

## NSQC QUALIFICATION FILE

Approved in 20<sup>th</sup> NSQC Meeting, 09<sup>th</sup> April 2018

### CONTACT DETAILS OF THE BODY SUBMITTING THE QUALIFICATION FILE

Directorate General of Training (DGT)  
Government of India, Ministry of Skill Development and Entrepreneurship,  
1st and 2nd Floor, CIRTES Building  
Next to Pusa ITI, Pusa Campus  
New Delhi - 110012

#### Name and address of submitting body:

Directorate General of Training (DGT)  
Government of India, Ministry of Skill Development and Entrepreneurship,  
1st and 2nd Floor, CIRTES Building  
Next to Pusa ITI, Pusa Campus  
New Delhi - 110012

#### Name and contact details of individual dealing with the submission

Name: Shri Deepankar Mallick

Position in the organisation: Deputy Director General (C & P)

Address if different from above:

Tel number(s): 011-25847035

E-mail address: deepankar.mallick60@nic.in

#### List of documents submitted in support of the Qualifications File

1. Competency-based curriculum (Annexure 1)
2. Advertisements of different organisations for posts relevant to NTC in the trade

#### Model Curriculum to be added which will include the following:

- **Indicative list of tools/equipment to conduct the training:** Enclosed with curricula
- **Trainers qualification:** Indicated in the curriculum
- **Lesson Plan:** All NCVT curricula are designed indicating specific practical to be carried out during training along with details of trade theory. Based on this the concerned instructor prepares the Lesson Plan with support of Reference Books and IMPs developed by DGT.
- **Distribution of training duration into theory/practical/OJT component:** Indicated in the curriculum.

## NSQC QUALIFICATION FILE

Approved in 20<sup>th</sup> NSQC Meeting, 09<sup>th</sup> April 2018

### SUMMARY

1	<b>Qualification Title</b>	'Vessel Navigator'
2	<b>Qualification Code, if any</b>	DGT/1090
3	<b>NCO code and occupation</b>	8350.0100 - Serang, Deck/Bosun 8350.0300 - Seaconny/OS (Ordinary Seaman) 8350.0400 - Lascar/OS (Ordinary Seaman) 8350.0500 - Driver, Launch/Tug Master 8350.0600 - Boatman 8350.0700 - Rudderman 8350.0800 - Oarsman 8350.9900 - Ships' Deck Ratings, Barge Crews and Boatmen, Other
	<b>Nature and purpose of the qualification (Please specify whether qualification is short term or long term)</b>	National Council for Vocational Training (NCVT) (long term qualification)
5	<b>Body/bodies which will award the qualification</b>	<b>National Council for Vocational Training (NCVT)</b> affiliates the ITIs as per DGT guidelines issued from time to time.
6	<b>Body which will accredit providers to offer courses leading to the qualification</b>	National Council for Vocational Training (NCVT)
7	<b>Whether accreditation/affiliation norms are already in place or not, if applicable (if yes, attach a copy)</b>	Yes. The accreditation/ affiliation norms for all training providers are as per DGT guidelines issued from time to time with approval of NCVT.
8	<b>Occupation(s) to which the qualification gives access</b>	Vessel Navigator has a wide scope of Employability ranging from self-employment, contractual employment to Industrial jobs. On successful completion of this course, the candidates shall be gainfully employed in the industries for following occupations: <ul style="list-style-type: none"> <li>• Serang, Deck/Bosun</li> <li>• Seaconny/OS (Ordinary Seaman)</li> <li>• Lascar/OS (Ordinary Seaman)</li> <li>• Driver, Launch/Tug Master</li> <li>• Boatman</li> <li>• Rudderman</li> <li>• Oarsman</li> <li>• Ships' Deck Ratings, Barge Crews and Boatmen, Other</li> </ul>
9	<b>Job description of the occupation</b>	The individual in this job is responsible for navigation of fishing vessel in the sea,

## NSQC QUALIFICATION FILE

Approved in 20<sup>th</sup> NSQC Meeting, 09<sup>th</sup> April 2018

		seamanship, chart work practical, marine meteorology, safety of life at sea, use, care and maintenance of various life saving, fire fighting appliances used onboard a fishing vessel. Key tasks include preparation for the voyage, casting off from the jetty, ensuring the tide conditions observing weather forecast, chart preparation for passage planning, manoeuvring the vessel, efficient watch keeping, carry out anchor work & anchor watch duty, carry out preparation for fishing operation, perform on hygienic fish handling and preservation.		
10	<b>Licensing requirements</b>	N/A		
11	<b>Statutory and Regulatory requirement of the relevant sector (documentary evidence to be provided)</b>	N/A		
12	<b>Level of the qualification in the NSQF</b>	Level 5		
13	<b>Anticipated volume of training/learning required to complete the qualification</b>	<b>Sl. No</b>	<b>Course Element</b>	<b>Notional Training Hours</b>
		1	Professional Skill (Trade Practical)	2158
		2	Professional Knowledge (Trade Theory)	504
		3	Workshop Calculation & Science	168
		4	Engineering Drawing	252
		5	Employability Skills	110
		6	Library & Extracurricular Activities	168
		7	Project Work	320
		8	Revision & Examination	480
	<b>Total</b>		<b>4160</b>	
14	<b>Indicative list of training tools required to deliver this qualification</b>	As per Annexure enclosed in the curriculum		
15	<b>Entry requirements and/or recommendations and minimum age</b>	Passed 10th Class with Science and Mathematics under 10+2 system of Education or its equivalent.		
16	<b>Progression from the qualification (Please show Professional and academic</b>	<ul style="list-style-type: none"> <li>Can join Apprenticeship programme in different types of industries leading to National Apprenticeship certificate</li> </ul>		

