#01: Fishing Deck Officer < 24 metres

The Fishing Deck Officer <24 metres performs navigational, maintenance and tasks at an operational level on a fishing vessel

Knowledge Modules:

- 315202000-KM-01, Chartwork (1 to 2), NQF Level 4, Learning Contract Time 24 days, Credits: 10
- 315202000-KM-02, Electronic Navigation System (1), NQF Level 4, Learning Contract Time 20 days, Credits: 8
- 315202000-KM-03, Naval Architecture (Fishing) (1 to 2), NQF Level 4, Learning Contract Time 17 days, Credits:8
- 315202000-KM-05, Personnel Management and Ship's Master's Business (Fishing) (1), NQF Level 4, Learning Contract Time 10 days, Credits: 2
- 315202000-KM-06, Marine Environmental Studies (1), NQF Level 4, Learning Contract Time 24 days, Credits: 6
- 315202000-KM-07, Ship and Manoeuvring and Handling (1), NQF Level 4, Learning Contract Time 5 days, Credits: 4
- 315202000-KM-08, Fishing Safety (1), NQF Level 4, Learning Contract Time 2 days, Credits: 2
- 315202000-KM-09, Emergency Procedures (1), NQF Level 4, Learning Contract Time 4 days , Credits: 4
- 315202000-KM-10, Maritime Communications (1), NQF Level 5, Learning Contract Time 10 days, Credits: 7

Total number of credits for Knowledge Modules:

Practical Skill Modules:

- 315202000-PM-01, Navigate at an operational level, NQF Level 3, Learning Contract Time 50h, Credits 5
- 315202000-PM-02, Handle and stow catch (fish) at an operational level, NQF Level 3, Learning Contract Time 40h, Credits 4
- 315202000-PM-03, Assist with shipboard operations and care for persons on board at an operational level, NQF Level 3, Learning Contract Time 50h, Credits 5
- 315202000-PM-04, Handle and manoeuvre ship at an operational level, NQF Level 3, Learning Contract Time 40h, Credits 4
- 315202000-PM-05, Maintain lifesaving and vessel's safety equipment at an operational level, NQF Level 3, Learning Contract Time 40h, Credits 4
- 315202000-PM-06; Contribute to security of vessel and crew, NQF Level 3, Learning Contract Time 20h, Credits 2

- 315202000-PM-07, Monitor, lead and develop crew, NQF Level 4, Learning Contract Time 45 days (Credits: 36)

Total number of credits for Practical Skill Modules: 62

This qualification also requires the following **Work Experience Modules:**

- 315202000-WM-01, Following navigational procedures at an operational level, NQF Level 4, Learning Contract Time 30 days, Credits:14
- 315202000-WM-02, Complying with catch (fish) handling processes at an operational level, NQF Level 4, Learning Contract Time 26 days, Credits: 10
- 315202000-WM-03, Abiding by shipboard operations procedures and caring for persons on board at operational level, NQF Level 4, Learning Contract Time 30 days, Credits: 12
- 315202000-WM-04, Handling and manoeuvring vessel at an operational level, NQF Level 4, Learning Contract Time 20 days, Credits 8
- 315202000-WM-05, Complying with maintenance of lifesaving and vessel safety equipment, NQF Level 4, Learning Contract Time 10 days Credits: 8
- 315202000-WM-06, Conducting security operations at an operational level, NQF Level 4, Learning Contract Time 10 days Credits: 8
- 315202000-WM-07: Complying with personnel policies and procedures at an operational level, NQF level 6, Learning Contract Time 45 days Credits: 36

Total number of credits for Work Experience Modules: 96

315202000#02: Fishing Deck Officer > 24 metres

The Fishing Deck Officer >24 metres performs navigational, maintenance and tasks at an operational level on a fishing vessel

Knowledge Modules:

- 315202000-KM-01, Chartwork (1 to 5), NQF Level 4, Learning Contract Time 21 days, Credits 16
- 315202000-KM-02, Electronic Navigation System (1 to 2),NQF Level 4, Learning Contract Time 17 days, Credits 14
- 315202000-KM-03, Naval Architecture (Fishing) (1 to 4),NQF Level 4, Learning Contract Time 16 days, Credits 13
- 315202000-KM-04, Ship's Power Plant,(1) NQF Level 4, Learning Contract Time 15 days, Credits 12
- 315202000-KM-05, Personnel Management and Ship's Master's Business (Fishing) (1 to 2 and 6), NQF Level 4, Learning Contract Time 10 days, Credits 6
- 315202000-KM-06, Marine Environmental Studies (1), NQF Level 4, Learning Contract Time 16 days, Credits 12
- 315202000-KM-07, Ship and Manoeuvring and Handling (1), NQF Level 4, Learning Contract Time 6 days, Credits 4
- 315202000-KM-08, Fishing Safety (1 to 2), NQF Level 3, Learning Contract Time 2 days, Credits 2
- 315202000-KM-09, Emergency Procedures (1 to 2), NQF Level 4, Learning Contract Time 2 days, Credits 4
- 315202000-KM-10, Maritime Communications (1), NQF Level 5, Learning Contract Time 10 days, Credits 7
- 315202000-KM-11, Advanced firefighting, NQF Level 4, Learning Contract Time 3 days, Credits 4

- 315202000-KM-12, Security Awareness, NQF Level 4, Learning Contract Time 3 days, Credits 2

Total number of credits for Knowledge Modules:

Practical Skill Modules:

- 315202000-PM-01, Navigate at an operational level, NQF Level 3, Learning Contract Time 50h, Credits 5
- 315202000-PM-02, Handle and stow catch (fish) at an operational level, NQF Level 3, Learning Contract Time 40h, Credits 4
- 315202000-PM-03, Assist with shipboard operations and care for persons on board at an operational level, NQF Level 3, Learning Contract Time 50h, Credits 5
- 315202000-PM-04, Handle and manoeuvre ship at an operational level, NQF Level 3, Learning Contract Time 40h, Credits 4
- 315202000-PM-05, Maintain lifesaving and vessel's safety equipment at an operational level, NQF Level 3, Learning Contract Time 40h, Credits 4
- 315202000-PM-06; Contribute to security of vessel and crew, NQF Level 3, Learning Contract Time 20h, Credits 2
- 315202000-PM-07, Monitor, lead and develop crew, NQF Level 4, Learning Contract Time 45 days (Credits: 36)

Total number of credits for Practical Skill Modules: 62

This qualification also requires the following **Work Experience Modules:**

- 315202000-WM-01, Following navigational procedures at an operational level, NQF Level 4, Learning Contract Time 30 days, Credits:14
- 315202000-WM-02, Complying with catch (fish) handling processes at an operational level, NQF Level 4, Learning Contract Time 26 days, Credits: 10
- 315202000-WM-03, Abiding by shipboard operations procedures and caring for persons on board at operational level, NQF Level 4, Learning Contract Time 30 days, Credits: 12
- 315202000-WM-04, Handling and manoeuvring vessel at an operational level, NQF Level 4, Learning Contract Time 20 days, Credits 8
- 315202000-WM-05, Complying with maintenance of lifesaving and vessel safety equipment, NQF Level 4, Learning Contract Time 10 days Credits: 8
- 315202000-WM-06, Conducting security operations at an operational level, NQF Level 4, Learning Contract Time 10 days Credits: 8
- 315202000-WM-07: Complying with personnel policies and procedures at an operational level, NQF level 6, Learning Contract Time 45 days Credits: 36

Total number of credits for Work Experience Modules: 96

5. Articulation

Relation of this Curriculum to the Occupation and Qualification Progression

Learners entering this qualification will likely feed into the industry with a National Occupational Certificate: Fishing Deck Officer

The likely vertical progression for this qualification is a National Occupational Qualification: Ordinary Seafarer, Able Seafarer Deck (and Fishing), Ship's Officer (Fishing Deck Officer), Skipper <24 m, Skipper >24m, Chief Mate, Master

This National Occupational Qualification articulates horizontally with other Deck Officer occupations with cross-cutting credits in the Knowledge Specifications, i.e. Fishing, Maritime, and Port Operations

6. International Comparability

The international comparability study conducted specifically focused on identifying occupational standards or qualifications used in other countries that might contain indicators of best practice that could be used for comparison to or in the development of the Able Seafarer qualifications to be submitted for registration to the QCTO.

The International Maritime Organisation and its member states (UK, Australia and India) were selected as best practice as it was accepted as International standards

The content, scope and duration of the qualification is uniform internationally.

The Maritime profession is an area with globally recognised best practices, standards and Qualifications. This Qualification and set of Module specifications utilises international and locally recognised best practice and standards.

The data collection process included the following:

- International legislation and conventions
- An extensive Internet search focussing on the countries identified as best practice countries
- Follow-up by email to obtain more detailed information especially in relation to case studies
- Contacting professional and academic colleagues in target countries with direct involvement in the development or application of relevant vocational qualifications

The international comparability study was done in various countries, such as Papua New Guinea, United Kingdom, Australia, USA, India and South Africa.

Conclusion

The identification of tasks and job profiles is based upon a sound methodology and extensive consultation with practitioners, resulting in valid and credible outputs that informed the development of the qualifications and module specifications. Useful comparisons may be drawn between the environmental trends identified in the best practice countries and those affecting the competencies covered in these qualifications and module specifications.

7. Likely uptake of qualification: learners

Although exact numbers are difficult to come by, the employees within the Maritime sectors sector have already indicated a critical need for these advanced level occupational qualifications. Therefore a big uptake is expected should these occupational qualifications and part qualifications be associated to the regulatory environment within the Maritime industry.

8. Likely uptake of qualification: providers

It is anticipated that these occupational qualifications will be provided by various tertiary institutions and private providers

SECTION 2: OCCUPATIONAL PROFILE

1. Occupational Purpose

A Fishing Deck Officer performs navigational, maintenance and tasks at an operational level on a fishing vessel

2. Occupational Tasks

- Navigate fishing vessel at an operational level (NQF Level 4)
- Handle and stow catch (fish) at an operational level (NQF Level 4)
- Perform shipboard operations and care for persons on board at an operational level (NQF Level 4)
- Handle and manoeuvre fishing vessel at an operational level (NQF Level 4)
- Maintain and repair lifesaving and safety equipment at an operational level (NQF Level 4)
- Conduct security operations at an operational level (NQF level 3)
- Monitor, develop and lead crew at an operational level (NQF Level 4)

3. Occupational Task Details

3.1 Navigate fishing vessel at an operational level (NQF Level 4)

Unique Product or Service:

Safe navigation and watchkeeping

Occupational Responsibilities:

The learner will be required to:

- Prepare a passage plan for management approval
- Manage bridge resources including electronic navigation systems in a simulated environment
- Respond to emergency situations
- Apply human element leadership and teamwork principles

Occupational Contexts:

The learner will be required to be exposed to:

- Bridge watchkeeping procedures.
- Helm order instructions.
- Communication procedures.
- Collision regulations.
- Emergency procedures.
- Environmental protection procedures.
- Flag usage and display

3.2 Handle and stow catch (fish) at an operational level (NQF Level 4)

Unique Product or Service:

Fresh catch (fish)

Occupational Responsibilities:

The learner will be required to:

- Load, secure and discharge cargo and /or catch (fish)
- Communicate state of shipboard and plant operations
- Report and document catch (fish) document catch (fish)

Occupational Contexts:

The learner will be required to be exposed to:

- Shipboard catch (fish) handling and stowage procedures
- Shipboard catch handling and stowage procedures
- Marine pollution prevention procedures
- National and international maritime safety legislation
- Code of safe working practice for fisherman

3.3 Execute shipboard operations and care for persons on board at an operational level (NQF Level 4)

Unique Product or Service:

Safe ship and crew

Occupational Responsibilities:

The learner will be required to:

- Describe personal protective equipment for use while handling catch (fish) on board
- Describe procedures for the safe operation of lifting and hauling equipment on deck
- Describe procedures for the maintenance of medical and first aid facilities and equipment

Occupational Contexts:

The learner will be required to be exposed to:

- Shipboard safety procedures
- Shipboard operational procedures
- National and international maritime safety legislation
- Marine pollution prevention procedures

3.4 Handle and manoeuvre fishing vessel at an operational level (NQF Level 4)

Unique Product or Service:

Accurately manoeuvred vessel

Occupational Responsibilities:

The learner will be required to:

- Issue, receive and execute helm and engine control instructions
- Bring a vessel up to anchor
- Manoeuvre a vessel in port
- Manoeuvre a vessel at sea under different situations and conditions
- Signal intentions and/or communicate information

Occupational Contexts:

The learner will be required to be exposed to:

- Shipboard procedures for vessel handling and manoeuvring
- Shipboard procedures for anchoring, mooring and docking

3.5 Maintain and repair lifesaving and safety equipment at an operational level (NQF Level 4)

Unique Product or Service:

Well maintained lifesaving and safety equipment

Occupational Responsibilities:

The learner will be required to:

- Inspect emergency and lifesaving equipment
- Verify validity for use, of pyrotechnic equipment, EPIRBS, SARTS and hydrostatic relief mechanisms in a simulated environment

Occupational Contexts:

The learner will be required to be exposed to:

- Shipboard maintenance and repair procedures
- National and international maritime safety legislation
- Manufacturer's instructions

3.6 Conduct security operations at an operational level (NQF Level 4)

Unique Product or Service:

Safe and secure vessel

Occupational Responsibilities:

The learner will be required to:

- Carryout gangway security duties
- Report security incidents

Occupational Contexts:

The learner will be required to be exposed to:

- International and national maritime security legislation
- Vessel security procedures and contingency plans

3.7 Monitor, develop and lead crew at an operational level (NQF Level 4)

Unique Product or Service:

Optimized crew performance

Occupational Responsibilities:

The learner must be able to:

- Monitor and lead crew
- Ensure crew adhere to performance standards
- Optimise utilization of crew
- Compile continuous professional development plans and ensure training is attended

Occupational Contexts:

The learner must be exposed to:

- Conditions of work environment
- Labour legislation
- Skills development guidelines
- Performance management procedures
- Ergonomics
- Shipboard Safety Procedures
- Shipboard Operational procedures
- Code of Safe Working Practices for Merchant Seaman / Fishermen
- Marine pollution legislation

SECTION 3: CURRICULUM COMPONENT SPECIFICATIONS
SECTION 3A: KNOWLEDGE MODULE SPECIFICATIONS

List of Knowledge Modules for which Specifications are included

- 315202000-KM-01, Chartwork (1 to 5), NQF Level 4, Learning Contract Time 21 days, (Credit: 16)
- 315202000-KM-02, Electronic Navigation System (1 to 2), NQF Level 4, Learning Contract Time 17 days, (Credit: 14)
- 315202000-KM-03, Naval Architecture (Fishing) (1 to 4), NQF Level 6, Learning Contract Time 17 days, (Credit: 5)
- 315202000-KM-04, Ship's Power Plants (1), NQF Level 6, Learning Contract Time 10 days, (Credit: 10)
- 315202000-KM-05, Personnel Management and Ship's Master's Business (Fishing) (1 to 2 and 6), NQF Level 4, Learning Contract Time 10 days, (Credit: 9)
- 315202000-KM-06, Marine Environmental Studies (1), NQF Level 6, Learning Contract Time 16 days, (Credit: 12)
- 315202000-KM-07, Vessel and Manoeuvring and Handling (1), NQF Level 4, Learning Contract Time 6 days, (Credit: 4)
- 315202000-KM-08, Fishing Safety (1 to 2), NQF Level 3, Learning Contract Time 2 days (Credit: 2)
- 315202000-KM-09, Emergency Procedures (1 to 2), NQF Level 4, Learning Contract Time 2 days (Credit: 2)
- 315202000-KM-10, Communications (1), NQF Level 5, Learning Contract Time 10 days, (Credit:7)
- 315202000-KM-11, Advanced Firefighting, 4, Learning Contract Time 3 days, Credits 4
- 315202000-KM-12, Security Awareness, NQF Level 3, Learning Contract Time 1 day, Credits 1

1. 315202000-KM-01, Chart Work (1 to 5), NQF Level 4, 16 credits (Learning contract time 21 days)

1.1 Purpose of the Knowledge Module

The main focus of the learning in this knowledge subject is to equip qualifying learners with knowledge and skills to plan and conduct a safe passage.

