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15/03/2016

Operations – Seafarer Examinations

Guidance Note

South African Maritime Qualifications

Code

Matrix

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Distribution

Name	Title
All	SAMSA personnel
Website	For public consumption

Revision History

Version	Effective Date	Summary of Changes
1.0	15/03//2016	First issue of the Document
2.0	01/01/2017	Review of the Matrix during a Syllabus Committee workshop and meeting. Majority of changes in way of Fishing Qualifications. List of requirements aligned to GOP-524.1
2.1	20/03/2017	Numerous amendments as suggested by various examiners
2.2	29/05/2017	Changes due to omission on the Engineering requirements for Chief & Second Engineer, as well as the forthcoming roll-out of the new format certificates to fishing, port operations and Marine Motorman certification

Document Review

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Explanatory Notes

The South African Maritime Qualifications Code (the SAMSA Code or the Code) Matrix is the breakdown of the requirements for each certificate of competency or proficiency for officers and ratings respectively. The South African Maritime Safety Authority (SAMSA or the Authority) is required by Regulations¹ to create the Code to ensure compliance with the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, 1978, as amended (STCW Convention). The Code is divided into the following sections/parts;

1. Part 1 – Deck STCW Convention requirements.
2. Part 2 – Engine STCW Convention requirements,
 - a. Table 1- STCW Requirements
 - b. Table 1a – STCW Requirements
 - c. Table 2 - Equivalent Subjects: Universities
 - d. Table 3 - Equivalent Subjects: TVET Colleges
3. Part 3 – Deck Fishing Vessels requirements
4. Part 4 – Engine Fishing Vessels requirements
5. Part 3 – Deck STCW Convention requirements (for seagoing ships ≥ 25 GT but < 500 GT, excluding fishing vessels)
6. Part 6 – Engine STCW Convention requirements (for seagoing ships ≥ 50 kW and ≥ 25 GT but < 500 GT, excluding fishing vessels)
7. Part 7 – Deck Port Operations requirements
8. Part 8 – Engine Port Operations requirements
9. Part 9 – Radio Certificates of Competency
10. Part 10 – Certificates of Proficiency (Deck Ratings)
11. Part 11 – Certificates of Proficiency (Engine Ratings)

¹ Merchant Shipping (Safe Manning, Training and Certification) Regulations, 2013, as amended

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Part 1 – Deck STCW Convention requirements.

Requirements	Officer in Charge of Navigational Watch	Chief Mate (<3000 GT)	Master (< 3000 GT)	Chief Mate	Master
Academic Requirements	Required Modules				
<i>Chartwork</i>	1 to 4	1 to 5	1 to 5	1 to 5	1 to 5
<i>Celestial Navigation</i>	1 to 3	1 to 5	1 to 5	1 to 5	1 to 5
<i>Electronic Navigation Systems</i>	1 & 2	1 to 4	1 to 4	1 to 4	1 to 4
<i>Naval Architecture</i>	1 to 5	1 to 10	1 to 10	1 to 10	1 to 10
<i>Cargo Handling and Stowage</i>	1 to 3	1 to 4	1 to 4	1 to 4	1 to 4
<i>Ship Power Plants</i>	-	1 & 2	1 & 2	1 & 2	1 & 2
<i>Personnel Management and Ship Master's Business</i>	1 to 4	1 to 8	1 to 8	1 to 8	1 to 8
<i>Marine Environmental Studies</i>	1 to 3	1 to 5	1 to 5	1 to 5	1 to 5
<i>Ship Manoeuvring and Handling</i>	1	1 & 2	1 & 2	1 & 2	1 & 2
<i>Emergency Procedures</i>	1	1 & 2	1 & 2	1 & 2	1 & 2
<i>Applied Marine Science and Maths</i>	1, 2 & 4	1, 2 & 4	1, 2 & 4	1, 2 & 4	1, 2 & 4
Basic Training					
<i>Personal Survival Techniques</i>	X	X	X	X	X
<i>Personal Safety and Social Responsibilities</i>	X	X	X	X	X
<i>Fire prevention & fire fighting</i>	X	-	-	-	-
<i>Medical first aid</i>	X	-	-	-	-
Advanced Fire fighting	X	X	X	X	X
Medical Care	-	X	X	X	X
Survival Craft and Rescue Boat other than Fast Rescue Boats	X	X	X	X	X
Proficiency in Fast Rescue Boat	-	-	-	-	-
Ship Security Officer	-	X	X	X	X
Security-awareness	-	-	-	-	-
Designated Security Duties	X	-	-	-	-
Electronic Navigation Systems (Certificate)	O ²	M ³	M	M	M
Communications	1	1	1	1	1

² O = Operational

³ M = Management

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Requirements	Officer in Charge of Navigational Watch	Chief Mate (<3000 GT)	Master (< 3000 GT)	Chief Mate	Master
Able seafarer Deck	X	X	-	X	-
Long Range Certificate	-	-	-	-	-
GMDSS General Operator's Certificate	X	X	X	X	X
ECDIS – Generic Course	X	X	X	X	X
Electronic Navigation Systems (Operational) – incl. Simulator	X	-	-	-	-
Electronic Navigation Systems (Management) – incl. Simulator	-	X	X	X	X

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Part 2 – Engine STCW Convention requirements,