The learning will enable learners to demonstrate an understanding of:

- KM-01-KT01: Basic Coastal Navigation Methods (18%)
- KM-01-KT02: Coastal Passage Plan Preparation (18%)
- KM-01-KT03: Coastal Passage Plan Monitoring and Execution Principles (18%)
- KM-01-KT04: Advanced Coastal Navigation Methods (25%)
- KM-01-KT05: Principles related to Monitoring and Execution of Coastal Passage Plan (31%)

1.2 Guidelines for Topics

1.2.1 KM-01-KT01: Basic Coastal Navigation Methods (18%)

Topic elements to be covered include:

- KT0101 Methods to determine a vessel's position on a chart
- KT0102 Procedures to determine safe courses between positions
- KT0103 Calculations related to converting true courses to magnetic and/or compass courses
- KT0104 Concepts of monitoring a planned passage including ETA
- KT0105 Basic tidal concepts and theories
- KT0106 Introduction to navigational charts and nautical publications

Internal Assessment Criteria

1. Identify and explain the concepts relating to determining the vessel's position on a chart
2. Define the terms: Deviation and Variation
3. Describe at least five situations requiring use of navigational charts and publications.
4. Explain the broad principles and use of conventional magnetic and gyro compasses
5. List the theory properties and explain the use of the following projections: (comes from Celestial navigation)
 - 5.1 Mercator
 - 5.2 Gnomonic

(Weight 18%)

1.2.2 KM-01-KT02: Coastal Passage Plan Preparation (18%)

Topic elements to be covered include:

- KT0201 Methods to determine a safe port or anchorage approach
- KT0202 Coastal passage plans for clear and restricted visibility
- KT0203 Principles of magnetic compass repeaters
- KT0204 Calculations to determine compass errors
- KT0204 Harbour entry plans via buoyed channels

Internal Assessment Criteria

1. Identify and explain at least five factors one would consider to determine a safe course
2. Describe the principles and use of the flux-gate compass and magnetic compass repeaters
3. Determine compass and/gyro error, using deviation and/or gyro error using transit bearings
4. Explain the coastal plan and entry into harbour

(Weight 18%)

1.2.3 KM-01-KT03: Coastal Passage Plan Monitoring and Execution Principles (18%)

Topic elements to be covered include:

- KT0301 Effects of current and leeway on course to steer
- KT0302 Methods to determine vessels position on a chart
- KT0303 Fundamentals of passage planning and use of clearing lines
- KT0304 Calculations related to time and height of tides at Standard ports

Internal Assessment Criteria

- 1.1 Determine the following:
 - 1.1.1 The effect of current and leeway on course and speed
 - 1.1.2 The course to steer to make good a certain track (making due allowance for current and leeway),
 - 1.1.3 The distance at which a vessel will pass off a given point given the set and rate of a current
2. Describe at least 5 methods to determine the vessel's position on a chart:
3. Explain and use dipping distances of lights and distances of sighting points of land of known height to determine the vessels position
4. Define the following concepts:
 - 4.1 Passage planning and execution
 - 4.2 The use of clearing marks and horizontal and vertical sextant danger angles
5. Calculate the time and height of height and low water at Standards Ports using Admiralty Tide Tables Vol. 2

(Weight 18%)

1.2.4 KM-01-KT04: Advanced Coastal Navigation Methods, NQF level 5, 4 credits (Learning contract time 5 days) (25%)

Topic elements to be covered include:

- KT0401 Advanced coastal navigation chart plotting techniques
- KT0402 Principles of operation of magnetic and gyro compasses
- KT0403 Procedures related to building and maintaining bridge teamwork

Internal Assessment Criteria

1. Compute and define the following calculations:
 - 1.1 The time the tide reaches a specified height or the height of a tide at a given time using tables and tidal curves
 - 1.2 The approximate correction to be applied to soundings or to chartered heights of shore objects
2. Describe the relationship between tides and the phases of the moon
3. Determine the vessel's position on a chart using:

- 3.1 Bearings of one or more objects with the run between allowing for a current
- 3.2 Position lines obtained by any method, including terrestrial position lines and circles of position
- 4. Define and explain:
 - 4.1 The earth's magnetic field, poles, equator, angle of dip and variation.
 - 4.2 Deviation, its cause and effect
- 5 Explain:
 - 5.1 The principle of the free gyroscope
 - 5.2 Correction for latitude, course and speed error
 - 5.3 Care and maintenance of different types of compasses
- 6 Determine the compass error, deviation and/or gyro error using transit bearings
- 7 Discuss effective bridge team work procedures

(Weight 25%)

1.2.5 KM-01-KT05: Principles related to Monitoring and Execution of Coastal Passage Plan, NQF level 6, 5 credits (Learning contract time 6 days) (31%)

Topic elements to be covered include:

- KT0501 Principles related to a coastal passage plan for all conditions (ECDIS)
- KT0502 Advanced principles of magnetic and gyro compasses
- KT0503 Bridge resource, human element, leadership and teamwork principles and procedures
- KT0504 Reporting of errors

Internal Assessment Criteria

- 1. Define acceptable methods of planning a voyage and navigation for all conditions taking into account:
 - 1.1 Restricted waters
 - 1.2 Meteorological conditions
 - 1.3 Ice
 - 1.4 Restricted visibility
 - 1.5 Traffic separation schemes
 - 1.6 Areas of extensive tidal effects
- 2. Discuss the use of ECDIS at operational level
- 3. Deliberate the following theory:
 - 3.1 The earth's magnetic field, poles and equator. The earth's total magnetic force, angle of dip, horizontal and vertical components
 - 3.2 The effect of semi-permanent and induced magnetic fields on the deviation of the compass
 - 3.3 The means used to compensate for these effects
 - 3.4 Constructing a table of deviation following the swinging of a magnetic compass
- 4. Define the terms:
 - 4.1 The fundamental of the free gyroscope
 - 4.2 Tilt and drift
 - 4.3 Precession, control and damping
 - 4.4 Correction for latitude, course and speed error
 - 4.5 Magnetic compass
- 5. Principles of vessel routing in accordance with General Principles on Vessel's Routing
- 6. Define the following terms:

- 6.1 Collision avoidance
 - 6.2 Knowledge and application of the use of routing charts in passage planning
 - 6.3 Traffic separation schemes
7. Explain the limitation of navigational aids (chart work, GPS, Plotters)
(Weight 31%)

1.3 Provider Accreditation Requirements for the Subject

Physical Requirements:

- Classroom furniture (chairs and tables, audio & visual equipment and all other equipment conducive to a learning environment)
- Handouts and stationery (electronic consumables, pencils/paper)
- Learning material
- Type approved simulation, where necessary

Human Resource Requirements:

- Facilitator/learner ratio 1 to 20
- Relevant qualifications/experience
- Achieved accreditation for both facilitators and courseware from SAMSA

Legal Requirements:

- Accredited with the South African Maritime Safety Authority
- Accredited as per QCTO requirements

1.4 Critical Topics to be Assessed Externally for the Knowledge Module

- None

1.5 Exemptions

- None

**2. 315202000-KM-02, Electronic Navigation Systems, NQF Level 6, Credits 14
(Learning contract time 17 days)**

2.1 Purpose of the Knowledge Modules

The main focus of the learning in this knowledge subject is to equip qualifying learners with knowledge to utilise electronic navigation systems to enhance safe navigation.

The learning will enable learners to demonstrate an understanding of:

KM-02-KT01: Basic Principles of Electronic Navigation (29%)

KM-02-KT02: Operational Procedures for Electronic Navigational Systems (29%)

2.2 Guidelines for Topics

2.2.1 KM-02-KT01: Basic Principles of Electronic Navigation (29%)

Topic elements to be covered include:

KT0101	Basic procedures of electronic navigation equipment
KT0102	Limitations and accuracy of electronic navigation equipment
KT0103	Radar plotting techniques
KT0104	Basic principles of electromagnetic propagation
KT0105	Basic principles and operational guidelines for radar and ARPA
KT0106	Basic values of identification systems, tracking systems and data recorders
KT0107	Concepts of logs and echo sounders

Internal Assessment Criteria

1. List the operation of electronic navigation equipment
2. Discuss the broad principles and limitations of electronic navigation equipment, the possible accuracy and errors affecting the accuracy of such systems.
3. Explain shipboard care and maintenance (if any) of electronic navigation equipment
4. Interpret and analyse information obtained from radar, including the following:
 - 4.1 Factors affecting performance and accuracy
 - 4.2 Setting up and maintaining displays
 - 4.3 Detection and misrepresentation of information, false echoes, sea return, racons and SARTs, etc
5. Explain the basic principles of electromagnetic propagation and why most navigational aids use electromagnetic energy
6. Describe frequency, wavelength and Doppler Effect
7. Name the basic principles of automatic identification systems, voyage data recorders and long range identification and tracking systems
8. Describe the basic purpose of the above systems and can program AIS with appropriate data.
9. Understands the limitations of each system and the reasons for their introduction.
10. Explain the purpose of the Admiralty List of Radio Signals, Volume II
11. Explain the basic principles of ship-borne echo sounders with specific reference to types in use at sea; and the accuracy to be expected
12. Describe the principle components of general purpose navigational echo sounding equipment; and the precautions to be observed when in use
13. Explain the basic principles of radar:
 - 13.1 Identify controls

- 13.2 Understand factors affecting performance and accuracy. Relative and true motion concepts
- 14. Define the basic principles of satellite navigation systems
- 15. Explain the principles and construction of a radar plot by using the following:
 - 15.1 Use of a plotting aids
 - 15.2 Use of a plot to obtain information about targets
 - 15.3 Assessment of collision risk
 - 15.4 Effect of alteration of courses and speed in relation to collision avoidance
 - 15.5 Radar reporting procedures
 - 15.6 Application of International Regulations for the Prevention of Collisions at Sea in restricted visibility

(Weight 29%)

2.2.2 KM-02-KT02: Operational Procedures for Electronic Navigational Systems (29%)

Topic elements to be covered include:

- KT0201 Fundamentals of hyperbolic navigation systems
- KT0202 Principles of magnetic and gyro compass
- KT0203 Navigation aids and instruments at operational level
- KT0204 Radar plotting aids and ECDIS procedures

Internal Assessment Criteria

1. Describe the basic principles of hyperbolic navigation with reference to:
 - 1.1. The difference between systems which utilise the measurement of time difference and of phase difference
2. Explain the siting of the magnetic compass with reference to proximity of magnetic material and electrical appliances and the precautions to be taken with electric wiring in the vicinity of the compass
3. Discuss the following statements:
 - 3.1 The earth's magnetic field, poles, equator, angle of dip and variation
 - 3.2 Deviation, its cause and effect
 - 3.3 The principle of the free gyroscope
 - 3.4 Correction for latitude, course and speed error
 - 3.5 The maintenance of different types of compasses
4. Explain the essential principles, use and operation of aids to navigation and navigation instruments which are installed in a high proportion of merchant vessels
5. Identify the effects of systematic and random errors in position fixing by any means
6. Define the principle and operation of EPIRB's in the maritime Global Maritime Distress and Safety System (GMDSS)
7. Discuss the theory of satellite orbits, types of orbits and satellites in maritime use and integrated navigation displays
8. Explain the following:
 - 8.1 The basic principles, operation and use of ECDIS
 - 8.2 The relationship of ECDIS and a high accuracy radio navigation system.
 - 8.3 The use of radar picture and chart overlays
 - 8.4 The principles of operation of ARPA equipment

(Weight 29%)

2.3 Provider Accreditation Requirements for the Knowledge Module

Physical Requirements:

- Classroom furniture (chairs and tables, audio & visual equipment and all other equipment conducive to a learning environment)
- Handouts and stationery (electronic consumables, pencils/paper)
- Learning material
- Type approved simulation, where necessary

Human Resource Requirements:

- Facilitator/learner ratio 1 to 20
- Relevant qualifications/experience
- Achieved accreditation for both facilitators and courseware from SAMSA

Legal Requirements:

- Accredited with the South African Maritime Safety Authority
- Accredited as per QCTO requirements

2.4 Critical Topics to be Assessed Externally for the Knowledge Module

- None

2.5 Exemptions

- None

3. 315101000-KM-03, Naval Architecture (Fishing), NQF Level 5, Learning Contract Time 6 months (Credits: 4)

3.1 Purpose of the Knowledge Modules

The main focus of the learning in this knowledge subject is to equip qualifying learners with knowledge of vessel design, construction and operational stability.

The learning will enable learners to demonstrate an understanding of:

- KM-03-KT01: Theory of Small Vessel Construction and Stability (25%)
- KM-03-KT02: Basic Vessel Construction (25%)
- KM-03-KT03: Vessel Stability (25%)
- KM-03-KT04: Vessel Design, Construction and Fittings (25%)

3.2 Guidelines for Topics

3.2.1 KM-03-KT01: Theory of Small Vessel Construction and Stability (25%)

Topic elements to be covered include:

- KT0101 Components / parts and fittings
- KT0102 Watertight integrity and hull inspection procedures
- KT0103 Basic principles of vessel stability

Internal Assessment Criteria

1. Discuss the purpose of a vessel stability assessment
2. Explain the following:
 - 2.1 Reasons for making the deck and superstructure watertight
 - 2.2 Purpose of watertight bulkheads and the collision bulkhead
 - 2.3 Reason for a hull survey, the items surveyed at the hull survey and the period between surveys for the issue of a local general safety certificate
 - 2.4 Drawing the propeller shaft(s) and the opening of hull fittings and the period between the inspect of these items
 - 2.5 Relationship between centre of gravity, centre of buoyancy and metacentric height;
 - 2.6 Conditions of:
 - 2.6.1 Stiff ship
 - 2.6.2 Tender ship
 - 2.6.3 Free surface effect and the dangers associated with them
 - 2.7 Reasons for having efficient means of drawing water rapidly from the deck and the danger of water trapped on deck
 - 2.8 Reasons for stowing heavy cargo items below and lighter items on top
 - 2.9 Purpose of free board and reserve buoyancy
 - 2.10 Meaning of the terms displacement, deadweight and gross tonnage
3. Compile a document required by the surveyor to assess the stability of the vessel
(Weight: 25%)

3.2.2 KM-03-KT02: Basic Vessel Construction (25%)

Topic elements to be covered include:

- KT0201 Definitions and characteristics of fishing vessels
- KT0202 Procedures for bilge and fire pumping systems
- KT0203 Fundamentals of drainage and water-tight integrity

Internal Assessment Criteria

1. List the names and principal parts of a fishing vessel
2. Explain the general arrangement of common vessel types found in the fishing fleet
 - 2.1 Bottom and mid-water trawlers, purse-seiners, poling, bottom and surface long-liners, gill nets and line fish, crayfish and squid vessels
 - 2.2 Fishing vessel
3. Draw the following
 - 3.1 A bilge pumping system
 - 3.2 A fire main
 - 3.3 A steering system
4. Record the need to maintain the watertight integrity of the vessel and can describe the methods of maintaining the following:
 - 4.1 Hatch covers
 - 4.2 Watertight doors
 - 4.3 Sounding pipes and vents
 - 4.4 Offal chutes
 - 4.5 Scuppers and freeing ports

(Weight 25%)

3.2.3 KM-03-KT03: Basic Vessel Stability (25%)

Topic elements to be covered include:

- | | |
|--------|-----------------------------------------------------------------------|
| KT0301 | Theory of floatation, displacement and tonnage |
| KT0302 | Concepts related to buoyancy and freeboard |
| KT0303 | Basic principles of stability including predetermined load conditions |
| KT0304 | Definitions and characteristics of position of centre of gravity |

Internal Assessment Criteria

1. Discuss the stability theory and the purpose of an Intact stability book
2. Describe principal design features of small vessels related to stability and watertight integrity

(Weight 25%)

3.2.4 KM-03-KT04: Vessel Design, Construction and Fittings (25%)

Topic elements to be covered include:

- | | |
|--------|------------------------------------------------------------|
| KT0401 | Advanced theory of vessel design and construction |
| KT0402 | Fundamentals of watertight integrity of deck openings |
| KT0403 | Mooring and anchoring procedures |
| KT0404 | Components of bilge, ballast and fire main pumping systems |
| KT0405 | Construction of rudders |
| KT0406 | Inclusion of partitions |

Internal Assessment Criteria

1. Discuss the principal design features of a fishing vessel
2. Discuss the process of constructing fishing vessels in relation to its design and fittings
3. Explain the importance of developing and maintaining effective planning documentation
4. Discuss how time to complete the tasks is estimated, measured and calculated
5. Explain the importance of planning for future maintenance and repair

6. Describe the use of partitions and the importance of inspections and the uncontrolled movement of fish

(Weight 25%)

3.3 Provider Accreditation Requirements for the Knowledge Module

Physical Requirements:

- Classroom furniture (chairs and tables, audio & visual equipment and all other equipment conducive to a learning environment)
- Handouts and stationery (electronic consumables, pencils/paper)
- Learning material
- Type approved simulation, where necessary

Human Resource Requirements:

- Facilitator/learner ratio 1 to 20
- Relevant qualifications/experience
- Achieved accreditation for both facilitators and courseware from SAMSA

Legal Requirements:

- Accredited with the South African Maritime Safety Authority
- Accredited as per QCTO requirements

3.4 Critical Topics to be Assessed Externally for the Knowledge Subject

- None

3.5 Exemptions

- None

4. 315202000-KM-04, Ship Power Plants (1), NQF Level 4, Credits 10 (Learning contract time 10 days)

4.1 Purpose of the Knowledge Module

The main focus of the learning in this knowledge subject is to equip qualifying learners with basic knowledge and understanding of ship power plants.

The learning will enable learners to demonstrating an understanding of:

KM-04-KT01: Concepts of the Design and Operation of Marine Power Plants (33%)

KM-04-KT02: Concepts of the Design and Operation of Auxillary Plant Machinery and Systems (67%)

4.2 Guidelines for Topics

4.2.1 KM-04-KT01: Concepts of the Design and Operation of Marine Power Plants (33%)

Topic elements to be covered include:

KT0401 Marine engineering theory

KT0402 Definitions and characteristics of diesel engines

KT0403 Propellers and tail shafts principles

KT0404 Components of oily-water separators and oil filtering equipment

Internal Assessment Criteria

Marine engineering terms:

1. List the correct engineering terms when describing and explaining the operation of the machinery and equipment
2. Discuss the construction and operation of the following:
 - 2.1 Marine power plants
 - 2.2 Diesel engines
3. Describe the 2-stroke diesel cycle
4. Define the 4-stroke diesel engine
5. List the methods of supercharging
6. Describe the fuel oil system from bunker tank to injection
7. Discuss the lube oil system
8. Define the engine cooling-water systems
9. Explain the need for gearing with medium-speed diesels
10. List the arrangement of clutch and gears
11. Define how a diesel engine is prepared for stand-by
12. List the method of starting and reversing a diesel engine
13. Discuss in your own words the number of starts is limited by the capacity of the starting air reservoir
14. Identify the setting up, starting and stopping of a small diesel engine
15. Discuss the construction and operation of the propeller
16. Explain the arrangement of thrust shaft, intermediate shaft and tail shaft
17. Describe how propeller thrust is transmitted to the hull
18. Identify how the propeller shaft is supported between the thrust and the stern tube
19. Draw and tabulate the oil-lubricated stern-tube bearing
20. List how the propeller is secured to the tail shaft
21. Sketch a propeller labelling the boss; back; cone; rake; face and skew

22. Define the arrangement and operation of a controllable pitch propeller (CPP).
23. Name the precautions to be taken with a CPP before:
 - Starting the main engines
 - Going to sea
 - Entering harbour or enclosed waters
24. State that changing control positions and the use of emergency hand control of pitch and engine revolutions should be exercised with caution

(Weight 33%)

4.2.2 KM-04-KT02: Concepts of the Design and Operation of Auxillary Plant Machinery and Systems (67%)

Topic elements to be covered include:

- | | |
|--------|------------------------------------------------------------------------|
| KT0401 | Definition of fresh-water systems |
| KT0402 | Components of pumps and pumping systems |
| KT0403 | Fundamentals of steering gears |
| KT0404 | Characteristics of generators, alternators and electrical distribution |
| KT0405 | Concepts related to air conditioning and ventilation |
| KT0406 | Types of sewage treatment plants and incinerators |
| KT0407 | Fundamentals of deck machinery |
| KT0408 | Hydraulic systems procedures |
| KT0409 | Concepts relating to oil water separators and filtering equipment |

Internal Assessment Criteria

Auxiliaries

1. Discuss the construction and operation of the distillation and fresh-water systems
2. Explain the operation of a reverse osmosis water treatment system
3. Describe the treatment of fresh water for drinking
4. Define a domestic water system

Pumps and Pumping Systems

1. Classify pumps as displacement, axial-flow or centrifugal
2. Explain the operation of a reciprocating pump
3. Describe a rotary displacement pump and state a typical application
4. Identify a screw pump and state possible uses.
5. Define an axial-flow pump and state possible applications
6. Identify a centrifugal pump and state the typical applications
7. List the need to prime a centrifugal pump
8. Explain the head losses in a pumping system and how they are expressed
9. Describe a typical bilge and ballast system for a dry catch (fish)vessel

Steering Gears

1. Identify a telemotor control system
2. How the change from remote to local control in the engine-room is made
3. Define a ram-type hydraulic steering gear
4. Describe a rotary-vane steering gear
5. Explain how hydraulic power is provided by variable delivery pumps
6. List the requirements for emergency control of the steering gear

Generators, alternators and electrical distribution

1. Define the operation of an alternator
2. List the functions of induction motors
3. Draw a navigation light circuit with indicators and alarms, showing an alternative power supply

4. Name the characteristics of lead-acid batteries and of alkaline batteries
5. Explain the maintenance of batteries
6. List the safety precautions to be observed for battery compartments
7. Outline the starting requirements for emergency generating sets
8. List the services to be supplied from the emergency generator

Air conditioning and ventilation

1. Explain an air-conditioning plant
2. Describe a ventilation system for accommodation

Sewage treatment plants

1. Identify the operation of a chemical sewage treatment plant
2. Describe the operation of a biological sewage treatment plant
3. State the regulations regarding the discharge from sewage plants

Incinerators

1. Describe the functioning of a waste incinerator

Oily-water separators and oil filtering equipment

1. List the construction and operation of oily-water separators
2. Describe the construction and operation of oil filtering equipment
3. Explain why oily-water separators, even if well maintained and correctly operated, may not function properly
4. List the functions of an oil-content meter
5. Define an oil discharge monitoring and control system

Deck machinery

1. State that the design and performance of anchor windlasses is subject to approval by a classification society
2. Identify an anchor windlass
3. Define a catch (fish)winch
4. Sketch and describe a slewing deck crane, its motors and its controls
5. Explain the lubrication of deck machinery
6. Describe a spooling device to distribute the wire evenly on the drum of a mooring winch

Hydraulic Systems

1. State at least 5 characteristics of a hydraulic system

(Weight 67%)

4.3 Provider Accreditation Requirements for the Subject

Physical Requirements:

- Classroom furniture (chairs and tables, audio & visual equipment and all other equipment conducive to a learning environment)
- Handouts and stationery (electronic consumables, pencils/paper)
- Learning material
- Type approved simulation, where necessary

Human Resource Requirements:

- Facilitator/learner ratio 1 to 20
- Relevant qualifications/experience
- Achieved accreditation for both facilitators and courseware from SAMSA

Legal Requirements:

- Accredited with the South African Maritime Safety Authority

- Accredited as per QCTO requirements

4.4 Critical Topics to be Assessed Externally for the Knowledge Module

- None

4.5 Exemptions

- None

5. 315202000-KM-05, Personnel Management and Ships Master Business (Fishing) (1 to 2 and 6), NQF level 4 (Credits: 8) (Learning contract time 10 Days)

5.1 Purpose of the Knowledge Module

The main focus of the learning in this knowledge module is to provide learners with an in-depth understanding of the effective and efficient operation of vessels in the fishing industry.

The learning will enable learners to demonstrating an understanding of:

KM-05-KT01: Introductory Maritime Regulatory Framework (25%)

KM-05-KT02: Intermediate Maritime Regulatory Framework (25%)

KM-05-KT03: Advanced Maritime Regulatory Framework (25%)

KM-05-KT04: Fundamentals of Personnel Management at an operational level (25%)

5.2 Guidelines for Topics

5.2.1 KM-05-KT01: Introductory Maritime Regulatory Framework (25%)

Topic elements to be covered include:

KT0101 Proactive precautions preventing marine environment pollution

KT0102 Safe working practices

KT0103 Policies and procedures related to effective human relationship on board

Internal Assessment Criteria

1. Explain:
 - 1.1 What to do in an emergency involving an oil spill on deck or in the engine-room
 - 1.2 The necessity of being aware at all times of preventing oils spills
 - 1.3 That it is prohibited to throw plastics overboard anywhere in the world
 - 1.4 That there are special areas (for the trade in which his/her vessel is engaged) where certain pollutants may or may not be discharged overboard
2. List and understand the importance of maritime legislative and regulatory requirements regarding occupational health and safety for fishermen
3. Discuss the role of the safety officer on board the vessel
4. List and describe the safety and protective devices available to protect against possible hazards aboard a vessel including - overalls, safety helmets, goggles, safety footwear and safety harnesses
5. Describe the precautions to take before entering enclosed spaces including - the permit to work system, duties of standby man and a safe to work certificate
6. Describe your own understanding of:
 - 6.1 Importance of maintaining good human and working relationships on board vessel
 - 6.2 Employment conditions, working hours and rest periods
 - 6.3 Individual rights and obligations in terms of the disciplinary code and grievance procedures
 - 6.4 Dangers of drug and alcohol abuse in terms of their effects to health and safety of others
 - 6.5 Drug and alcohol policies as applied by shipping companies
 - 6.6 Basic conditions and terms of his or her contact of employment

(Weight 25%)

5.2.2 KM-05-KT02: Intermediate Maritime Regulatory Framework (25%)

Topic elements to be covered include:

KT0201	Pollution emergency procedures
KT0202	Garbage and waste disposal management
KT0203	Application of safe working practices
KT0204	Personnel operations on board vessels
KT0205	Training and development on board vessels

Internal Assessment Criteria

1. Describe:
 - 1.1 The ship board contingency plan for an oil spill
 - 1.2 Where the emergency oil spill locker is
 - 1.3 The equipment that will be found therein and what each item is for
2. Know the zones regarding the disposal of garbage and other waste at sea
3. Describe the importance of:
 - 3.1 The Maritime Occupational Health and Safety Regulations and associated Code of Safe Working Practices for Fishermen
 - 3.2 Effective liaison with the vessel's safety officer
 - 3.3 The duty of the master and ship's officers to ensure that all work on board is performed to a high standard of occupational safety
4. List the principles of controlling subordinates and maintaining good relationships
5. Identify and discuss the procedures related to hearings of personnel
6. Describe how to organise staff and to allocate duties and tasks
7. Discuss the importance of familiarisation and ongoing training at sea

(Weight 12.5%)

5.2.3 KM-05-KT03: Advanced maritime regulatory framework (25%)

Topic elements to be covered include:

KT0301	Shipping Environment
KT0302	Oil pollution and prevention structure
KT0303	Maritime occupational safety regulation application

Internal Assessment Criteria

1. Discuss the basic legal implications of rules, regulations and codes emanating from such organisations as IMO, ILO, classification societies and government agencies
2. Provide a brief description of emergency pollution action and duties
3. Draw a diagram to show full knowledge of the equipment in the emergency oil spill locker and how each item is used
4. List the action steps if called upon to rapidly organise an emergency team to tackle an oil spill / pollution hazard
5. Discuss the contents of the MARPOL Convention and its relevance to your work environment

(Weight 25%)

5.2.4 KM-05-KT04: Fundamentals of Personnel Management at an operational level (25%)

Topic elements to be covered include:

KT0401 Components personnel management

KT0402 On board training and development

Internal Assessment Criteria

1. Discuss your understanding of the:
 - 1.1 Manning requirements on board vessel
 - 1.2 Contracts of employment between company/manning agency and crew;
 - 1.3 Crews rights and responsibilities
 - 1.4 Principles of general industrial relations.
 - 1.5 Effects of labour legislation on the vessel's crews
2. Define:
 - 2.1 Training methods
 - 2.2 Training planning
 - 2.3 Why training and assessment on board must be conducted, monitored, evaluated and supported by suitably trained persons
 - 2.4 The relevance of the STCW-F conventions to training

(Weight 25%)

5.3 Provider Accreditation Requirements for the Knowledge Module

Physical Requirements:

- Classroom furniture (chairs and tables, audio & visual equipment and all other equipment conducive to a learning environment)
- Handouts and stationery (electronic consumables, pencils/paper)
- Learning material
- Type approved simulation, where necessary

Human Resource Requirements:

- Facilitator/learner ratio 1 to 20
- Relevant qualifications/experience
- Achieved accreditation for both facilitators and courseware from SAMSA

Legal Requirements:

- Accredited with the South African Maritime Safety Authority
- Accredited as per QCTO requirements

5.4 Critical Topics to be Assessed Externally for the Knowledge Module

- None

5.5 Exemptions

- None

**6. 315202000-KM-06, Marine Environmental Studies (1), NQF Level 4, Credits 12
(Learning contract time 16 days)**

6.1 Purpose of the Knowledge Module

The main focus of the learning in this knowledge subject is to equip qualifying learners with knowledge and understanding of marine environmental issues.

The learning will enable learners to demonstrating an understanding of:

KM-06-KT01: Shipboard Meteorological Instruments and Weather Forecasting (100%)

6.2 Guidelines for Topics

**6.2.1 KM-06-KT01: Shipboard Meteorological Instruments and Weather Forecasting
(100%)**

Topic elements to be covered include:

KT0101 Fundamentals of shipboard meteorological instruments

KT0102 Basic theory of weather systems and forecasting

Internal Assessment Criteria

1. Describe the following concepts:
 - 1.1 Basic principles of a mercurial barometer
 - 1.2 Basic principles of an aneroid barometer
 - 1.3 Function of a hygrometer
 - 1.4 Basic principles of wind sensors
2. Record the following:
 - 2.1 Ordinary readings of wind speed
 - 2.2 The atmospheric pressure from an aneroid barometer.
 - 2.3 The temperature from a thermometer (wet and dry bulb)
3. Define wind
4. Describe the:
 - 4.1 Beaufort scale of wind force
 - 4.2 Method of estimating the strength of the wind from the appearance of the sea surface
 - 4.3 Method of estimating the wind direction from the appearance of the sea surface and demonstrates an ability to use the Beaufort scale to estimate the strength of the wind and its direction from the appearance of the sea
 - 4.4 Precipitation, rain, drizzle, hail, snow and sleet
 - 4.5 Fog, mist and haze and states that visibility is reduced by the presence of particles in the atmosphere, near the earth's surface.
 - 4.6 Methods of estimating the visibility at sea by day and by night, and the difficulties involved
5. List and describe the ten basic cloud types
6. Explain:
 - 6.1 The stages in the life cycle of a polar front depression in the southern hemisphere and the usual movement of the front
 - 6.2 With the aid of a diagram, the weather experienced during the passage of a cold front in the southern hemisphere
 - 6.3 A family of depressions
7. Define the following concepts:
 - 7.1 Currents and seasonal weather patterns on the South African coast

- 7.2 The formation and occurrence of abnormal waves on the eastern seaboard of South Africa
- 7.3 The local winds and their causes
- 8. State:
 - 8.1 The sources of weather information available to local shipping
 - 8.2 The appropriate local weather bulletins and their contents
 - 8.3 Services provided for local storm warnings
 - 8.4 The importance of the correct interpretation of synoptic charts

(Weight 100%)

6.3 Provider Accreditation Requirements for the Subject

Physical Requirements:

- Classroom furniture (chairs and tables, audio & visual equipment and all other equipment conducive to a learning environment)
- Handouts and stationery (electronic consumables, pencils/paper)
- Learning material
- Type approved simulation, where necessary

Human Resource Requirements:

- Facilitator/learner ratio 1 to 20
- Relevant qualifications/experience
- Achieved accreditation for both facilitators and courseware from SAMSA

Legal Requirements:

- Accredited with the South African Maritime Safety Authority
- Accredited as per QCTO requirements

6.4 Critical Topics to be Assessed Externally for the Knowledge Module

- None

6.5 Exemptions

- None

7. 315202000-KM-07, Vessel Manoeuvring and Handling, NQF Level 3, Credits 4 (Learning contract time 6 days)

7.1 Purpose of the Knowledge Module

The main focus of the learning in this knowledge subject is to equip qualifying learners with knowledge to manoeuvre and handle a vessel in all conditions at an operational level.