Table 1- STCW Requirements

Requirements	Electro-Technical Officer	Officer in Charge of Engineering Watch	Second Engineer (<3000 kW) ⁴	Chief Engineer (< 3000 kW) ⁵	Second Engineer ⁶	Chief Engineer
Academic Requirements –	Required Modules					
<i>General Engineering Science / Applied Mechanics</i>	<i>A minimum of a Degree or Diploma in Electrical Engineering from a South African University or SAQA accredited qualification.</i>	1	1 to 4	1 to 4	1 to 4	1 to 4
<i>Electronics (Industrial Electronics)</i>		-	Electronics	Electronics	Electronics	Electronics
<i>Heat Engines/ Thermodynamics</i>		1 & 2	1 to 5	1 to 5	1 to 5	1 to 5
<i>Drawings</i>		1	1	1	1	1
<i>Applied Marine Science</i>		1	1 & 3	1 & 3	1 & 3	1 & 3
<i>Electro technology</i>		1 & 2	1 to 3	1 to 3	1 to 3	1 to 3
<i>Naval Architecture</i>		1 to 6	1 to 6, 7, 8,11 to 14	1 to 6, 7, 8,11 to 14	1 to 6, 7, 8,11 to 14	1 to 6, 7, 8,11 to 14
<i>Business</i>		1 to 4	1 to 4 & 6 to 7	1 to 4 & 6 to 7	1 to 4 & 6 to 7	1 to 4 & 6 to 7
<i>Engineering Knowledge</i>		1	1 to 3	1 to 3	1 to 3	1 to 3
<i>Network Systems</i>		-	-	-	-	-
<i>Power Electronics</i>		-	-	-	-	-
<i>Electrical Machines</i>		-	-	-	-	-
<i>Process Instrumentation</i>		-	-	-	-	-
<i>Electrical Protection</i>	-	-	-	-	-	
Basic Training						
<i>Personal Survival Techniques</i>	X	X	X	X	X	X
<i>Fire prevention and fire fighting</i>	X	X	-	-	-	-

⁴ The requirements for 2nd Engineer (<3000 kW), Chief Engineer (<3000 kW) and Second Engineer's academic qualifications to be the same as Chief Engineer. This will be required from 01 July 2017. Current requirements (as reflected in Table 1a- STCW Requirements) to have completed up to S3 level shall be accepted for application received on or before 30 June 2017

⁵ Ditto

⁶ Ditto

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Requirements	Electro-Technical Officer	Officer in Charge of Engineering Watch	Second Engineer (<3000 kW) ⁴	Chief Engineer (< 3000 kW) ⁵	Second Engineer ⁶	Chief Engineer
<i>Medical first aid</i>	X	X	X	X	X	X
<i>Personal Safety and Social Responsibilities</i>	X	X	X	X	X	X
Advanced Fire fighting	X	X	X	X	X	X
Medical Care	-	-	-	-	-	-
Survival Craft and Rescue Boat other than Fast Rescue Boats	X	X	X	X	X	X
Designated Security Duties	X	X	X	X	X	X
Human Element, Leadership and Management	X ⁷	-	-	-	-	-
Workshop Skills Training ⁸	X	X	-	-	-	-
GMDSS General Operator's Certificate ⁹	X	-	-	-	-	-
High Voltage ¹⁰	X	Required. If not provided, CoC will be endorsed with limitation				

⁷ Only required for those who started their training on or after 01 January 2012

⁸ Not required for a holder of the "Trade Certificate" issued under the Manpower and Training Act, 1981

⁹ Holders of GMDSS 1st and 2nd Class Radio Electronic Certificate already meet this requirement. A person not holding a Diploma or Degree in electrical/electronic engineering will retain this limitation despite having successfully completed a relevant GMDSS training.

¹⁰ May be allowed to provide alternative education/training in accordance with Higher Education electrical qualifications.

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Table 1a – STCW Requirements (Effective until 30 June 2017)

	Officer in Charge of Engineering Watch	Second Engineer <3000kW	Chief Engineer <3000kW	Second Engineer >3000kW	Chief Engineer >3000kW
Academic Requirements					
<i>General Engineering Science /Applied Mechanics</i>	1	1 to 2	1 to 3	1 to 3	1 to 4
<i>Heat Engines/ Thermodynamics</i>	1 and 2	1 to 3	1 to 5	1 to 5	1 to 5
<i>Engineering Drawing</i>	1	1	1	1	1
<i>Applied Marine Science</i>	1	1	1 and 3	1 and 3	1 and 3
<i>Electrotechnology</i>	1 and 2	1 and 2	1 to 3	1 to 3	1 to 4
<i>Naval Architecture</i>	1 to 6	1 to 6, 7, 8, 11 and 12	1 to 6, 7, 8, 11 and 12	1 to 6, 7, 8, 11 and 12	1 to 6, 7, 8, 9 and 11 to 14
<i>Personnel Management & Ship Master's Business</i>	1 to 4	1 to 4 and 6	1 to 4 and 6 to 7	1 to 4 and 6	1 to 4 and 6 to 7
<i>Engineering Knowledge</i>	1	1 and 2	1 to 3	1 and 2	1 to 3
<i>Industrial Electronics 2</i>	-	X	X	X	X
<i>Control Systems 2</i>	-	X	X	X	X
Basic Training					
<i>Personal Survival Techniques</i>	X	X	X	X	X
<i>Fire prevention & Firefighting</i>	X	-	-	-	-
<i>Medical First Aid</i>	X	X	X	X	X
<i>Personal Survival and Social Responsibilities</i>	X	X	X	X	X
Advanced Firefighting		X	X	X	X
Survival Craft and Rescue Boat other than Fast Rescue Boats	X	X	X	X	X
Fast Rescue Boats	-	-	-	-	-
Designated Security Duties	X	X	X	X	X
High Voltage Training	X	X	X	X	X

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Table 2 - Equivalent Subjects: Universities (Effective from 01 July 2017)