The learning will enable learners to demonstrating an understanding of:

KM-07-KT01: Fundamentals of Vessel Manoeuvring (100%)

7.2 Guidelines for Topics

7.2.1 KM-07-KT01: Fundamentals of Vessel Manoeuvring (100%)

Topic elements to be covered include:

KT0101	Factors affecting vessel handling
KT0102	Procedures for the rescue of persons in distress
KT0103	Vessel interaction effects
KT0104	Fundamentals for anchoring and mooring
KT0105	Fundamentals of berthing and unberthing

Internal Assessment Criteria

1. Explain the following fundamentals:
 - 1.1 The effects of a single and twin propeller(s) on the turning circle of a vessel
 - 1.2 The effects of deadweight, draught, trim, speed and under-keel clearance on turning circles and stopping distances
 - 1.3 The effects of wind and current on vessel handling
 - 1.4 Manoeuvres and procedures for the rescue of persons in distress and man overboard
 - 1.5 Squat, shallow-water, interaction between vessels, bank effect and similar effects
 - 1.6 Proper procedures for anchoring and mooring
 - 1.7 Basic manoeuvres and duties during berthing and unberthing and the use of the various mooring ropes when alongside
 - 1.8 The effects under loaded conditions on the manoeuvrability of the vessel

(Weight 100%)

7.3 Provider Accreditation Requirements for the Subject

Physical Requirements:

- Classroom furniture (chairs and tables, audio & visual equipment and all other equipment conducive to a learning environment)
- Handouts and stationery (electronic consumables, pencils/paper)
- Learning material
- Type approved simulation, where necessary

Human Resource Requirements:

- Facilitator/learner ratio 1 to 20
- Relevant qualifications/experience
- Achieved accreditation for both facilitators and courseware from SAMSA

Legal Requirements:

- Accredited with the South African Maritime Safety Authority
- Accredited as per QCTO requirements

7.4 Critical Topics to be Assessed Externally for the Knowledge Module

- None

7.5 Exemptions

- None

**8. 315202000-KM-08, Fishing Safety (1 and 2), NQF Level 3 (Credits: 2)
(Learning contract time 2 days)**

8.1 Purpose of the Knowledge Module

The main focus of the learning in this knowledge module is to build an understanding of the operational safety requirements for the fishing industry.

The learning will enable learners to demonstrating an understanding of:

KM-08-KT01: Principles of Fishing Safety (50%)

KM-08-KT02: Procedures of Fishing Safety (50%)

8.2 Guidelines for Topics

8.2.1 KM-08-KT01: Principles of Fishing Safety (50%)

Topic elements to be covered include:

KT0101 Vessel and equipment preparation procedures for fishing operations

KT0102 The process of handling fishing gear

KT0103 Stowing procedures for the catch and general safety

Internal Assessment Criteria

1. Discuss the accepted practice for repairing, replacing, maintaining and positioning of the relevant fishing gear
2. Identify irregularities, damage or defects as appropriate to the relevant fishing gear
3. Explain procedure on how to report clearly and in good time, to his/her supervisor/master, any irregularities, damage or defects
4. Discuss why it is important to wear personal protective equipment at all times during fishing operations
5. Describe the processes involved in the maintenance, repair, replacement and positioning of all relevant fishing gear
6. Explain the importance of timeous reporting of any defects, damage or irregularities to supervisor
7. Discuss the safety rules applicable especially with regard to dangers caused by vessel's motion, slippery surfaces, rotating and moving equipment, ropes and wires under tension, suspended loads and fire hazards
8. Explain why irregularities are likely to occur and the action to take to protect life and property
9. List the safety rules to be followed and due diligence to be given to hazardous situations
10. Provide details on the importance of the current safety rules to the catch
11. Explain why proper catch and fishing gear stowage is important for vessel/crew safety
12. Discuss the operation of vessel's valves and offal chutes and able to seal spaces from water ingress
13. Describe routine precautions and housekeeping measures to prevent damage to offal chutes, ship's valves, pumps and closing devices to ensure watertight integrity is maintained
14. Clarify the operation of bilge/factory decks pumps for removal of water from areas
15. Explain how loading/discharging operations can affect the stability of the vessel especially with regard to heeling moments from placement of gear and catch

16. Discuss different fishing vessels, their fishing methods and the associated dangers to the vessel

(Weight 50%)

8.2.2 KM-08-KT02: Processes and Procedures of Fishing Safety (50%)

Topic elements to be covered include:

- KT0201 Fish Gear Handling Process
- KT0202 Catch Stowage Process

Internal Assessment Criteria

1. Discuss the importance that sufficient and fit personnel are available to ensure safe and efficient fishing operations
2. Explain the importance that equipment checks must be made prior to the beginning of fishing operations and to ensure that operations are carried out in accordance with safety rules
3. Clarify that reports of any irregularities, damage or defects are evaluated and rectified
4. Describe that instructions are to be given to ratings involved in stowing of catch (when appropriate) to ensure that the operation is carried on in time and according to safety rules
5. Name and discuss the construction, application and purpose of deck equipment that includes, but is not limited to, trawl gallows, gantries, power blocks, pursing blocks, winches and booms, derricks, net drums and side rollers and line and trap haulers.
6. Identify the dangers associated with fishing operations such as shooting all types of fishing gear into the water, hauling fishing gear and landing the catch on board.

(Weight 50%)

8.3 Provider Accreditation Requirements for the Subject

Physical Requirements:

- Classroom furniture (chairs and tables, audio & visual equipment and all other equipment conducive to a learning environment)
- Handouts and stationery (electronic consumables, pencils/paper)
- Learning material
- Type approved simulation, where necessary

Human Resource Requirements:

- Facilitator/learner ratio 1 to 20
- Relevant qualifications/experience
- Achieved accreditation for both facilitators and courseware from SAMSA

Legal Requirements:

- Accredited with the South African Maritime Safety Authority
- Accredited as per QCTO requirements

8.4 Critical Topics to be Assessed Externally for the Knowledge Module

- None

8.5 Exemptions

- None

**9. 315202000-KM-09, Emergency Procedures (1 to 2), NQF level 4 (Credits: 2)
(Learning contract time 2 Days)**

9.1 Purpose of the Knowledge Module

The main focus of the learning in this knowledge module is to build an understanding of the various emergencies which may occur.

The learning will enable learners to demonstrating an understanding of:

- KM-09-KT01: Theories and Processes relating to Emergencies and Distress Signals at Sea, and Emergencies in Port (50%)
- KM-09-KT02: Concepts relating to Emergencies at Sea and in Port (25%)
- KM-09-KT03: Search and Rescue Operations (25%)

9.2 Guidelines for Topics

9.2.1 KM-09-KT01: Theories and Processes relating to Emergencies and Distress Signals at Sea, and Emergencies in Port (50%)

Topic elements to be covered include:

- KT0101 Emergency measures in protecting vessel and crew
- KT0102 Preliminary actions following a collision or grounding
- KT0103 Initial damage assessment and control
- KT0104 Basics of emergency steering and rigging a jury rudder

Internal Assessment Criteria

1. Explain at least three measures in emergencies for the protection and safety of vessel, passengers and crew in that the candidate must be able to
2. Discuss in your own words actions to be taken in the event of collision or grounding
3. Describe the rigging and use of jury steering arrangements
4. Discuss the area of operation and procedures of the SASAR organization

(Weight 50%)

9.2.2 KM-09-KT02: Emergencies at Sea and in Port (25%)

Topic elements to be covered include:

- KT0201 Precautions when instructed to beach a vessel
- KT0202 Grounding and re-floating of vessel
- KT0203 Actions following a collision or hull damage
- KT0204 Steering and towing procedures at an operational level
- KT0205 Assessment of damage control

Internal Assessment Criteria

1. Provide a description of actions required to execute the following:
 - 1.1 Precautions when beaching a vessel
 - 1.2 Action to be taken if grounding imminent, or after grounding
 - 1.3 Re-floating a grounded vessel with and without assistance; and
 - 1.4 Action to be taken if collision is imminent and following a collision or impairment of the watertight integrity of the hull by any cause
2. Describe the principles:
 - 2.1 Emergency steering
 - 2.2 The assessment of damage control

(Weight 25%)

9.2.3 KM-09-KT03: Procedures and techniques in search and rescue operations (25%)

Topic elements to be covered include:

KT0301	Theory of IAMSAR
KT0302	Procedure for search and rescue
KT0303	Interception course, rendezvous position and ETA
KT0304	Search and rescue theory

Internal Assessment Criteria

1. Discuss your understanding of the contents of the IAMSAR Manual (Vol 3)
2. Describe the importance to determine datum, datum area, CSP (commence search point) and appropriate search and rescue pattern
3. Identify the relevance of an interception course, rendezvous position and ETA between two vessels underway
4. Provide a brief description of search and rescue procedures, patterns and plotting

(Weight 25%)

9.3 Provider Accreditation Requirements for the Subject

Physical Requirements:

- Classroom furniture (chairs and tables, audio & visual equipment and all other equipment conducive to a learning environment)
- Handouts and stationery (electronic consumables, pencils/paper)
- Learning material
- Type approved simulation, where necessary

Human Resource Requirements:

- Facilitator/learner ratio 1 to 20
- Relevant qualifications/experience
- Achieved accreditation for both facilitators and courseware from SAMSA

Legal Requirements:

- Accredited with the South African Maritime Safety Authority
- Accredited as per QCTO requirements

9.4 Critical Topics to be Assessed Externally for the Knowledge Module

- None

9.5 Exemptions

- None

**10. 315202000-KM-10, Maritime Communications, NQF Level 5, Learning Contract
Time 10 days (Credits: 7)**

10.1 Purpose of the Knowledge Module

The main focus of the learning in this knowledge subject is to equip qualifying learners with knowledge on effective communications in relation to deck and bridge operations and management.

The learning will enable learners to demonstrating an understanding of:

- KM-10-KT01: Signal Transmission, Reception and Interpretation (25%)
- KM-10-KT02: IMO Standard Marine Communication (25%)
- KM-10-KT03: Publications and Notices (25%)
- KM-10-KT04: Distress, Urgency and Safety Communications (25%)

10.2 Guidelines for Topics

10.2.1 KM-10-KT01: Signal Transmission, Reception and Interpretation (25%)

Topic elements to be covered include:

- KT0101 Transmit and receive signals
- KT0102 International Code of Signals

Internal Assessment Criteria

1. Describe the use of the International Code of signals
2. Discuss importance of transmitting and receiving Morse code at 15 characters per minute
3. Outline the relevance of understanding, maintaining, and using Aldis lamp
4. Identify and interpret the International Code of Signals, flags and principal national flags
5. Explain the meaning of flag hoists
6. Discuss how to overcome language and cultural barriers using effective communication methods

(Weight 33%)

10.2.2 KM-10-KT02: IMO Standard Marine Communication (33%)

Topic elements to be covered include:

- KT0201 IMO Standard Marine Communication phrases
- KT0202 Communication with watch on safety related matters
- KT0203 Communication with shore stations

Internal Assessment Criteria

1. Define and interpret the messages in using IMO Standard Marine Communication Phrases with:
 - 1.1 Other ships,
 - 1.2 Coast Stations
2. Discuss the purpose of the accurate completion of log books in the English language
3. Explain the importance of the use of the phonetic alphabet in the maritime environment

4. Outline your understanding of the importance of loop communication in the safe operation of the vessel
5. Explain the importance of messages being short, concise and clear
6. Describe the purpose of IMO ships routing and separation schemes
7. Discuss the purpose of vessel traffic services and where to find reporting requirements
8. Explain the relevance of the working language of the vessel in relation to formal external communications in English

(Weight 33%)

10.2.3 KM-10-KT03: Publications and Notices

Topic elements to be covered include:

- KT0301 English nautical publications
 KT0302 Standard English nautical notices, reports and forms

Internal Assessment Criteria

1. Receive English language publications, regulations and messages relevant to the safety of the vessel, including, but not limited to:
 - 1.1 Notices to mariners
 - 1.2 Sailing directions and pilot books
 - 1.3 List of lights and fog signals
 - 1.4 Tide tables, tidal stream and current atlases
 - 1.5 Meteorological and marine safety messages
 - 1.6 Ship's routing information
 - 1.7 Nautical publications
 - 1.8 Marine notices
2. Find contextual information pertaining to broadcasting times and any other information relating to the safe navigation of the vessel publications, regulations and messages
3. Interpret and communicate information to relevant chains of command, using the relevant publications, regulations and messages

10.2.3 KM-10-KT04: Distress, Urgency and Safety Communications (25%)

Topic elements to be covered include:

- KT0301 Receipt and transmission of different distress, urgency and safety communications
 KT0302 Receipt and transmission of different MSI signals

Internal Assessment Criteria

1. Explain the difference between distress, urgency and safety messages
2. Define RT Communications and DSC Alerts
3. Define and discuss the receipt and interpretation of the following maritime safety information:
 - 3.1 Fleetnet and safety net (EGC)
 - 3.2 Navtex
 - 3.3 VHF / MF / HF
 - 3.4 Local and coastal warnings
 - 3.5 Search and rescue and distress messages

4. List the different types of MSI signals, their means of transmission, Navareas, Metareas, and the responsibility to generate navigational warnings

(Weight 33%)

10.3 Provider Accreditation Requirements for the Subject

Physical Requirements:

- Classroom furniture (chairs and tables, audio & visual equipment and all other equipment conducive to a learning environment)
- Handouts and stationery (electronic consumables, pencils/paper)
- Learning material
- Type approved simulation, where necessary

Human Resource Requirements:

- Facilitator/learner ratio 1 to 20
- Relevant qualifications/experience
- Achieved accreditation for both facilitators and courseware from SAMSA

Legal Requirements:

- Accredited with the South African Maritime Safety Authority
- Accredited as per QCTO requirements

10.4 Critical Topics to be Assessed Externally for the Knowledge Module

- None

10.5 Exemptions

- None

11. 315202000-KM-11, Advanced Firefighting, NQF Level 5 (Credits: 2) (Learning contract time 3 Days)

11.1 Purpose of the Knowledge Module

The main focus of the learning in this knowledge subject is to equip qualifying learners with knowledge to manage fire prevention and firefighting

The learning will enable learners to demonstrating an understanding of:

KM-11-KT01: Theories and Processes relating to Firefighting Operations On Board (66.7%)

KM-11-KT02: Advanced Firefighting Principles (33.3%)

11.2 Guidelines for Topics

11.2.1 KM-11-KT01: Theories and Processes relating to Firefighting Operations On Board (66.7%)

Topic elements to be covered include:

KT1101	Firefighting procedures at sea and in port
KT1102	Use of water for fire-extinguishing
KT1103	Communication and co-ordination during firefighting
KT1104	Ventilation control procedures
KT1105	Fuel and electrical systems control

Internal Assessment Criteria

1. Explain fire-fighting procedures at sea and in port with particular emphases on organisation, tactics and command at sea and at port
2. Describe fire-fighting process hazards (dry distillation, chemical reactions, boiler uptake fires, etc.)
3. Explain dry distillation using the following :-
 - 3.1 The process of burning in an enclosed space with insufficient oxygen for complete combustion
 - 3.2 The hazard of a flash towards the source of oxygen for complete combustion
 - 3.3 The hazard of a flash towards the source of oxygen if enclosed space is opened
 - 3.4 Precautions to take before entering an enclosed space in which a fire is burning, such as:-
 - 3.4.1 Boundary cooling
 - 3.4.2 Entering space in crouched position behind a water screen
 - 3.4.3 Directing water at ceiling of the space
4. Identify chemical reactions using the following:-
 - 4.1 Action of heat, water, oil, steam, carbon dioxide, foam, sand individually or in connection with each other on various chemicals
 - 4.2 Reactions of some cargoes with fire-fighting agents such as:-
 - 4.2.1 Production of acetylene when water is added to calcium carbide
 - 4.2.2 Action of steam on a coal fire
 - 4.2.3 Production of hydrogen from contact of Direct
 - 4.2.4 Induced Iron with water
 - 4.3 Oxidizing cargoes which may sustain a fire even when fire is smothered by extinguishing gas

- 4.4 Spontaneous combustion of certain cargoes when exposed to air or when wet
- 4.5 Production of methane from coal cargoes

Firefighting involving dangerous goods

1. List fire precautions and hazards associated with the storage and handling of materials
2. State the fire precautions and hazards associated with storage and handling of flammable ship's stores including matters such as :-
 - 2.1 Approved storage areas
 - 2.2 Approved handling methods
 - 2.3 Prohibited storage areas (paints, etc.)

Management and control of injured persons

1. Explain the procedures for coordination with shore based fire fighters
2. Explain the use of water for fire-extinguishing, the effect on vessel stability, including amongst others the:
 - 2.1 Precautions and corrective measures necessary
 - 2.2 Calculation the change in GM caused by the weight of extinguishing water and its free surface effect
 - 2.3 Arrangements for pumping or draining of water from affected spaces, including cutting holes in vessel's side
 - 2.4 Deliberate stranding of vessel in shallow water to allow flooding of holds or affected spaces
 - 2.5 Effects of water damage
 - 2.6 Danger to electrical systems
 - 2.7 Reaction with certain cargoes
3. Define the communication and coordination during fire-fighting operations including amongst others:
 - 3.1 The necessity for the Master to coordinates all parties involved in the fire from a central control station (the bridge)
 - 3.2 The use of:-
 - 3.2.1 Hand held radios
 - 3.2.2 Telephones
 - 3.2.3 Talk-back systems
 - 3.2.4 Radio telephone and V.H.F
 - 3.2.5 Cell phone
 - 3.2.6 Loud speaker
 - 3.2.7 Ventilation control
 - 3.2.8 Smoke extraction
 - 3.3 The closing of ventilators and water/gas tight doors to exclude oxygen from fire and to contain CO₂ (if applicable to space)

Ventilation control, including smoke extraction:

1. List the preparations for controlling any renewal of fire caused by opening up the enclosed space
 - 1.1 The control of fuel and electrical systems
 - 1.2 The shutting off or isolation fuel and electrical systems in the vicinity of the fire
 - 1.3 The operation of emergency generators/emergency battery supply and emergency fire pump in event of an engine-room fire
2. Explain the control of fuel and electrical systems

(Weight 66.7%)

11.2.2 KM-11-KT02: Advanced Firefighting Principles (33.3%)

Topic elements to be covered include:

KT01101	Fire parties training
KT01102	Fire detection and fire extinguishing systems
KT01103	Procedure for Investigation report

Internal Assessment Criteria

1. Define the preparation of contingency plans taking into account the:
 - 1.1 Assessment of areas of high risk of fire (e.g. galley, engine-room, paint stores, pump rooms etc)
 - 1.2 Assessment of areas where fire will endanger life i.e. accommodation
 - 1.3 Assessment of areas of danger if on fire or exposed to heat (e.g. dangerous cargoes, fuel tanks, high pressure vessels)
 - 1.4 Availability of portable appliances in these areas to fight fires
 - 1.5 Use of fixed systems for major fires in these areas
 - 1.6 Rescue of victims from the affected area
 - 1.7 Evaluation of when to evacuate personnel from the fire
2. Discuss the composition and allocation of personnel to fire parties
3. Define the strategies and tactics for control of fires in various parts of the vessel
4. Explain the requirements for statutory and classification surveys
5. Identify the assessment of cause of incidents involving fire and compile a report of such an incident reporting on:
 - 5.1 Timetable of the fire from discovery to extinction of fire including fire watch on completion of firefighting operations
 - 5.2 Times of events and actions taken position and nature of the fire
 - 5.3 Initial actions to extinguish fire
 - 5.4 Results of actions and follow up procedures
 - 5.5 Firefighting equipment and personnel involved casualties, number and cause and nature of injuries
 - 5.6 Damage to vessel and to catch (fish) estimating damage caused by firefighting operations
 - 5.7 Extent to which vessel or any vessel's services are affected by the fire and giving
 - 5.7.1 Analysis and discussion of the facts
 - 5.7.2 Conclusions drawn from analysis and discussion
 - 5.7.3 Recommendations on actions to avoid recurrence of incident
 - 5.7.4 Recommendations, if any, to improve fire prevention and firefighting procedures

(Weight 33.3%)

11.3 Provider Accreditation Requirements for the Subject

Physical Requirements:

- Classroom furniture (chairs and tables, audio & visual equipment and all other equipment conducive to a learning environment)
- Handouts and stationery (electronic consumables, pencils/paper)
- Learning material
- Type approved simulation, where necessary

Human Resource Requirements:

- Facilitator/learner ratio 1 to 20

- Relevant qualifications/experience
- Achieved accreditation for both facilitators and courseware from SAMSA

Legal Requirements:

- Accredited with the South African Maritime Safety Authority
- Accredited as per QCTO requirements

11.4 Critical Topics to be Assessed Externally for the Knowledge Module

- None

11.5 Exemptions

- None

12. 315202000-KM-12, Security Awareness, NQF Level 3 (Credits: 1) (Learning contract time 1 day)

12.1 Purpose of the Knowledge Module

The main focus of the learning in this knowledge subject is to equip qualifying learners with knowledge to the maritime security requirements.

The learning will enable learners to demonstrating an understanding of:

KM-13-KT01: Theory of Maritime Security (50%)

KM-13-KT02: Maintain Shipboard Security (50%)

12.2 Guidelines for Topics

12.2.1 KM-12-KT01: Theory of Maritime Security (50%)

Topic elements to be covered include:

KT0101 Maritime security terms and definitions

KT0102 International maritime security regulations and responsibilities

Internal Assessment Criteria

1. Identify maritime security terms and definitions, including elements that may relate to piracy and armed robbery
2. Recognise international maritime security policy and responsibilities of Governments, companies and persons
3. List the maritime security levels and their impact on security measures and procedures aboard vessel and in port facilities
4. Describe of security reporting procedures and security-related contingency plans

(Weight 50%)

12.2.2 KM-12-KT02: Maintain Shipboard Security (50%)

Topic elements to be covered include:

KT0201 Security threats

KT0202 Security awareness and vigilance

Internal Assessment Criteria

1. Recognise techniques used to circumvent security measures.
2. Identify potential security threats, including elements that may relate to piracy and armed robbery, weapons, dangerous substances and devices and awareness of the damage they can cause.
3. Define the handling security-related information and communication
4. Describe training, drill and exercise requirements under relevant conventions, codes and IMO circulars, including those relevant for anti-piracy and armed robbery

(Weight 50%)

12.3 Provider Accreditation Requirements for the Subject

Physical Requirements:

- Classroom furniture (chairs and tables, audio & visual equipment and all other equipment conducive to a learning environment)
- Handouts and stationery (electronic consumables, pencils/paper)
- Learning material

- Type approved simulation, where necessary

Human Resource Requirements:

- Facilitator/learner ratio 1 to 20
- Relevant qualifications/experience
- Achieved accreditation for both facilitators and courseware from SAMSA

Legal Requirements:

- Accredited with the South African Maritime Safety Authority
- Accredited as per QCTO requirements

12.4 Critical Topics to be Assessed Externally for the Knowledge Module

- None

12.5 Exemptions

- None

SECTION 3B: PRACTICAL SKILL MODULE SPECIFICATIONS

List of Practical Skill Module Specifications

- 315202000-PM-01, Navigate at an operational level, NQF Level 3, Learning Contract Time 50h, Credits 5
- 315202000-PM-02, Handle and stow catch (fish) at an operational level, NQF Level 3, Learning Contract Time 40h, Credits 4
- 315202000-PM-03, Assist with shipboard operations and care for persons on board at an operational level, NQF Level 3, Learning Contract Time 50h, Credits 5
- 315202000-PM-04, Handle and manoeuvre a vessel at an operational level, NQF Level 3, Learning Contract Time 40h, Credits 4
- 315202000-PM-05, Maintain lifesaving and vessel's safety equipment at an operational level, NQF Level 3, Learning Contract Time 40h, Credits 4
- 315202000-PM-06; Contribute to security of vessel and crew, NQF Level 3, Learning Contract Time 20h, Credits 2
- 315201000-PM-07, Monitor, lead and develop crew, NQF Level 4, Learning Contract Time 45 days (Credits: 36)

1. 315202000-PM-01, Navigate at an operational level, NQF Level 3, Learning Contract Time 50h, Cr5

1.1 Purpose of the Practical Skill Modules

The focus of the learning in this module is on providing the learner an opportunity to conduct watchkeeping duties and maintain a safe navigational watch

The learner will be required to:

- PM-01-PS01: Prepare a Passage Plan for Management Approval
- PM-01-PS02: Conduct a Safe Navigation Watch in a Simulated Environment
- PM-01-PS03: Manage Bridge Resources including Electronic Navigation Systems in a Simulated Environment
- PM-01-PS04: Apply Human Element Leadership and Teamwork Principles

1.2 Guidelines for Practical Skills

1.2.1. PM-01-PS01: Prepare a Passage Plan for Management Approval

Scope of Practical Skill

Given work instructions, checklists, work area, case study, activity documents, any templates, forms, safety and quality principles and standard operating procedures procedure information available, the learner must be able to:

- PA0101 Select appropriate charts
- PA0102 Use appropriate nautical publications
- PA0103 Plot courses and way points on charts
- PA0104 Document passage plan and present for approval

Applied Knowledge

- AK0101 Reference Chart Catalogues, routing and weather charts
- AK0102 List of chart symbols and abbreviations
- AK0103 Mariners handbook
- AK0104 Local Pilot book
- AK0105 List of lights and radio signals
- AK0106 Tide tables

Internal Assessment Criteria

- IAC0101 Charts of the appropriate scale are selected for the relevant area navigated
- IAC0102 Applicable nautical publications are referenced and relevant information recorded
- IAC0103 Hazards to navigation and no-go areas identified and marked on chart
- IAC0104 Safest route has been selected and plotted
- IAC0105 Passage plan is compiled and submitted for approval

1.2.2. PM-01-PS02: Conduct a Safe Navigation Watch in a Simulated Environment

Scope of Practical Skill

Given work instructions, checklists, work area, case study, activity documents, any templates, forms, safety and quality principles and standard operating procedures procedure information available, the learner must be able to:

- PA0201 Conduct a look-out for navigational hazards in a simulated coastal/fishing environment
- PA0202 Assess risk of collision and describe appropriate action

- PA0203 Monitor vessel's position according to the passage plan demonstrating situational awareness
- PA0204 In a simulated environment, use all available resources including electronic systems to maintain a safe navigation watch
- PA0205 Detect simulated distress situations and describe appropriate actions

Applied Knowledge

- AK0201 Masters standing orders
- AK0202 IMO Bridge procedures guide
- AK0203 List of chart symbols and abbreviations
- AK0204 List of lights and radio signals
- AK0205 IMO Standard maritime navigational vocabulary
- AK0206 International Regulations for the Prevention of collisions at sea
- AK0207 Manufacturer's instructions
- AK0208 IAMSAR Manual
- AK0209 Tide Tables

Internal Assessment Criteria

- IAC0201 Hazards are observed and reported clearly and accurately in a simulated environment
- IAC0202 Vessel manoeuvred to avoid collision and groundings in a simulated environment
- IAC0203 Passage plan is followed
- IAC0204 Safe navigational watch is maintained
- IAC0205 IAMSAR procedures are followed

1.2.3. PM-01-PS03: Manage Bridge Resources including Electronic Navigation Systems in a Simulated Environment

Scope of Practical Skill

Given work instructions, checklists, work area, case study, activity documents, any templates, forms, safety and quality principles and standard operating procedures procedure information available, the learner must be able to:

- PA0301 In a simulated environment, verify equipment and tools are available and functioning
- PA0302 Use all simulated bridge equipment and systems effectively

Applied Knowledge

- AK0301 Manufacturer's instructions
- AK0302 List of lights and radio signals

Internal Assessment Criteria

- IAC0301 Bridge equipment checklist is completed
- IAC0302 Equipment is used in a simulated environment, where necessary

1.2.4. PM-01-PS04: Apply Human Element Leadership & Teamwork principles

Scope of Practical Skill

Given work instructions, checklists, work area, case study, activity documents, any templates, forms, safety and quality principles and standard operating procedures procedure information available, the learner must be able to:

- PA0401 Communicate clearly with relevant personnel

- PA0402 Delegate duties clearly with detailed instructions
PA0403 Identify signs and symptoms of stress and fatigue

Applied Knowledge

- AK0401 Standard maritime terms and vocabulary
AK0402 IMO Bridge procedures guide
AK0403 Shipboard personnel leadership training

Internal Assessment Criteria

- IAC0401 Instructions are clearly understood and executed in a simulated environment
IAC0402 Duties are carried out as instructed in a simulated environment
IAC0403 Rest periods and fitness for duty are adhered to and ensured

1.3 Provider Accreditation Requirements for the Practical Skill Module

Physical Requirements:

- Classroom furniture (chairs and tables, audio and visual equipment and all other equipment conducive to a learning environment)
- Hand-outs and stationery (electronic consumables, pencils/paper)
- Learning material
- Type approved simulation, where necessary

Human Resource Requirements:

- Facilitator/learner ratio 1 to 20
- Relevant qualifications/experience
- Accredited facilitators and assessors

Legal Requirements:

- Accredited with the South African Maritime Safety Authority
- Accredited as per QCTO requirements

1.4 Critical Topics to be Assessed Externally for the Practical Skill Module

- None

1.5 Exemptions

- None

2. 315202000-PM-02, Handle and Stow Catch (Fish) at an Operational Level, NQF Level 3, Learning Contract Time 40h, Cr4

2.1 Purpose of the Practical Skill Modules

The focus of the learning in this module is on providing the learner an opportunity to assist the officer of the watch in the conduct of catch (fish) handling and stowage

The learner will be required to:

- PM-02-PS01: Load, Secure and Discharge Catch (Fish)
- PM-02-PS02: Communicate State of Shipboard and Plant Operations
- PM-02-PS03: Report and Document Catch (Fish)

2.2 Guidelines for Practical Skills

2.2.1. PM-02-PS01: Load, Secure and Discharge Catch (Fish)

Scope of Practical Skill

Given work instructions, checklists, work area, case study, activity documents, any templates, forms, safety and quality principles and standard operating procedures procedure information available, the learner must be able to:

- PA0101 Select freight handling gear and methodology according to type of catch (fish)
- PA0102 Physically describe how the stability of the vessel is assessed under all conditions of loading and discharging of catch (fish)
- PA0103 Explain in your own words how the loading stresses are assessed during various seagoing and port operations
- PA0104 Describe your understanding of how freeboard, list and trim are monitored during loading, discharging and fishing operations

Applied Knowledge

- AK0101 Vessels stability information including Intact Stability Booklet
- AK0102 Code of safe working practices for fishermen
- AK0103 International Safety Management Code
- AK0104 Manufacturer's instructions

Internal Assessment Criteria

- IAC0101 Lifting and hauling equipment is described for different functions
- IAC0102 Stability calculations are accurately conducted
- IAC0103 Loading stresses are accurately calculated
- IAC0104 Freeboard, list and trim are correctly calculated using all information

2.2.2. PM-02-PS02: Communicate State of Shipboard and Plant Operations

Scope of Practical Skill

Given work instructions, checklists, work area, case study, activity documents, any templates, forms, safety and quality principles and standard operating procedures procedure information available, the learner must be able to:

- PA0201 Monitor shipboard and plant operations in a simulated environment
- PA0202 Disseminate relevant information in a simulated environment
- PA0203 Maintain a record of communication in a simulated environment

Applied Knowledge

- AK0201 Code of Safe Working Practices for Fishermen
- AK0202 International Safety Management Code

AK0203 Standard maritime terms and vocabulary

Internal Assessment Criteria

IAC0201 Status of shipboard and plant operations is accurately reported

AC0202 Accurate record of communication is maintained

2.2.3. PM-02-PS03: Report and Document Catch (Fish)

Scope of Practical Skill

Given work instructions, checklists, work area, case study, activity documents, any templates, forms, safety and quality principles and standard operating procedures procedure information available, the learner must be able to:

PA0301 Identify catch (fish)

PA0302 Record and document, catch (fish)