Requirements	Electro-Technical Officer	Officer in Charge of Engineering Watch	Second Engineer(<3000 kW)	Chief Engineer (< 3000 kW)	Second Engineer	Chief Engineer
Academic Requirements						
<i>General Engineering Science / Applied Mechanics</i>	-	<i>Fluid Mechanics 2 Mechanics 1</i>	<i>Fluid Mechanics 2 Mechanics 1 Mechanics of Machines 2 Strength of Materials 2</i>	<i>Fluid Mechanics 2 Mechanics 1 Mechanics of Machines 2 Strength of Materials 2</i>	<i>Fluid Mechanics 2 Mechanics 1 Mechanics of Machines Strength of Materials 2</i>	<i>Fluid Mechanics 2 Mechanics 1 Mechanics of Machines 2 Strength of Materials 2</i>
<i>Electronics</i>	<i>Electronics 2</i>	-	<i>Industrial Electronics 2</i>	<i>Industrial Electronics 2</i>	<i>Industrial Electronics 2</i>	<i>Industrial Electronics 2</i>
<i>Heat Engines/ Thermodynamics</i>	-	<i>Thermodynamics 2</i>	<i>Thermodynamics 3</i>	<i>Thermodynamics 3</i>	<i>Thermodynamics 3</i>	<i>Thermodynamics 3</i>
<i>Drawings</i>	-	<i>Drawing 1</i>	<i>Drawing 1</i>	<i>Drawing 1</i>	<i>Engineering Drawing 1</i>	<i>Drawing 1</i>
<i>Applied Marine Science</i>	-	<i>Mathematics 1</i>	<i>Mathematics 1</i>	<i>Mathematics 1</i>	<i>Mathematics 1</i>	<i>Mathematics 1</i>
<i>Electro technology</i>	-	<i>Electrotechnology 1</i>	<i>Electrotechnology 1 Electrotechnology 3</i>	<i>Electrotechnology 1 Electrotechnology 3</i>	<i>Electrotechnology 1 Electrotechnology 3</i>	<i>Electrotechnology 1 Electrotechnology 3</i>
<i>Naval Architecture</i>	-	<i>Naval Architecture 1</i>	<i>Naval Architecture 1 Naval Architecture 2 Naval Architecture 3</i>	<i>Naval Architecture 1 Naval Architecture 2 Naval Architecture 3</i>	<i>Naval Architecture 1 Naval Architecture 2 Naval Architecture 3</i>	<i>Naval Architecture 1 Naval Architecture 2 Naval Architecture 3</i>
<i>Business</i>	-	<i>Legal Knowledge 1(A) or Marine Law 1</i>	<i>Legal Knowledge 1(A) or Marine Law 2</i>	<i>Legal Knowledge 1(A and B) or Marine Law 2</i>	<i>Legal Knowledge 1(A and B) or Marine Law 2</i>	<i>Legal Knowledge 1(A and B) or Marine Law 2</i>

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Requirements	Electro-Technical Officer	Officer in Charge of Engineering Watch	Second Engineer(<3000 kW)	Chief Engineer (< 3000 kW)	Second Engineer	Chief Engineer
<i>Engineering Knowledge</i>	-	<i>Marine Engineering Knowledge 1(A)</i>	<i>Marine Engineering Knowledge 1 and 2 Marine Engineering Knowledge 3</i>	<i>Marine Engineering Knowledge 1 and 2 Marine Engineering Knowledge 3</i>	<i>Marine Engineering Knowledge 1 and 2 Marine Engineering Knowledge 3</i>	<i>Marine Engineering Knowledge 1 and 2 Marine Engineering Knowledge 3</i>
<i>Network Systems</i>	<i>Network Systems 2</i>	-	-	-	-	-
<i>Power Electronics</i>	<i>Power Electronics 3</i>	-	-	-	-	-
<i>Electrical Machines</i>	<i>Electrical Machines 3</i>	-	-	-	-	-
<i>Process Instrumentation</i>	<i>Process Instrumentation 2</i>	-	-	-	-	-
<i>Electrical Protection</i>	<i>Electrical Protection 3</i>	-	-	-	-	-

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Table 3 - Equivalent Subjects: TVET Colleges

Requirements	Officer in Charge of Engineering Watch	Second Engineer(<3000 kW)	Chief Engineer (< 3000 kW)	Second Engineer	Chief Engineer
Academic Requirements					
<i>General Engineering Science / Applied Mechanics</i>	<i>N4 Engineering Science N4 Mechanotechnics</i>	<i>N4 Engineering Science N6 Mechanotechnics N6 Strength of Materials and Structures N5 Fluid Mechanics</i>	<i>N4 Engineering Science N6 Mechanotechnics N6 Strength of Materials and Structures N5 Fluid Mechanics</i>	<i>N4 Engineering Science N6 Mechanotechnics N6 Strength of Materials and Structures N5 Fluid Mechanics</i>	<i>N4 Engineering Science N6 Mechanotechnics N6 Strength of Materials and Structures N5 Fluid Mechanics</i>
<i>Electronics</i>	<i>N3 Industrial Electronics</i>	<i>N3 Industrial Electronics</i>	<i>N3 Industrial Electronics</i>	<i>N3 Industrial Electronics</i>	<i>N3 Industrial Electronics</i>
<i>Heat Engines/ Thermodynamics</i>	<i>N5 Power Machines</i>	<i>N6 Power Machines</i>	<i>N6 Power Machines</i>	<i>N6 Power Machines</i>	<i>N6 Power Machines</i>
<i>Drawings</i>	<i>N3 Engineering Drawings</i>	<i>N 3 Engineering Drawings</i>	<i>N 3 Engineering Drawings</i>	<i>N 3 Engineering Drawings</i>	<i>N 3 Engineering Drawings</i>
<i>Applied Marine Science</i>	<i>N4 Mathematics</i>	<i>N4 Mathematics</i>	<i>N4 Mathematics</i>	<i>N4 Mathematics</i>	<i>N4 Mathematics</i>
<i>Electro technology</i>	<i>N4 Electrotechnics N3 Industrial Electronics</i>	<i>N6 Electro technics N6 Control Systems N3 Industrial Electronics</i>	<i>N6 Electro technics N6 Control Systems N3 Industrial Electronics</i>	<i>N6 Electro technics N6 Control Systems N3 Industrial Electronics</i>	<i>N6 Electro technics N6 Control Systems N3 Industrial Electronics</i>
<i>Naval Architecture</i>	<i>To be completed at Universities only</i>				
<i>Business</i>					
<i>Engineering Knowledge</i>					

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Part 3 – Deck Fishing Vessels requirements

The table below groups' certificates available for fishing, with the primary qualifications listed in the table. The different CoC's are;