PA0303 Distribute reports to relevant authorities

Applied Knowledge

AK0301 Fish Species Scientific list

AK0302 Sector specific requirements and documents

Internal Assessment Criteria

IAC0301 Catch and / or cargo (fish) identified according to species scientific list

IAC0302 Records and documents are correctly completed and dispatched

IAC0303 Reports are distributed to relevant parties

2.3 Provider Accreditation Requirements for the Practical Skill Module

Physical Requirements:

- Classroom furniture (chairs and tables, audio and visual equipment and all other equipment conducive to a learning environment)
- Hand-outs and stationery (electronic consumables, pencils/paper)
- Learning material
- Type approved simulation, where necessary

Human Resource Requirements:

- Facilitator/learner ratio 1 to 20
- Relevant qualifications/experience
- Accredited facilitators and assessors

Legal Requirements:

- Accredited with the South African Maritime Safety Authority
- Accredited as per QCTO requirements

2.4 Critical Topics to be Assessed Externally for the Practical Skill Module

- None

2.5 Exemptions

- None

3. 315202000-PM-03, Execute Shipboard Operations and Care for Persons On Board at an Operational Level, NQF Level 4, Learning Contract Time 50h, Credits 5

3.1 Purpose of the Practical Skill Modules

The focus of the learning in this module is on providing the learner an opportunity to assist with shipboard operations and the care for people on board

The learner will be required to:

- PM-03-PS01: Describe Personal Protective Equipment for Use while Handling Catch (Fish) On Board
- PM-03-PS02: Describe Procedures for the Safe Operation of Lifting and Hauling Equipment on Deck
- PM-03-PS03: Describe Procedures for the Maintenance of Medical and First Aid Facilities and Equipment

3.2 Guidelines for Practical Skills

3.2.1. PM-03-PS01: Describe Personal Protective Equipment for Use while Handling Catch (Fish) On Board

Scope of Practical Skill

Given work instructions, checklists, work area, case study, activity documents, any templates, forms, safety and quality principles and standard operating procedures procedure information available, the learner must be able to:

- PA0101 Select personal protective equipment appropriate to the situation
- PA0102 Describe the use of a safety harness for heavy weather or when aloft
- PA0103 Describe the hazards associated with the wearing of loose fitting clothing

Applied Knowledge

- AK0101 Code of safe working practice for Merchant Seaman / Fishermen
- AK0102 International Safety Management Code
- AK0103 Maritime Occupational Health and Safety Regulations
- AK0104 Manufacturer's instructions

Internal Assessment Criteria

- IAC0101 Personal protective equipment appropriate to the situation is selected
- IAC0102 The use of a safety harness is described
- IAC0103 The dangers of wearing loose-fitting clothing are described

3.2.2. PM-03-PS02: Describe Procedures for the Safe Operation of Lifting and Hauling Equipment on Deck

Scope of Practical Skill:

Given work instructions, checklists, work area, case study, activity documents, any templates, forms, safety and quality principles and standard operating procedures procedure information available, the learner must be able to:

- PA0201 Identify and minimise potential risks on board vessel
- PA0202 Plan a safe working environment
- PA0203 Demonstrate the hazards associated with lifting equipment
- PA0204 Demonstrate basic operational hand signals for lifting equipment

Applied Knowledge

AK0201	Code of safe working practice for Merchant Seaman / Fishermen
AK0202	International Safety Management Code
AK0203	Maritime Occupational Health and Safety Regulations
AK0204	Manufacturer's instructions
AK0205	Intact Stability Booklet

Internal Assessment Criteria

IAC0201	Risk assessments are conducted for all activities on board
IAC0202	Plan for safe operations is produced
IAC0203	Indicate the hazards associated with lifting equipment
IAC0204	Basic hand signals for safe operation of lifting equipment are demonstrated

3.2.3. PM-03-PS03: Describe Procedures for the Maintenance of Medical and First Aid Facilities and Equipment

Scope of Practical Skill:

Given work instructions, checklists, work area, case study, activity documents, any templates, forms, safety and quality principles and standard operating procedures procedure information available, the learner must be able to:

PA0301	Describe how medical facilities and first aid equipment is maintained at immediate readiness
PA0302	Describe how the contents of the medical locker/ first aid kit is kept compliant
PA0303	Describe the hazards associated with non-compliant medicines and first aid equipment

Applied Knowledge

AK0301	Code of safe working practice for Merchant Seaman / Fishermen
AK0302	International Safety Management Code
AK0303	Maritime Occupational Health and Safety Regulations
AK0304	Ship Captain's medical Guide

Internal Assessment Criteria

IAC0301	Identify components and complete checklist to ensure that medical facilities and the first aid kit is ready for immediate use
IAC0302	Content of the medical locker is compliant
IAC0303	The hazards of out-of-date medicines and equipment are described

3.3 Provider Accreditation Requirements for the Practical Skill Module

Physical Requirements:

- Classroom furniture (chairs and tables, audio and visual equipment and all other equipment conducive to a learning environment)
- Hand-outs and stationery (electronic consumables, pencils/paper)
- Learning material
- Type approved simulation, where necessary

Human Resource Requirements:

- Facilitator/learner ratio 1 to 20
- Relevant qualifications/experience

- Achieved accreditation for both facilitators and courseware from SAMSA

Legal Requirements:

- Accredited with the South African Maritime Safety Authority
- Accredited as per QCTO requirements

3.4 Critical Topics to be Assessed Externally for the Practical Skill Module

- None

3.5 Exemptions

- None

4. 315202000-PM-04, Handle and Manoeuvre Fishing Vessel at an Operational Level, NQF Level 3, Learning Contract Time 40h, Cr4

4.1 Purpose of the Practical Skill Modules

The focus of the learning in this module is on providing the learner an opportunity to contribute to the handling and manoeuvring of a vessel at an operational level

The learner will be required to:

- PM-04-PS01: Issue, Receive and Execute Helm and Engine Control Instructions
- PM-04-PS02: Bring a Vessel up to Anchor
- PM-04-PS03: Manoeuvre a Vessel in Port
- PM-04-PS04: Manoeuvre a Vessel at Sea under Different Situations and Conditions
- PM-04-PS05: Signal Intentions and/or Communicate Information

4.2 Guidelines for Practical Skills

4.2.1 PM-04-PS01: Issue, Receive and Execute Helm and Engine Control Instructions

Scope of Practical Skill

Given work instructions, checklists, work area, case study, activity documents, any templates, forms, safety and quality principles and standard operating procedures procedure information available, the learner must be able to:

- PA0101 Issue and receive verbal and written instructions
- PA0102 Execute appropriate helm control instructions
- PA0103 Follow correct engine control instructions

Applied Knowledge

- AK0101 Manufacturers guide and instructions
- AK0102 Code of safe working practices for Merchant Seaman / Fishermen
- AK0103 ICS Bridge procedures guide

Internal Assessment Criteria

- IAC0101 Instructions received are acknowledged by accurate verbal repetition as required by standard operating procedures
- IAC0102 Emergency, written and verbal instructions are issued using correct naval terminology and in accordance with naval regulations and international codes
- IAC0103 Instructions are responded to in an appropriate manner and degree of urgency using the appropriate nautical term
- IAC0104 Instructions are issued using the established chain of command

4.2.2 PM-04-PS02: Bring a Vessel up to Anchor

Scope of Practical Skill

Given work instructions, checklists, work area, case study, activity documents, any templates, forms, safety and quality principles and standard operating procedures procedure information available, the learner must be able to:

- PA0201 Apply the anchoring procedures of a vessel in a simulated environment, with reference to the functions of the personnel involved, preparations, equipment and machinery to be used
- PA0202 Plan an anchoring position which takes into consideration the effect of weather, tides, current, holding ground and traffic density

- PA0203 Handle the vessel during the approach to the anchorage in a simulated environment while accounting for the effects of deadweight, trim, speed and stopping distances

Applied Knowledge

- AK0201 International regulations for the prevention of collision at sea
AK0202 Code of safe working practices for Merchant Seaman / Fishermen
AK0203 International code of signals

Internal Assessment Criteria

- IAC0201 The anchoring procedures on a vessel are applied with reference to the functions of the personnel involved, preparations, equipment and machinery to be used
IAC0202 An anchoring position is planned which takes into consideration the effect of weather, tides, current, holding ground and traffic density
IAC0203 The vessel is handled during the approach to the anchorage while accounting for the effects of deadweight, trim, speed and stopping distances

4.2.3 PM-04-PS03: Manoeuvre a Vessel in Port

Scope of Practical Skill

Given work instructions, checklists, work area, case study, activity documents, any templates, forms, safety and quality principles and standard operating procedures procedure information available, the learner must be able to:

- PA0301 Demonstrate basic manoeuvres, duties and use of mooring ropes during unberthing in a simulated environment
PA0302 Use mooring ropes when alongside
PA0303 Con the vessel for a given manoeuvre which include but are not limited to stopping and going astern, turning short round, use of thrusters, picking up or dropping a pilot, approaching a quay, jetty and another vessel, approaching buoys and entering a dock

Applied Knowledge

- AK0301 International regulations for the prevention of collision at sea
AK0302 Code of safe working practices for Merchant Seaman / Fishermen
AK0303 International code of signals

Internal Assessment Criteria

- IAC0301 Basic manoeuvres, duties and use of mooring ropes during unberthing are explained and demonstrated in accordance with vessel procedures
IAC0302 Basic manoeuvres, duties and use of mooring ropes during berthing are explained and demonstrated in accordance with vessel procedures
IAC0303 Mooring ropes are used when alongside
IAC0304 The vessel is conned for a given manoeuvre which include but are not limited to stopping and going astern, turning short round, use of thrusters, picking up or dropping a pilot, approaching a quay, jetty and another vessel, approaching buoys and entering a dock in a simulated environment

4.2.4. PM-04-PS04: Manoeuvre a Vessel at Sea under Different Situations and Conditions

Scope of Practical Skill

Given work instructions, checklists, work area, case study, activity documents, any templates, forms, safety and quality principles and standard operating procedures procedure information available, the learner must be able to:

- PA0201 Manoeuvres and procedures for the rescue of persons in distress and man overboard are described with examples of their purpose
- PA0202 Proper procedures for anchoring and mooring are described with examples
- PA0203 Manoeuvring during fishing operations is explained with special regard to factors that could adversely affect the vessel's safety during such operations
- PA0204 Towing and being towed procedures are described with examples
- PA0205 Berthing, unberthing, anchoring and manoeuvring alongside other vessels at sea is described with examples of the procedures

Applied Knowledge

- AK0201 International regulations for the prevention of collision at sea
- AK0202 Code of safe working practices for Merchant Seaman / Fishermen
- AK0203 International code of signals
- AK0204 Intact Stability Booklet

Internal Assessment Criteria

- IAC0401 Incoming signals are decoded in order to generate responses appropriate to the decoded signal and degree of urgency
- IAC0402 Correctly coded signals are despatched to designated recipients with a degree of urgency appropriate to the context
- IAC0403 Signals to manoeuvre the vessel are communicated to the necessary stations as per standard procedures
- IAC0404 Communication equipment is used in accordance with manufacturer's specifications and standard operating procedures
- IAC0405 Vessels in close proximity are communicated with using the appropriate method in order to facilitate the correct manoeuvring of vessels in accordance with plans and/or safety requirements

4.2.5. PM-04-PS05: Signal Intentions and/or Communicate Information

Scope of Practical Skill

Given work instructions, checklists, work area, case study, activity documents, any templates, forms, safety and quality principles and standard operating procedures procedure information available, the learner must be able to:

- PA0501 Decode incoming signals to generate responses appropriate to the decoded signal and degree of urgency
- PA0502 Despatch correctly coded signals to designated recipients with a degree of urgency appropriate to the context
- PA0503 Communicate signals to manoeuvre the vessel to the necessary stations
- PA0504 Use communication equipment in a simulated environment
- PA0505 Communicate with vessels in close proximity in order to facilitate the correct manoeuvring of vessels

Applied Knowledge

AK0501	International regulations for the prevention of collision at sea
AK0502	Code of safe working practices for fishers
AK0503	International code of signals

Internal Assessment Criteria

IAC0501	Incoming signals are decoded in order to generate responses appropriate to the decoded signal and degree of urgency
IAC0502	Correctly coded signals are despatched to designated recipients with a degree of urgency appropriate to the context
IAC0503	Signals to manoeuvre the vessel are communicated to the necessary stations as per standard procedures
IAC0504	Communication equipment is used in accordance with manufacturer's specifications and standard operating procedures
IAC0505	Vessels in close proximity are communicated with using the appropriate method in order to facilitate the correct manoeuvring of vessels in accordance with plans and/or safety requirements in a simulated environment

4.3 Provider Accreditation Requirements for the Practical Skill Module

Physical Requirements:

- Classroom furniture (chairs and tables, audio & visual equipment and all other equipment conducive to a learning environment)
- Hand-outs and stationery (electronic consumables, pencils/paper)
- Learning material
- Type approved simulation, where necessary

Human Resource Requirements:

- Facilitator/learner ratio 1 to 20
- Relevant qualifications/experience
- Achieved accreditation for both facilitators and courseware from SAMSA

Legal Requirements:

- Accredited with the South African Maritime Safety Authority
- Accredited as per QCTO requirements

4.4 Critical Topics to be Assessed Externally for the Practical Skill Module

- None

4.5 Exemptions

- None

5. 315202000-PM-05, Maintain and Repair Lifesaving and Vessel's Safety Equipment, NQF Level 3, Learning Contract Time 40h, Cr4

5.1 Purpose of the Practical Skill Modules

The focus of the learning in this module is on providing the learner an opportunity to contribute to the safety equipment onboard a vessel

The learner will be required to:

PM-05-PS01: Inspect Emergency and Lifesaving Equipment

PM-05-PS02: Verify Validity for Use, of Pyrotechnic Equipment, EPIRBS, SARTS and Hydrostatic Relief Mechanisms in a Simulated Environment

5.2 Guidelines for Practical Skills

5.2.1 PM-05-PS01: Inspect Emergency and Lifesaving Equipment

Scope of Practical Skill

Given work instructions, checklists, work area, case study, activity documents, any templates, forms, safety and quality principles and standard operating procedures procedure information available, the learner must be able to:

PA0101 Identify all emergency and lifesaving equipment on board

PA0102 Check expiry dates and general condition of lifesaving and emergency equipment

Applied Knowledge

AK0101 Practices for handling of expired lifesaving and emergency equipment

AK0102 Vessel safety plan

Internal Assessment Criteria

IAC0101 Emergency and lifesaving equipment identified

IAC0102 Validity & expiry dates of emergency and lifesaving equipment on board are determined

5.2.2 PM-05-PS02: Verify Validity for Use, of Pyrotechnic Equipment, EPIRBS, SARTS and Hydrostatic Relief Mechanisms in a Simulated Environment

Scope of Practical Skill

Given work instructions, checklists, work area, case study, activity documents, any templates, forms, safety and quality principles and standard operating procedures procedure information available, the learner must be able to:

PA0201 Identify and record expiry date on samples of equipment

PA0202 Compile a hypothetical report on equipment nearing expiry

Applied Knowledge

AK0201 Vessels safety equipment plan

AK0202 SOLAS Convention

Internal Assessment Criteria

IAC0201 Equipment valid and up to date, and recorded

IAC0202 Suitable report for near expiry equipment generated and presented

5.3 Provider Accreditation Requirements for the Practical Skill Module

Physical Requirements:

- Classroom furniture (chairs and tables, audio & visual equipment and all other equipment conducive to a learning environment)
- Hand-outs and stationery (electronic consumables, pencils/paper)
- Learning material
- Type approved simulation, where necessary

Human Resource Requirements:

- Facilitator/learner ratio 1 to 20
- Relevant qualifications/experience
- Achieved accreditation for both facilitators and courseware from SAMSA

Legal Requirements:

- Accredited with the South African Maritime Safety Authority
- Accredited as per QCTO requirements

5.4 Critical Topics to be Assessed Externally for the Practical Skill Module

- None

5.5 Exemptions

- None

6. 315202000-PM-06, Contribute to Security of Vessel and Crew, NQF Level 3, Learning Contract Time 20h, Credits 2

6.1 Purpose of the Practical Skill Modules

The focus of the learning in this module is on providing the learner an opportunity to contribute to the safety and security of the vessel and crew