1. Deck Officer (fishing)
 - a. Deck Officer (<24m)
 - b. Deck Officer (≥24m)
2. Skipper (limited waters)
 - a. Skipper (fishing < 24m – limited waters)
 - b. Skipper (Fishing ≥24 metres – limited water)
3. Skipper (unlimited waters)
 - a. Skipper (fishing < 24m – unlimited waters)
 - b. Skipper (Fishing ≥24 metres – unlimited waters)

Certification	Deck Officer (Fishing)	Skipper (fishing limited waters)	Skipper (fishing unlimited waters)
Academic Requirements	Required Modules		
<i>Chartwork</i>	1 to 3	1 to 4	1 to 5
<i>Celestial Navigation</i>	-	-	1
<i>Electronic Navigation Systems</i>	1 to 2	1 to 2	1 to 2
<i>Naval Architecture</i>	1 to 2	1 to 4	1 to 5
<i>Ship's Power Plant</i>	1	1	1
<i>Personnel Management and Ship Master's Business (Fishing)</i>	1-2 and 6	1 to 6	1 to 6
<i>Marine Environmental Studies</i>	1	1	1 to 2
<i>Ship Manoeuvring and Handling</i>	1	1 to 2	1 to 2
<i>Emergency Procedures</i>	1 to 2	1 to 2	1 to 2
<i>Fishing Operations</i>	X	X	X
<i>Communications</i>	1	1	1
Basic Training			
<i>Personal Survival Techniques</i>	X	X	X
<i>Fire prevention and fire fighting</i>	X	X	-
<i>Medical First Aid</i>	X	X	-
<i>Personal Survival and Social Responsibilities</i>	X	X	X
Advanced Fire-fighting	-	X	X
Competence in Medical Care	-	-	X
Proficiency in Survival Craft & Rescue Boats	-	-	X
Safety Officer Training ¹¹ or Fishing Safety	X	X	X
Electronic Navigation Systems (Certificate)	O ¹²	O	O

¹¹ In accordance with Maritime Occupational Safety Regulations, 1994

¹² O = Operational

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Certification	Deck Officer (Fishing)	Skipper (fishing limited waters)	Skipper (fishing unlimited waters)
Communications	1	-	-
Short /Long Range Certificate	X	X	X



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Part 4 – Engine Fishing Vessels requirements

The table below groups certificates available for chief engineer officer (fishing), with the primary qualifications listed in the table. The different CoC's are incorporated are

1. Chief Engineer Officer (<3000 kW fishing)
2. Chief Engineer Officer (fishing)

	Second Engineer (Fishing)	Chief Engineer Officer (Fishing)
Academic requirements	Required Modules	
<i>Applied Marine Science and Mathematics</i>	1 to 2	1 to 2
<i>Electrotechnology</i>	1 to 2	1 to 2
<i>Emergency Procedures</i>	1 to 2	1 to 2
<i>Engineering Drawing</i>	1	1
<i>Engineering Knowledge</i>	1 to 3	1 to 3
<i>Fishing Operations</i>	1to 2	1to 2
<i>General Engineering Science / Applied Mechanics</i>	1 to 2	1 to 2
<i>Heat Engines / Thermodynamics</i>	1 & 3	1 & 3
<i>Naval Architecture</i>	1 to 8 & 11	1 to 8 & 11
<i>Personnel Management and Ship Master's Business</i>	1 to 4	1 to 4
Basic Training		
<i>Personal Survival Techniques</i>	X	X
<i>Fire Prevention and fighting</i>	X	X
<i>Medical First Aid</i>	X	X
<i>Personal Survival and Social Responsibilities</i>	X	X
Advanced Fire-fighting	X	X
Safety Officer Training ¹³	-	X
Proficiency in Survival Craft and Rescue Boats	X	X
Workshop Skills Training	X	-

¹³ In accordance with Maritime Occupational Safety Regulations, 1994

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Part 3 – Deck STCW Convention requirements (for seagoing ships ≥ 25 GT but < 500 GT, excluding fishing vessels)

	Master (<200GT near coastal)	Master (<200GT)	Mate (<500 Near coastal)	Mate (<500GT)	Master (< 500 GT Near Coastal)	Master (<500GT)
Academic requirements	Required Modules					
<i>Chart – work</i>	1 & 2	1 to 3	1 to 3	1 to 3	1 to 5	1 to 5
<i>Celestial Navigation</i>	-	1 & 2	1 & 2	1 & 2	1 & 2	1 to 3
<i>Electronic Navigation Systems.</i>	1 to 2	1 to 2	1 to 2	1 to 3	1 to 2	1 to 3
<i>Naval Architecture</i>	1	1	1 to 3	1 to 3	1 to 5	1 to 5
<i>Cargo Handling & Stowage</i>	-	-	1 to 3	1 to 3	1 to 4	1 to 4
<i>Ship Power Plants</i>	-	-	-	-	1	1 & 2
<i>Personnel Management & Ship Master’s Business</i>	1 & 2	1 to 3	1 to 4	1 to 4	1 to 5	1 to 8
<i>Marine Environmental Studies</i>	1	1 & 2	1	1	1 & 2	1 to 5
<i>Ship Manoeuvring & Handling</i>	1	1	1	1	1 & 2	1 & 2
<i>Emergency Proc.</i>	1	1	1	1	1 & 2	1 & 2
<i>Communications</i>	-	1	1	1	1	1
<i>Applied Marine Science & Maths</i>	-	-	-	-	-	-
Basic Training						
<i>Personal Survival Techniques</i>	X	X	X	X	X	X
<i>Fire prevention & fire fighting</i>	X	X	-	-	-	-
<i>Medical first aid</i>	X	X	X	X	-	-
<i>Personal Survival & Social Responsibilities</i>	X	X	X	X	X	X
Advanced Fire fighting	-	-	X	X	X	X
Medical Care	-	-	-	-	X	X
Survival Craft & Rescue Boat	-	-	X	X	X	X
Able seafarer Deck	-	-	X	X	X	X
Long Range Certificate (Radio)	X	X	-	-	-	-
GMDSS General Operator Certificate	-	-	X	X	X	X
ECDIS	-	-	X	X	X	X
Electronic Navigation Systems (Certificate)	O ¹⁴	O	O	O	O	M ¹⁵
Communications	1	1	-	-	-	-