The learner will be required to:

PM-06-PS01: Carry out Gangway Watchkeeping Duties

PM-06-PS02: Conduct a Security Patrol in a Simulated Environment

6.2 Guidelines for Practical Skills

6.2.1. PM-06-PS01: Carry out Gangway Watchkeeping Duties

Scope of Practical Skill

Given work instructions, checklists, work area, case study, activity documents, any templates, forms, safety and quality principles and standard operating procedures procedure information available, the learner must be able to:

PA0101 Complete a security access register

PA0102 Conduct body - and bag searches

PA0103 Report any suspicious incidents and/or persons

Applied Knowledge

AK0101 ISPS Code

Internal Assessment Criteria

IAC0101 A security access register is completed and maintained in accordance with Vessel Security plan

IAC0102 A body and bag search is carried out in accordance with accepted practice and ISPS Code

IAC0103 Suspicious incidents/persons reported to Duty Officer

6.2.1. PM-06-PS02: Conduct a Security Patrol in a Simulated Environment

Scope of Practical Skill

Given work instructions, checklists, work area, case study, activity documents, any templates, forms, safety and quality principles and standard operating procedures procedure information available, the learner must be able to:

PA0201 Nature of security threat is communicated to Duty Officer

PA0202 Activate the Ship Security Alert System as per instructions

PA0203 Call emergency stations as per orders

PA0204 Start emergency shut-down of main engines as per instructions

PA0205 Follow evacuate plan, if necessary

Applied Knowledge

AK0201 ISPS Code

Internal Assessment Criteria

IAC0201 Nature of security threat is communicated to Duty Officer

IAC 0202 The Ship Security Alert System is activated as per instructions

IAC 0203 Emergency stations are called as per orders

- IAC 0204 Emergency shut-down of main engines procedures are followed
IAC 0205 The ship's evacuation plan is executed, if necessary

6.3 Provider Accreditation Requirements for the Practical Skill Module

Physical Requirements:

- Classroom furniture (chairs and tables, audio & visual equipment and all other equipment conducive to a learning environment)
- Hand-outs and stationery (electronic consumables, pencils/paper)
- Learning material
- Type approved simulation, where necessary

Human Resource Requirements:

- Facilitator/learner ratio 1 to 20
- Relevant qualifications/experience
- Achieved accreditation for both facilitators and courseware from SAMSA

Legal Requirements:

- Accredited with the South African Maritime Safety Authority
- Accredited as per QCTO requirements

6.4 Critical Topics to be Assessed Externally for the Practical Skill Module

- None

6.5 Exemptions

- None

SECTION 3C: WORK EXPERIENCE MODULE SPECIFICATIONS

List of Work Experience Module Specifications

- 315202000-WM-01, Following Navigational Procedures at an Operational Level, NQF Level 4, Learning Contract Time 30 days, Credits:14
- 315202000-WM-02, Complying with Catch (Fish) Handling and Stowage Processes at an Operational Level, NQF Level 4, Learning Contract Time 26 days, Credits: 10
- 315202000-WM-03, Abiding by Shipboard Operations Procedures and Caring for Persons On Board at an Operational Level, NQF Level 4, Learning Contract Time 30 days, Credits: 12
- 315202000-WM-04, Handling and Manoeuvring a Fishing Vessel at an Operational Level, NQF Level 4, Learning Contract Time 20 days, Credits 8
- 315202000-WM-05, Complying with Maintenance of Lifesaving and Vessel Safety Equipment, NQF Level 4, Learning Contract Time 10 days Credits: 8
- 315202000-WM-06, Conducting Security Operations at an Operational Level, NQF Level 4, Learning Contract Time 10 days Credits: 8
- 315202000-WM-07: Complying with Personnel Policies and Procedures at an Operational Level, NQF level 6, Learning Contract Time 45 days, Credits: 36

1. 315202000-WM-01: Following Navigational Procedures at an Operational Level, NQF Level 4, Learning Contract Time 30 days, Credits: 14

1.1 Purpose of the Work Experience Module

The focus of the work experience is on providing the learner an opportunity to gain exposure to keep a safe navigational watch and to use radar, automatic radar plotting aids (ARPA), electronic chart display and information systems (ECDIS), automatic identification systems (AIS) and other electronic aids to maintain safety of navigation.

The learner will be required to be exposed to:

WM-01-WE01	Plan and Conduct a Passage and Determine Position
WM-01-WE02	Maintain a Safe Navigational Watch during Fishing/Passage Operations
WM-01-WE03	Use of Radar and ARPA to Maintain Safety of Navigation
WM-01-WE04	Use of ECDIS to Maintain the Safety of Navigation, Where Required
WM-01-WE05	Respond to Emergencies
WM-01-WE06	Respond to Distress Signals
WM-01-WE07	Use the IMO Standard Marine Communication Phrases and use English in Written and Oral Form
WM-01-WE08	Transmit and Receive Information by Visual Signalling
WM-01-WE09	Manoeuvre the Vessel

1.2 Guidelines for Work Experiences

1.2.1 WM-01-WE01: Plan and Conduct a Passage and Determine Position

Scope of Work Experience

The person will be expected to engage in the following work activities:

WA0101	Consult navigational publications
WA0102	Effect chart corrections
WA0103	Select charts of adequate scale
WA0104	Set courses
WA0105	Calculate estimated time of arrival(ETA)
WA0106	Determine and apply compass error for courses and compass headings
WA0107	Recognise conspicuous objects and other terrestrial/celestial aids to navigation in daylight and night
WA0108	State vessels position by dead reckoning
WA0109	Operate all electronic navigational equipment required to be carried on the vessel and apply the information obtained to ascertain the vessel's position

Supporting evidence

SE0101	Statement of work experience
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1.2.2 WM-01-WE02: Maintain a Safe Navigational Watch during Fishing/Passage Operations

Scope of Work Experience

The person will be expected to engage in the following work activities:

WA0201	Prepare for sea, check vessel's draught, and that the necessary bridge equipment is operational and that proper sailing information is available
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- WA0202 Notify the master/ engine-room on leaving/entering port as appropriate and assist in carrying out the master's/pilot's orders/directions while monitoring the course, speed and position
- WA0203 At commencement of the watch ascertain vessel's position, course and speed and appraise the traffic situation and any hazards to navigation
- WA0204 At sea, prioritise the look-out, fix the vessel's position regularly, assess risks of collision and/or grounding and take appropriate action
- WA0205 Adjust the vessel's course and speed to the traffic, the waters and the meteorological conditions
- WA0206 Monitor and control navigational instruments and record relevant activities and incidents

Supporting Evidence

- SE0201 Statement of work experience

1.2.3 WM-01-WE03: Use of Radar and ARPA to Maintain Safety of Navigation

Scope of Work Experiencer

The person will be expected to engage in the following work activities:

- WA0301 Carry out operational checks and adjust the equipment to proper performance
- WA0302 Use the equipment to fix the vessel's position
- WA0303 Operate radar and ARPA to detect any hazards for groundings, close quarters situations or collisions with other vessels or objects and determine appropriate avoiding action
- WA0304 Take appropriate action to avoid accidents

Supporting Evidence

- SE0301 Statement of work experience

1.2.4 WM-01-WE04: Use of ECDIS to Maintain the Safety of Navigation, Where Required

Scope of Work Experience

The person will be expected to engage in the following work activities:

- WA0401 Knowledge of the capability and limitations of ECDIS operating including a thorough understanding of electronic navigational chart data(ENC), data accuracy, presentation rules, display options and other chart data formats
- WA0402 Knowledge of capability and limitations of ECDIS including the danger of over-reliance
- WA0403 Knowledge of capability and limitations of ECDIS operations including familiarity with the functions of ECDIS required by performance standards in force

Supporting Evidence

- SE0401 Statement of work experience

1.2.5 WM-01- WE05: Respond to Emergencies

Scope of Work Experience

The person will be expected to engage in the following work activities:

- WA0501 Apply duties laid down in the vessel's contingency plans for emergencies
- WA0502 Take initial actions in the event of an emergency

WA0503 Take action correctly when emergencies arise in port

Supporting Evidence

SE0501 Statement of work experience

1.2.6 WM-01- WE06: Respond to Distress Signals

Scope of Work Experience

The person will be expected to engage in the following work activities:

- WA0601 Establish position of own vessel and the unit in distress
- WA0602 Conduct a preliminary assessment of the situation, suggest actions and inform the master
- WA0603 Observe all events and maintain a record

Supporting Evidence

SE0601 Statement of work experience

1.2.7 WM-01- WE07: Use the IMO Standard Marine Communication Phrases and Use English in Written and Oral Form

Scope of Work Experience

The person will be expected to engage in the following work activities:

- WA0701 Use the IMO Standard Marine Communication Phrases with other vessels and costal stations
- WA0702 Use English nautical publications and manuals
- WA0703 Complete nautical reports and forms in Standard English
- WA0704 Communicate with members of the watch in safety related duties
- WA0705 Communicate with shore stations

Supporting Evidence

SE0701 Statement of work experience

1.2.8 WM-01- WE08: Transmit and Receive Information by Visual Signaling

Scope of Work Experience

The person will be expected to engage in the following work activities:

- WA0801 Transmit and receive Morse signals
- WA0802 Use the International Code of Signals to interpret messages given by flags and pennants

Supporting Evidence

SE0801 Statement of work experience

1.2.9 WM-01- WE09: Manoeuvre the vessel

Scope of Work Experience

The person will be expected to engage in the following work activities:

- WA0901 Conduct proper berthing and anchoring procedures
- WA0902 Carry out man overboard manoeuvre to rescue a person overboard

Supporting Evidence

SE0901 Statement of work experience

1.3 Contextualised Workplace Knowledge

1. International and national safety organisation safety requirements
2. International regulations for prevention of collisions at sea
3. Company specific policies and procedures
4. International Code of signals
5. Master's standing orders

1.4 Criteria for Workplace Approval

Physical Requirements:

- Access to electronic, electrical and control system areas in order for learner to have exposure to all aspects of occupational tasks
- All equipment relevant to engineering systems to conduct occupational tasks
- The physical resources in terms of equipment, systems, conditions and interfaces that the vessel may have to ensure that learners can participate in all work activities.

Human Resource Requirements:

- Minimum requirements to include an Ordinary/Able Seafarer Certificate that includes competencies related to navigational, operational and maintenance tasks on board a vessel at support level and minimum qualifying service (sea time) requirements as set out in the Merchant Shipping "Safe manning, training and certification" Regulations
- Support from shipboard supervising officers
- Workplace coach/mentor: learner ratio 1 to 5

Legal Requirements:

- Compliant to all relevant National legislation and International Conventions and Regulations
- Accredited with relevant authority

1.5 Assignments to be Assessed Externally

Assignment description:

- None

Elements to be assessed:

- None

Evaluation criteria:

- None

2. 315202000-WM-02: Complying with Catch (Fish) Handling and Stowage Processes at an Operational Level, NQF Level 4, Learning Contract Time 26 days, Credits: 10

2.1 Purpose of the Work Experience Module

The focus of the work experience is on providing the learner an opportunity to gain exposure to the preparation of the catch (fish) loading plan, monitor the loading, stowage, securing, care during the voyage and the unloading of catch (fish).

The learner will be required to be exposed to:

- WM-02-WE01 Prepare the Catch (Fish) Loading Plan
- WM-02-WE02 Monitor the Loading, Stowage, Securing, Care During the Voyage and the Unloading of Catch (Fish)

2.2 Guidelines for Work Experiences

2.2.1 WM-02-WE01: Prepare the Catch (Fish) Loading Plan

Scope of Work Experience

The person will be expected to engage in the following work activities:

- WA0101 Analyse catch (fish) manifests
- WA0102 Allocate stow positions for catch (fish)
- WA0103 Produce loading plan

Supporting evidence

- SE0101 Statement of work experience
- SE0102 Catch (fish) loading plans

2.2.2 WM-02-WE02: Monitor the Loading, Stowage, Securing, Care During the Voyage and the Unloading of Catch (Fish)

Scope of Work Experience

The person will be expected to engage in the following work activities:

- WA0201 Supervise the preparation of refrigerated spaces, holds and deep tanks for loading
- WA0202 Supervise the operation of the vessel's catch (fish) gear
- WA0203 Control the landing /hauling of a catch in all weather conditions
- WA0204 Operate the vessel within its stability parameters taking into account the weather conditions and the size of the catch
- WA0205 Ensure safety procedures for danger and snap back zones are adhered to
- WA0206 Supervise the loading /discharge of catch (fish) ashore
- WA0207 Ensure a solid stow and securing of all cargoes in packaged form
- WA0208 Ensure separation between bulk cargoes or packaged goods if required
- WA0209 Supervise to ensure that adequate precautions are taken to ensure ventilation and facilitate inspections during the voyage
- WA02010 Inspect the catch (fish) at regular intervals
- WA02011 Record all inspections and the conditions found
- WA02012 Take actions to avoid damage to the vessel or catch (fish)
- WA02013 Inspect hatch covers, gear and cargoes before and during discharging
- WA02014 Cargoes discharged in good condition and at the right destination

- WA02015 Satisfactory trim, stability, hogging and sagging at all times
WA02016 Ensure the satisfactory loading, stowage and securing of stores
WA02017 Identify any damage to vessel or catch (fish) after discharging and establish possible causes

Supporting evidence

- SE0201 Statement of work experience

2.3 Contextualised Workplace Knowledge

1. International and national safety organisation safety requirements
2. International Convention for the Prevention of Pollution from Vessels (MARPOL) requirements
3. Company specific policies and procedures
4. International Safety Management Code
5. Code of safe working practices for merchant seaman / fishermen
6. Master's standing orders
7. Machine and equipment manufacturers' requirements

2.4 Criteria for Workplace Approval

Physical Requirements:

- Access to electronic, electrical and control system areas in order for learner to have exposure to all aspects of occupational tasks
- All equipment relevant to engineering systems to conduct occupational tasks
- The physical resources in terms of equipment, systems, conditions and interfaces that the vessel may have to ensure that learners can participate in all work activities.

Human Resource Requirements:

- Minimum requirements to include an Able/Ordinary Seafarer Certificate that includes competencies related to marine engineering at support level and minimum qualifying service (sea time) requirements as set out in the Merchant Shipping "Safe manning, training and certification" Regulations
- Support from shipboard supervising officers
- Workplace coach/mentor: learner ratio 1 to 5

Legal Requirements:

- Compliant to all relevant national legislation and international conventions
- Accredited with relevant authority

2.5 Additional Assignments to be Assessed Externally

Assignment description:

- None

Elements to be assessed:

- None

Evaluation criteria:

- None

**3. 315202000-WM-03: Abiding by Shipboard Operations Procedures and Caring for Persons On Board at Operational Level, NQF Level 4, Learning Contract
Time 30 days, Credits: 12**

3.1 Purpose of the Work Experience Module

The focus of the work experience is on providing the learner an opportunity to gain exposure to assist in controlling the operation of the vessel, care of persons on board and carrying out their work on board a vessel in a professional and safe manner.