¹⁴ O = Operational

¹⁵ M = Management

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Part 6 – Engine STCW Convention requirements (for seagoing ships ≥ 50kW and ≥ 25 GT but < 500 GT, excluding fishing vessels)

Certification	Marine Motorman Grade 2	Marine Motorman Grade 1	Marine Motorman Higher Grade
Academic Requirements	Required Modules		
<i>Naval Architecture</i>	1	1 to 2	1 to 4
<i>Personnel Management and Ship Master's Business</i>	1	1 to 3	1 to 4
<i>Engineering Knowledge</i>	1	1	1
<i>Emergency Procedures</i>	1	1	1 to 2
<i>Electrotechnology</i>	-	-	-
<i>Applied Marine Science and Mathematics</i>	-	-	-
<i>Engineering Drawing</i>	-	-	-
<i>General Engineering Science / Applied Mechanics</i>	-	-	-
<i>Heat Engines / Thermodynamics</i>	-	-	-
Basic Training			
<i>Personal Survival Techniques</i>	X	X	X
<i>Fire Prevention and fighting</i>	X	X	X
<i>Medical First Aid at Sea</i>	X	X	X
<i>Personal Survival and Social Responsibilities</i>	X	X	X
Advanced Fire-fighting	-	-	X
Proficiency in Survival Craft and Rescue Boats	-	-	X
Workshop Skills Training	X ¹⁶	X ¹⁷	X ¹⁸

¹⁶ Required to complete Diesel Module 1, Welding Module 1

¹⁷ Required to complete Diesel Module 1, Welding Module 1, Sheet Metal Module 1, Hydraulics Module 1, Pneumatics Module 1 & Refrigeration Module 1

¹⁸ Required to complete all Workshop Skill Training modules

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Part 7 – Deck Port Operations requirements

The table below group's certificates available for Port Operations. The Master (<1600 GT – Port Operations) is included under the Master (Port Operations) requirements

	Skipper (Port Operations)	Master (Port Operations)
Academic requirements	Required Modules	
<i>Chartwork</i>	1	1
<i>Electronic Navigation Systems</i>	1	1 to 2
<i>Naval Architecture</i>	1	1 to 5 & 8
<i>Personnel Management & Ship Master's Business</i>	1 to 2	1 to 4 & 6
<i>Ship Manoeuvring & Handling</i>	1	1 to 2
<i>Emergency Procedures</i>	1	1 to 2
<i>Communications</i>	-	-
Electronic Navigation Systems (Certificate)	O ¹⁹	
Basic Training		
<i>Personal Survival Techniques</i>	X	X
<i>Fire prevention & Fire Fighting</i>	X	X
<i>Medical First Aid</i>	X	X
<i>Personal Safety and Social Responsibility</i>	X	X
Advanced Fire fighting	-	X
Short Range Certificate (SRC)	X	X

¹⁹ O = Operational

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Part 8 – Engine Port Operations requirements

The table below group's certificates available for Port Operations. The Chief Engineer (<750 kW Port Operations) is included under the Chief Engineer (<1500 kW Port Operations) requirements

	Chief Engineer (<1500 kW Port Operations)	Chief Engineer (Port Operations)
Academic Requirements	Required Modules	
<i>General Engineering Science / Applied Mechanics</i>	1	1 to 2
<i>Heat engines / Thermodynamics</i>	1 to 2	1 to 3
<i>Engineering Drawing</i>	1	1
<i>Applied Science</i>	1	1
<i>Electrotechnology</i>	1 to 2	1 to 2
<i>Naval Architecture</i>	1 to 6	1 to 8, 11 & 12
<i>Personnel Management & Ship Masters Business</i>	1 to 4	1 to 4 & 6
<i>Engineering Knowledge</i>	1	1 to 2
Basic Training		
<i>Personal Survival Techniques</i>	X	X
<i>Fire prevention & firefighting</i>	X	X
<i>Medical First Aid</i>	X	X
<i>Personal Safety and Social Responsibility</i>	X	X
Advanced Fire fighting	-	X
Workshop Skills Training	X	-

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Part 9 – Radio Certificates of Competency

	GMDSS General Operator's Certificate	Long Range Certificate	Short Range Certificate
Course Completion Certificate ²⁰	X	X	X
Basic Training			
<i>Personal Survival Techniques</i>	X	-	-
<i>Fire prevention & fire fighting</i>	X	-	-
<i>Medical First Aid</i>	X	-	-
<i>Personal Safety and Social Responsibility</i>	X	-	-

²⁰2020

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Part 10 – Certificates of Proficiency (Deck Ratings)

	Ordinary Seafarer deck	Able seafarer deck	Able seafarer deck (Port Operations)	Able Seafarer deck (fishing)	GPR (Port Operations)	Efficient Cook
Able seafarer deck	-	X	X	X	X	-
Able seafarer engine	-	-	-	-	X	-
Efficient Cook	-	-	-	-	-	X
Ordinary Seafarer Deck	-	X	X	X	X	-
Basic Training						
<i>Personal Survival Techniques</i>	X	X	X	X	X	X
<i>Fire prevention & fire fighting</i>	X	X	X	X	X	X
<i>Medical First Aid</i>	X	X	X	X	X	X
<i>Personal Safety and Social Responsibility</i>	X	X	X	-	X	X
Survival Craft and Rescue Boats	-	X	-	-	-	-
Designated security duties	-	X	-	-	-	-
Safety Officer Training ²¹	-	-	-	-	-	-

²¹ In accordance with the Maritime Occupational Safety Regulations, 1994

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Part 11 – Certificates of Proficiency (Engine Ratings)

	Ordinary Seafarer Engine	Able seafarer engine	Able seafarer engine (port Operations)	Electro-Technical Rating
Able seafarer engine	-	X	X	-
Electro technical rating	-	-	-	X ²²
Ordinary Seafarer Engine	-	X	X	-
Basic Training				
<i>Personal Survival Techniques</i>	X	X	X	X
<i>Fire prevention & fire fighting</i>	X	X	X	X
<i>Medical First Aid</i>	X	X	X	X
<i>Personal Safety and Social Responsibility</i>	X	X	X	X
Survival Craft & Rescue Boats other than Fast Rescue Boats	-	X	-	-
Designated security duties	-	X	-	-
High Voltage	-	-	-	X

²² To have completed at least N4 in electrical engineering or equivalent university qualifications, and workshop skills training.

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Appendix – Engineering subjects requirements until 30 June 2017

1 – Engineer Officer in charge of a watch. STCW Code A - III/1 - (requirements until 30 June 2017)

Study Matrix required for the Engineer Officer Certificate of Competency as per the South African Maritime Qualifications Code.

SAMSA - CODE Subject	N Course Subject	S Course Subject
General Engineering Science / Applied Mechanics Module 1	N4 Fluid Mechanics N4 Mechanotechnics	Fluid Mechanics 2 Mechanics 1
Heat Engines/ Thermodynamics Module 1 & 2	N5 Power Machines	Thermodynamics 2
Drawings Module 1	N3 Engineering Drawings	Drawing 1
Applied Marine Science Module 1	N4 Mathematics	Mathematics 1
Electrotechnology Module 1 & 2	N4 Electrotechnics N3 Industrial Electronics	Electrotechnology 1
Naval Architecture Module 1 to 6	S subject required	Naval Architecture 1
Business Module 1 to 4	S subject required	Legal Knowledge 1(A) or Marine Law 1
Engineering Knowledge Module 1	S subject required	Marine Engineering Knowledge 1(A)

Note:

1. At CPUT the content of the course Marine Engineering Knowledge 1 has been divided into 4 subjects, namely:
 - a. Marine Engineering Knowledge (motor)
 - b. Marine Engineering Knowledge (general)
 - c. Maintenance Engineering 1
 - d. Shipbuilding Technology 1
2. At DUT the Marine Engineering Knowledge 1 course includes all four of the above subjects.

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Ver.2.2 – 28/07/2017	The SAMSA Code – Matrix	GOP 530.03

2 – Chief Engineer Officer < 1 500 kW (Port Operations) - (requirements until 30 June 2017)

Study Matrix required for the Chief Engineer Officer < 1500 kW (Port Operations) certificate of competency as per the South African Maritime Qualifications Code.

SAMSA - CODE Subject	N Course Subject	S Course Subject
General Engineering Science/ Applied Mechanics Module 1	N4 Engineering Science, N4 Mechanotechnics	Fluid Mechanics 2, Mechanics 1
Heat Engines/ Thermodynamics Module 1&2	N5 Power Machines	Thermodynamics 2
Drawings Module 1	N3 Engineering Drawings	Drawing 1
Applied Marine Science Module 1	N4 Mathematics	Mathematics 1
Electrotechnology Module 1&2	N4 Electrotechnics, N3 Industrial Electronics	Electrotechnology 1
Naval Architecture Module 1 to 6	S subject required	Naval Architecture 1
Business Module 1 to 4	S subject required	Legal Knowledge 1(A) or Marine Law 1
Engineering Knowledge Module 1	S subject required	Marine Engineering Knowledge 1 (A)

Note:

1. At CPUT the content of the course Marine Engineering Knowledge 1 has been divided into 4 subjects, namely:
 - a. Marine Engineering Knowledge (motor)
 - b. Marine Engineering Knowledge (general)
 - c. Maintenance Engineering 1
 - d. Shipbuilding Technology 1
2. At DUT the Marine Engineering Knowledge 1 course includes all four of the above subjects.

Version no. - Effective Date	Document	Reference
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3 – Chief Engineer Officer unlimited (Port Operations) - (requirements until 30 June 2017)

Study Matrix for the Chief Engineer Officer (Port Operations) certificate of competency as per the South African Maritime Qualifications Code.

SAMSA - CODE Subject	N Course Subject	S Course Subject
General Engineering Science/ Applied Mechanics Module 1	N4 Engineering Science N4 Mechanotechnics	Fluid Mechanics 2 Mechanics 1
Heat Engines/ Thermodynamics Module 1&2	N5 Power Machines	Thermodynamics 2
Drawings Module 1	N3 Engineering Drawings	Drawing 1
Applied Marine Science Module 1	N4 Mathematics	Mathematics 1
Electrotechnology Module 1&2	N4 Electrotechnics N3 Industrial Electronics	Electrotechnology 1
Naval Architecture Module 1 to 6	S subject required	Naval Architecture 1
Business Module 1 to 4	S subject required	Legal Knowledge 1(A) or Marine Law 1
Engineering Knowledge Module 1	S subject required	Marine Engineering Knowledge 2(A)

Note:

1. At CPUT the content of the course Marine Engineering Knowledge 2 has been divided into 4 subjects, namely:
 - a. Marine Engineering Knowledge (motor)
 - b. Marine Engineering Knowledge (general)
 - c. Maintenance Engineering 2
 - d. Internal Combustion Engines 2
2. At DUT the Marine Engineering Knowledge 2 course includes all four of the above subjects.

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4 – Second engineer < 3 000 kW propulsion power. STCW Code A-III/3 - (requirements until 30 June 2017)

Study Matrix for the Engineer Officer Certificate of Competency as per the South African Maritime Qualifications Code.