The learner will be required to be exposed to:

- WM-03-WE01: Compliance with Pollution-Prevention Requirements
- WM-03-WE02: Maintain Seaworthiness of the Vessel
- WM-03-WE03: Prevent, Control and Fight Fires On Board
- WM-03-WE04: Operate Lifesaving Appliances
- WM-03-WE05: Apply Medical First Aid On Board Vessel
- WM-03-WE06: Monitor Compliance with Legislative Requirements
- WM-03-WE07: Application of Leadership and Team Working Skills

3.2 Guidelines for Work Experiences

3.2.1 WM-03-WE01: Compliance with Pollution-Prevention Requirements

Scope of Work Experience

The person will be expected to engage in the following work activities:

- WA0101 Implement proactive measures to protect the marine environment
- WA0102 Procedures are agreed and properly planned and all scuppers are blocked before bunkering
- WA0103 Initiate immediate investigation to detect the source on discovering any pollution around the vessel
- WA0104 Stop or prevent leakages and spills of harmful liquids and solid substances
- WA0105 Sound all tanks and compartments if any damage is suspected

Supporting Evidence

- SE0301 Statement of work experience

3.2.2 WM-03-WE02: Maintain Seaworthiness of the Vessel

Scope of Work Experience

The person will be expected to engage in the following work activities:

- WA0201 Inspect hull and hull openings, compartments, hatch covers and equipment and take action where defects are detected
- WA0202 Secure any loose objects to avoid damage
- WA0203 Arrange for regular control measures to ensure watertight integrity

Supporting Evidence

- SE0201 Statement of work experience

3.2.3 WM-03-WE03: Prevent, Control and Fight Fires On Board

Scope of Work Experience

The person will be expected to engage in the following work activities:

- WA0301 Maintain fire and smoke detecting equipment
- WA0302 Ability to detect and correct hazardous situations and actions and keep the vessel clean and tidy

- WA0303 Maintain firefighting appliances, emergency escape routes and alarm systems
- WA0304 Demonstrate proper use of fixed installations and other firefighting appliances and agents
- WA0305 Locate and use fire protective equipment
- WA0306 Able to act in accordance with the firefighting plan during fire drills

Supporting Evidence

- SE0301 Statement of work experience

3.2.4 WM-04-WE04: Operate Lifesaving Appliances

Scope of Work Experience

The person will be expected to engage in the following work activities:

- WA0401 Organise abandon vessel drills
- WA0402 Simulate launching, inflation and boarding of a life raft, and manoeuvring it clear of vessel's side
- WA0403 All required equipment on board a rescue craft is functioning and maintained as specified in the SOLAS training manual

Supporting evidence

- SE0401 Statement of work experience

3.2.5 WM-04-WE05: Apply Medical First Aid On Board Ship

Scope of Work Experience

The person will be expected to engage in the following work activities:

- WA0501 Stop excessive bleeding, ensure breathing and put casualties in proper recovery position
- WA0502 Detect signs of shock and heat stroke and act accordingly
- WA0503 Treat burns, scalds, fractures and hypothermia

Supporting Evidence

- SE0501 Statement of work experience

3.2.6 WM-03-WE06: Monitor Compliance with Legislative Requirements

Scope of Work Experience

The person will be expected to engage in the following work activities:

- WA0601 State where laws, rules and regulations concerning vessel operations and pollution-prevention are available
- WA0602 Use legislation to ascertain due approach to solve questions encountered during on board operations

Supporting evidence

- SE0601 Statement of work experience

3.2.7 WM-03-WE07: Application of Leadership and Team Working Skills

Scope of Work Experience

The person will be expected to engage in the following work activities:

- WA0701 Play a team role
- WA0702 Show leadership ability

Supporting Evidence

SE0701 Statement of work experience

3.3 Contextualised Workplace Knowledge

1. International and national safety organisation safety requirements
2. International Convention for the Prevention of Pollution from Ships (MARPOL) requirements
3. Requirements of shipboard oil pollution plan (SOPEP) as specified in the Shipboard Marine Pollution Emergency Plans
4. Company specific policies and procedures
5. International Safety Management Code
6. Master's standing orders
7. Maritime Labour Convention

3.4 Criteria for Workplace Approval

Physical Requirements:

- Access to all unrestricted areas on a vessel in order for learner to have exposure to all aspects of occupational tasks
- Equipment to conduct occupational tasks
- The physical resources in terms of equipment, systems, conditions and interfaces that the workplace must have to ensure that learners can participate in all work activities.

Human Resource Requirements:

- Minimum requirements to include an Able/Ordinary Seafarer Certificate that includes competencies related to navigation at support level and minimum qualifying service (sea time) requirements as set out in the Merchant Shipping "Safe manning, training and certification" Regulations
- Support from shipboard supervising officers
- Workplace coach/mentor: learner ratio 1 to 5

Legal Requirements:

- Compliant to all relevant National legislation and International Conventions
- Accredited with relevant authority

3.5 Additional Assignments to be Assessed Externally

Assignment description:

- None

Elements to be assessed:

- None

Evaluation criteria:

- None

4. 315202000-WM-04: Handling and Manoeuvring a Vessel at Operational Level, NQF Level 4, Learning Contract Time 20 days, Credits 8

4.1 Purpose of the Work Experience Module

The focus of the work experience is on providing the learner an opportunity to gain exposure to handling and manoeuvring a vessel

The learner will be required to be exposed to:

WM-04-WE01 Assist with Handling and Manoeuvring of the Vessel

WM-04-WE02 Carry Out Handling and Manoeuvring During Collision Avoidance

4.2 Guidelines for Work Experiences

4.2.1 WM-04-WE01: Handling and Manoeuvring of the Vessel at Operational Level

Scope of Work Experience

WA0101 Apply engine movement instructions

WA0102 Ability to monitor helmsman's compliance with steering instructions

WA0103 Monitor traffic situation during vessel manoeuvring

Supporting evidence

SE0101 Statement of work experience

4.2.2 WM-04-WE02: Carry Out Handling and Manoeuvring During Collision Avoidance

Scope of Work Experience

WA0201 Ability to use autopilot to alter course in accordance with collision regulations

WA0202 Reduce speed in restricted visibility in compliance with the collision regulations

WA0203 Manoeuvre vessel in the vicinity of a traffic separation scheme

Supporting evidence

SE0101 Statement of work experience

4.3 Contextualised Workplace Knowledge

1. Company specific policies and procedures
2. International Safety Management Code
3. Code of safe working practices for merchant seaman / fishermen
4. Master's standing orders
5. International regulations for the prevention of collisions at sea

4.4 Criteria for Workplace Approval

Physical Requirements:

- Access to all unrestricted areas on a vessel in order for learner to have exposure to all aspects of occupational tasks
- Equipment to conduct occupational tasks
- The physical resources in terms of equipment, systems, conditions and interfaces that the workplace must have to ensure that learners can participate in all work activities.

Human Resource Requirements:

- Minimum requirements to include an Ordinary Seafarer Certificate that includes competencies related to navigation at support level and minimum qualifying service (sea time) requirements as set out in the Merchant Shipping “Safe manning, training and certification” Regulations
- Support from shipboard supervising officers
- Workplace coach/mentor: learner ratio 1 to 5

Legal Requirements:

- Compliant to all relevant National legislation and International Conventions
- Accredited with relevant authority

4.5 Additional Assignments to be Assessed Externally

Assignment description:

- None

Elements to be assessed:

- None

Evaluation criteria:

- None

5 315202000-WM-05: Complying with Maintenance of Lifesaving and Vessel Safety Equipment, NQF Level 4, Learning Contract Time 10 days Credits: 8

5.1 Purpose of the Work Experience Module

The focus of the work experience is on providing the learner an opportunity to gain exposure to inspection and monitoring of lifesaving equipment

The learner will be required to be exposed to:

- WM-05-WE01: Execute Planned Maintenance on Survival Craft, Life Rafts and Rescue Boats
- WM-05-WE02 Inspect and Monitor Pyrotechnics, Floatation Aids, Life Jackets and Immersion Suits

5.2 Guidelines for Work Experiences

5.2.1 WM-05-WE01: Execute Planned Maintenance on Survival Craft, Life Rafts and Rescue Boats

Work Experience

The person will be expected to engage in the following work activities:

- WA0101 Ability to inspect survival craft/life rafts and rescue boats in accordance with international practices
- WA0102 Rectify deficiencies and replace expired rations and fresh water
- WA0103 Launching apparatus for survival craft is in sound working order

Supporting evidence

- SE0101 Statement of work experience

5.3 Contextualised Workplace Knowledge

1. Company specific policies and procedures
2. International Safety Management Code
3. Code of safe working practices for merchant seaman / fishermen
4. Master's standing orders

5.2.1 WM-05-WE02: Inspect and Monitor Pyrotechnics, Floatation Aids, Life Jackets and Immersion Suits

Work Experience

The person will be expected to engage in the following work activities:

- WA0201 Ability to verify the correct number of flares, smoke floats , life jackets and immersion suits in accordance with the fire and safety plan
- WA0202 Ability to verify the validity of all pyrotechnic equipment on board, replacing expired equipment

Supporting evidence

- SE0201 Statement of work experience

5.3 Contextualised Workplace Knowledge

1. Company specific policies and procedures
2. International Safety Management Code
3. Code of safe working practices for merchant seaman / fishermen

4. Master's standing orders

5.4 Criteria for Workplace Approval

Physical Requirements:

- Access to all unrestricted areas on a vessel in order for learner to have exposure to all aspects of occupational tasks
- Equipment to conduct occupational tasks
- The physical resources in terms of equipment, systems, conditions and interfaces that the workplace must have to ensure that learners can participate in all work activities.

Human Resource Requirements:

- Minimum requirements to include an Ordinary Seafarer Certificate that includes competencies related to navigation at support level and minimum qualifying service (sea time) requirements as set out in the Merchant Shipping "Safe manning, training and certification" Regulations
- Support from shipboard supervising officers
- Workplace coach/mentor: learner ratio 1 to 5

Legal Requirements:

- Compliant to all relevant National legislation and International Conventions
- Accredited with relevant authority

5.5 Additional Assignments to be Assessed Externally

Assignment description:

- None

Elements to be assessed:

- None

Evaluation criteria:

- None

6. 315202000-WM-06: Conducting Security Operations at the Operational Level NQF level 4, Learning contract time 10 days (Credits: 8)

6.1 Purpose of the Work Experience Module

The focus of the work experience is on providing the learner an opportunity to gain exposure to conduct security operations

The learner will be required to be exposed to:

WM-06-WE01: Company and Shipboard Security Procedures

WM-06-WE02: Internationally Accepted Practices for Combatting Piracy and Armed Robbery

6.2 Guidelines for Work Experiences

6.2.1 WM-06-WE01: Company and Shipboard Security Procedures

Scope of Work Experience

The person will be expected to engage in the following work activities:

- WA0101 Receive and log reports of threats or security incidents
- WA0102 Notify the master and / or 2nd Engineer and SSO of all reports of threats and security incidents
- WA0103 Make required notifications to the facility, port and local law enforcement, as directed by the master and / or 2nd Engineer
- WA0104 Request emergency assistance from the facility, port or local law enforcement, as directed by the master and / or 2nd Engineer
- WA0105 Activate security teams, as directed by the master and / or 2nd Engineer
- WA0106 Receive routine check-in calls from security patrols
- WA0107 Receive and log changes in security levels and inform the master and / or 2nd Engineer and SSO
- WA0108 Log security training and exercises

Supporting evidence

- SE0101 Statement of work experience

6.2.2 WM-06-WE02: Internationally Accepted Practices for Combatting Piracy and Armed Robbery

Scope of Work Experience

The person will be expected to engage in the following work activities:

- WA0201 Ensure the vessel is prepared against possible armed attack as per international recommendations
- WA0202 Identify and communicate possible threats of piracy or armed robbery
- WA0203 Issue instructions as per the identified threat, as appropriate
- WA0204 Monitor and control of attack-related drills on board

Supporting evidence

- SE0201 Statement of work experience

6.3 Contextualised Workplace Knowledge

1. International and national safety organisation safety requirements

2. International Convention for the Prevention of Pollution from Ships (MARPOL) requirements
3. Requirements of shipboard oil pollution plan (SOPEP) as specified in the Shipboard Marine Pollution Emergency Plans
4. Company specific policies and procedures
5. International Safety Management Code
6. International Code of signals
7. Code of safe working practices for merchant seaman / fishermen
8. Master and / or 2nd Engineer's standing orders
9. Safe engineering practice requirements and naval standards
10. Machine and equipment manufacturers' requirements
11. Standards of Training, Certification and Watchkeeping (STCW)
12. International Ship and Port Security Code
13. Master's standing orders
14. Ship security plan

6.4 Criteria for Workplace Approval

Physical Requirements:

- Access to all unrestricted areas on a vessel in order for learner to have exposure to all aspects of occupational tasks
- Equipment to conduct occupational tasks
- The physical resources in terms of equipment, systems, conditions and interfaces that the workplace must have to ensure that learners can participate in all work activities.

Human Resource Requirements:

- Minimum requirements to include an Ordinary Seafarer Certificate that includes competencies related to navigation at support level and minimum qualifying service (sea time) requirements as set out in the Merchant Shipping "Safe manning, training and certification" Regulations
- Support from shipboard supervising officers
- Workplace coach/mentor: learner ratio 1 to 5

Legal Requirements:

- Compliant to all relevant National legislation and International Conventions
- Accredited with relevant authority

6.5 Additional Assignments to be Assessed Externally

Assignment description:

- None

Elements to be assessed:

- None

Evaluation criteria:

- None

7. 315202000-WM-07: Complying with Personnel Policies and Procedures at an Operational Level, NQF level 6, Learning Contract Time 45 days (Credits: 36)

7.1 Purpose of the Work Experience Module

The focus of the work experience is on providing the learner an opportunity to gain exposure to monitoring, controlling and leading service providers and / or personnel as per legislative and regulatory compliance frameworks

The learner will be required to be exposed to:

- WM-07-WE01: Comply with Personnel and Contractual Practices
- WM-07-WE02: Adhere to Performance Management Principles
- WM-07-WE03 Uphold Team Management Practices
- WM-07-WE04 Ensure Training and Development of all Personnel are Aligned To Operational Requirements

7.2 Guidelines for Work Experiences

7.2.1 WM-07-WE01: Comply with Personnel and Contractual Practices

Scope of Work Experience

The person will be expected to engage in the following work activities:

- WA0101 Statutory certification for personnel and vessel is maintained as per legal and regulatory compliance requirements
- WA0102 Risk assessment policies are followed to determine scope of maintenance and repair requirements
- WA0103 Situational awareness practices are executed to determine possible margins for error and institute safety measures
- WA0104 Job specifications are logged onto the job list
- WA0105 Contracted services aboard are managed according to terms and conditions
- WA0106 Contract is managed according to terms and conditions
- WA0107 Completion report is signed off to confirm quality and allow payment

Supporting evidence

- SE0101 Statement of work experience

7.2.2 WM-07-WE02: Adhere to Performance Management Principles

Scope of Work Experience

The person will be expected to engage in the following work activities:

- WA0201 Performance standards are identified in accordance with operational requirements
- WA0202 Agreement is reached with a member of staff on performance expectations
- WA0203 Performance is measured against operational requirements
- WA0204 Performance appraisals are conducted according to company requirements
- WA0205 Corrective measures are agreed upon and instituted

Supporting evidence

- SE0201 Statement of work experience

7.2.3 WM-07-WE03: Uphold Team Management Practices

Scope of Work Experience

The person will be expected to engage in the following work activities:

- WA0301 Team building principles are adhered to
- WA0302 Change management requirements are complied with as and when required
- WA0303 License to practice is maintained as per legal and regulatory compliance requirements
- WA0304 Effective leadership behaviour is displayed

Supporting evidence

- SE0301 Statement of work experience

7.2.4 WM-07-WE04: Ensure Training and Development of all Personnel are Aligned to Operational Requirements

Scope of Work Experience

The person will be expected to engage in the following work activities:

- WA0401 Skills gap analysis is conducted to determine training needs
- WA0402 Personal development plans are compiled
- WA0403 Onboard formal and informal shipboard training is completed

Supporting evidence

- SE0101 Statement of work experience

7.3 Contextualised Workplace Knowledge

1. Training and development legislation
2. The aim of shipboard training
3. Principles and methods of developing human potential
4. Conditions of work environment
5. Labour legislation
6. Skills development guidelines
7. Performance management procedures
8. Ergonomics
9. Shipboard Safety Procedures
10. Shipboard Operational procedures
11. Code of Safe Working Practices for Merchant Seaman / Fishermen
12. Marine pollution legislation

7.4 Criteria for Workplace Approval

Physical Requirements:

- Access to all unrestricted areas on a vessel in order for learner to have exposure to all aspects of occupational tasks
- Equipment to conduct occupational tasks
- The physical resources in terms of equipment, systems, conditions and interfaces that the workplace must have to ensure that learners can participate in all work activities.

Human Resource Requirements:

- Minimum requirements to include a qualified engineer or a higher qualification than the learner and minimum qualifying service (sea time) requirements as set out in the Merchant Shipping “Safe manning, training and certification” Regulations
- Support from shipboard supervising officers
- Workplace coach/mentor: learner ratio 1 to 5

Legal Requirements:

- Compliant to all relevant National legislation and International Conventions
- Accredited with relevant authority

7.5 Additional Assignments to be Assessed Externally

Assignment description:

- None

Elements to be assessed:

- None

Evaluation criteria:

- None