SAMSA - CODE Subject	N Course Subject	S Course Subject
General Engineering Science/ Applied Mechanics Module 1 to 2	N4 Engineering Science N4 Mechatronics N5 Mechatronics	Fluid Mechanics 2 Mechanics 1 Mechanics of Machines 2
Heat Engines/ Thermodynamics Module 1 to 3	N5 Power Machines	Thermodynamics 2
Drawings Module 1	N 3 Engineering Drawings	Drawing 1
Applied Marine Science Module 1	N4 Mathematics	Mathematics 1
Electrotechnology Module 1 to 2	N4 Electro technics	Electrotechnology 1
Naval Architecture Module 1 to 6, 7, 8,11 and 12	S subject required	Naval Architecture 1 Naval Architecture 2
Business Module 1 to 4 and 6	S subject required	Legal Knowledge 1(A) or Marine Law 1
Engineering Knowledge Module 1 and 2	S subject required	Marine Engineering Knowledge 2 (A)

Note:

1. At CPUT the content of the course Marine Engineering Knowledge 2 has been divided into 3 subjects, namely
 - a. Marine Engineering Knowledge (motor)
 - b. b. Marine Engineering Knowledge (general)
 - c. c. Maintenance Engineering 2
 - d. d. Internal Combustion Engines 2
2. At DUT the Marine Engineering Knowledge 2 course includes all four of the above subjects.

Version no. - Effective Date	Document	Reference
Ver.2.2 – 28/07/2017	The SAMSA Code – Matrix	GOP 530.03

5 – Second engineer officer. STCW Code A-III/2 - (requirements until 30 June 2017)

Study Matrix for the Engineer Officer Certificate of Competency as per the South African Maritime Qualifications Code.

SAMSA - CODE Subject	N Course Subject	S Course Subject
General Engineering Science/Applied Mechanics Module 1 to 3	N4 Engineering Science, N4 Mechanotechnics, N5 Mechanotechnics, N5 Strength of Materials and Structures N5 Fluid Mechanics	Fluid Mechanics 2 Mechanics 1 Mechanics of Machines 2 Strength of Materials 2 Fluid Mechanics 2
Electronics		Industrial Electronics 2
Heat Engines/ Thermodynamics Module 1 to 5	N5 Power Machines	Thermodynamics 2
Drawings Module 1	N 3 Engineering Drawings	Engineering Drawing 1
Applied Marine Science Module 1 and 3	N4 Mathematics	Mathematics 1
Electrotechnology Module 1 to 3	N5 Electro technics N3 Industrial Electronics	Electrotechnology 2
Naval Architecture Module 1 to 6, 7, 8, 11 and 12	S subject required	Naval Architecture 2
Business Module 1 to 4 and 6	S subject required	Legal Knowledge 1(A and B) or Marine Law 2
Engineering Knowledge Module 1 to 2	S subject required	Marine Engineering Knowledge 2 (A)

Note:

1. At CPUT the content of the course Marine Engineering Knowledge 2 has been divided into 3 subjects, namely:
 - a. Marine Engineering Knowledge (motor)
 - b. Marine Engineering Knowledge (general)
 - c. Maintenance Engineering 2
 - d. Internal Combustion Engines 2
2. At DUT the Marine Engineering Knowledge 2 course includes all four of the above subjects.

Version no. - Effective Date	Document	Reference
Ver.2.2 – 28/07/2017	The SAMSA Code – Matrix	GOP 530.03

6 – Chief engineer officer < 3000 kW propulsion power. Section A-III/3 - (requirements until 30 June 2017)

Study Matrix for the Engineer Officer Certificate of Competency as per the South African Maritime Qualifications Code.

SAMSA - CODE Subject	N Course Subject	S Course Subject
General Engineering Science/ Applied Mechanics Module 1 to 3	N4 Engineering Science N4 Mechanotechnics N6 Mechanotechnics N6 Strength of Materials and Structures N5 Fluid Mechanics	Fluid Mechanics 2 Mechanics 1 Mechanics of Machines 3 Strength of Materials 3 Fluid Mechanics 2
Electronics		Control Systems 2
Heat Engines/ Thermodynamics Module 1 to 5	N6 Power Machines	Thermodynamics 3
Drawings Module 1	N3 Engineering Drawings	Drawing 1
Applied Marine Science Module 1 and 3	N4 Mathematics	Mathematics 1
Electrotechnology Module 1 to 3	N6 Electro technics N3 Industrial Electronics	Electrotechnology 3
Naval Architecture Module 1 to 6, 7, 8,11 and 12	S subject required	Naval Architecture 3
Business Module 1 to 4 and 6 to 7	S subject required	Legal Knowledge 1(A and B) or Marine Law 2
Engineering Knowledge Module 1 to 3	S subject required	Marine Engineering Knowledge 3 (A)

Note:

(A) At CPUT the content of the course Marine Engineering Knowledge 3 has been divided into 4 subjects, namely:

- a. Marine Engineering Knowledge (motor)
- b. Marine Engineering Knowledge (general)
- c. Internal Combustion Engines 3
- d. Steam plant 3

(B) At DUT the Marine Engineering Knowledge 3 course includes all four of the above subjects.

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7 – Chief engineer officer. Section A-III/2 - (requirements until 30 June 2017)

Study Matrix for the Engineer Officer Certificate of Competency as per the South African Maritime Qualifications Code.

SAMSA - CODE Subject	N Course Subject	S Course Subject
General Engineering Science/ Applied Mechanics Module 1 to 3	N4 Engineering Science N4 Mechanotechnics N5 Mechanotechnics N5 Strength of Materials and Structures N5 Fluid Mechanics	Fluid Mechanics 2 Mechanics 1 Mechanics of Machines 2 Strength of Materials 2 Fluid Mechanics 2
Electronics		Industrial Electronics 2
Heat Engines/ Thermodynamics Module 1 to 5	N5 Power Machines	Thermodynamics 2
Drawings Module 1	N 3 Engineering Drawings	Drawing 1
Applied Marine Science Module 1 and 3	N4 Mathematics	Mathematics 1
Electrotechnology Module 1 to 3	N4 Electro technics N5 Electro technics N3 Industrial Electronics	Electrotechnology 1 Electrotechnology 2
Naval Architecture Module 1 to 6, 7, 8,11 and 12	S subject required	Naval Architecture 1 Naval Architecture 2
Business Module 1 to 4 and 6 to 7	S subject required	Legal Knowledge 1(A and B) or Marine Law 2
Engineering Knowledge Module 1 to 3	S subject required	Marine Engineering Knowledge 3 (A)

Note:

1. At CPUT the content of the course Marine Engineering Knowledge 3 has been divided into 4 subjects, namely:
 - a. Marine Engineering Knowledge (motor)
 - b. Marine Engineering Knowledge (general)
 - c. Internal Combustion Engines 3
 - d. Steam plant 3
2. At DUT the Marine Engineering Knowledge 3 course includes all four of the above subjects.

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8 – Electro Technical Rating - (requirements until 30 June 2017)

Study Matrix required for the Electro Technical Rating Certificate of Proficiency as per the South African Maritime Qualifications Code.

SAMSA - CODE Subject	N Course Subject	S Course Subject
Electronics Module 1	S subject required	Electronics 1
Industrial Electronics Module 2	S subject required	Industrial Electronics 2
Control Systems Module 2	S subject required	Control Systems 2
Electrical Machines Module 2	S subject required	Electrical Machines 2

Version no. - Effective Date	Document	Reference
Ver.2.2 – 28/07/2017	The SAMSA Code – Matrix	GOP 530.03

9 – Electro Technical Officer - (requirements until 30 June 2017)

Study Matrix required for the Electro Technical Officer Certificate of Competency as per the South African Maritime Qualifications Code.

SAMSA - CODE Subject	N Course	Subject
Electronics Module 2	S subject required	Electronics 2
Network Systems Module 2	S subject required	Network Systems 2
Power Electronics Module 3	S subject required	Power Electronics 3
Electrical Machines Module 3	S subject required	Electrical Machines 3
Process Instrumentation Module 2	S subject required	Process Instrumentation 2
Electrical Protection Module 3	S subject required	Electrical Protection 3

Version no. - Effective Date	Document	Reference
Ver.2.2 – 28/07/2017	The SAMSA Code – Matrix	GOP 530.03

10 - Marine Motorman Grade 2 - (requirements until 30 June 2017)

Study Matrix required for the Engineer Officer Certificate of Competency as per the South African Maritime Qualifications Code.

SAMSA - CODE Subject	N Course Subject	S Course Subject
Naval Architecture Module 1	S subject required	Naval Architecture 1
Emergency Procedures Module 1	S subject required	Emergency Procedures 1
Personnel Management and Ship Business Module 1 to 3	S subject required	Personnel Management and Ship Business 1
Engineering Knowledge Module 1	S subject required	Engineering Knowledge 1

NOTE:

All examinations are to be oral with a continuous assessment for the course.

Version no. - Effective Date	Document	Reference
Ver.2.2 – 28/07/2017	The SAMSA Code – Matrix	GOP 530.03

11 – Marine Motorman Grade 1 - (requirements until 30 June 2017)

Study Matrix required for the Engineer Officer Certificate of Competency as per the South African Maritime Qualifications Code.

SAMSA - CODE Subject	N Course Subject	S Course Subject
Naval Architecture Module 1 to 4	S subject required	Naval Architecture 1
Emergency Procedures Module 1 & 2	S subject required	Emergency Procedures 2
Personnel Management and Ship Business Module 1 to 4	S subject required	Personnel Management and Ship Business 1
Engineering Knowledge Module 1	S subject required	Engineering Knowledge 1

NOTE:

All examinations are to be oral with a continuous assessment for the course.

Version no. - Effective Date	Document	Reference
Ver.2.2 – 28/07/2017	The SAMSA Code – Matrix	GOP 530.03

12 – Marine Motorman Higher Grade - (requirements until 30 June 2017)

Study Matrix required for the Engineer Officer Certificate of Competency as per the South African Maritime Qualifications Code.

SAMSA - CODE Subject	N Course Subject	S Course Subject
Naval Architecture Module 1 to 4	S subject required	Naval Architecture 1
Emergency Procedures Module 1 & 2	S subject required	Emergency Procedures 2
Personnel Management and Ship Business Module 1 to 4	S subject required	Personnel Management and Ship Business 1
Engineering Knowledge Module 1	S subject required	Engineering Knowledge 1

NOTE:

All examinations are to be written, followed by an oral at SAMSA.

Version no. - Effective Date	Document	Reference
Ver.2.2 – 28/07/2017	The SAMSA Code – Matrix	GOP 530.03

13 – Second Engineer (Fishing) and Chief Engineer (Fishing) - (requirements until 30 June 2017)

Study Matrix required for the Engineer Officer Certificate of Competency as per the South African Maritime Qualifications Code.

SAMSA - CODE Subject	N Course Subject	S Course Subject
Naval Architecture Module 1 to 6	S subject required	Naval Architecture 1
Electrotechnology Module 1 & 2	S subject required	Electrotechnology 1
Applied Marine Science Module 1	S subject required	Mathematics 1
Engineering Drawing Module 1	S subject required	Engineering Drawing 1
General Engineering Science/ Applied Mechanics	S subject required	Applied Mechanics 1
Heat Engines/ Thermodynamics	S subject required	Thermodynamics 1
Fishing safety 1 & 2	S subject required	Fishing Safety
Emergency Procedures Module 1 & 2	S subject required	Emergency Procedures 2
Personnel Management and Ship Business Module 1 to 4	S subject required	Personnel Management and Ship Business 1
Marine Engineering Knowledge Module 1	S subject required	Marine Engineering Knowledge 1

Note:

1. At CPUT the content of the course Marine Engineering Knowledge 1 has been divided into 4 subjects, namely
 - a. Marine Engineering Knowledge (motor)
 - b. Marine Engineering Knowledge (general)
 - c. Maintenance Engineering 1
 - d. Shipbuilding Technology 1
2. At DUT the Marine Engineering Knowledge 1 course includes all four of the above subjects.

Version no. - Effective Date	Document	Reference
Ver.2.2 – 28/07/2017	The SAMSA Code – Matrix	GOP 530.03