## NSQC QUALIFICATION FILE

Approved in 20<sup>th</sup> NSQC Meeting, 09<sup>th</sup> April 2018

	<b>progression)</b>	<b>(NAC).</b>	
<b>17</b>	<b>Arrangements for the Recognition of Prior learning (RPL)</b>	<ol style="list-style-type: none"> <li>1. At present the students who have passed 10th class with minimum 3 years' experience in relevant field can appear for NCVT theory and practical semester examination directly.</li> <li>2. The students who have passed SCVT examination in 'Vessel Navigator trade can also appear for the NCVT Examination in the relevant semester and Trade directly.</li> </ol>	
<b>18</b>	<b>International comparability where known (research evidence to be provided)</b>	<ol style="list-style-type: none"> <li>1. Existence of any official document suggesting the comparability of the qualification with the qualifications in other countries is not known.</li> <li>2. However, ITI passed out trainees are getting employment in many Gulf countries, European countries, Australia, New Zealand, Singapore etc.</li> </ol>	
<b>19</b>	<b>Date of planned review of the qualification.</b>	March 2023	
<b>20</b>	<b>Formal structure of the qualification</b>		
	<b>Mandatory components</b>		
	<b>Title of component and identification code/NOSs/Learning outcomes</b>	<b>Estimated size (learning hours)</b>	<b>Level</b>
(i)	Calculate plane parallel sailing to find course and distance between two positions.	160	4
(ii)	Calculate set and drift current from DR position to fix.	80	5
(iii)	Calculate course, distance and position arrived using Mercator sailing method.	160	5
(iv)	Illustrate altitude corrections.	80	5
(v)	Distinguish various fishing methods and select suitable fishing gears according to the fish resources.	40	5
(vi)	Plan and Fabricate specific fishing gears by selecting suitable material.	80	5
(vii)	Recognize basic design concept of fishing gear and select suitable fishing gear, technique to carryout fishing.	240	5

## NSQC QUALIFICATION FILE

Approved in 20<sup>th</sup> NSQC Meeting, 09<sup>th</sup> April 2018

Semester – II			
(viii)	Use different navigational equipment and examine the compass error ( <i>Different important navigational equipment – sextant, azimuth mirror, pelorus, chronometer.</i> )	160	5
(ix)	Choose various parameters to determine position of celestial body. (various parameters:- GHA, LHA, Longitude)	240	5
(x)	Examine the breaking strength, safe work load of ropes, blocks and tackles in marine use and apply the same during execution in various situations.	80	4
(xi)	Plan & perform fabrication of fishing gears especially trawls by various techniques. ( <i>Various techniques:- TED and BRD</i> )	80	4
(xii)	Design and construction of fishing gears.	240	5
(xiii)	Identify fishing gear accessories.	40	5
(xiv)	Collect data on fishing from different source and analyse the same to perform navigation. ( <i>Different sources – Fishing vessels, dock yards, net making factory</i> )	80	5
Semester – III			
(xv)	Perform dry docking and maintain fishing vessel including painting schedule.	80	5
(xvi)	Plan and make vessel ready for certificate inspection.	80	5
(xvii)	Recognize and act on different critical situation during on board navigation. ( <i>Different critical situation - accidents, collision, man overload, leak, bad weather preparation, aground.</i> )	80	5
(xviii)	Analyze the various aspect of ship stability to prepare for voyage. ( <i>Various aspect – displacement, effect of density on draft and displacement, dead weight, load</i> )	360	5
(xix)	Recognize various subsistent fishing gears to operate the same for commercial fishing. ( <i>Various</i>	160	5

## NSQC QUALIFICATION FILE

Approved in 20<sup>th</sup> NSQC Meeting, 09<sup>th</sup> April 2018

	<i>subsistent fishing gears:-Pole and line, troll line, changadom, raft, bag bet, dol net, shore seine, Chinese net, cast net, trammel net, tangle net)</i>		
(xx)	Locate the marine fishery resources of India and apply fishing techniques for the exploitation of marine fishery resources.	80	5
<b>Semester – IV</b>			
(xxi)	Calculate by chronometer and Intercept method to find direction of position line and position.	80	5
(xxii)	Distinguish types of anchor, anchoring procedure and demonstrate anchoring of vessel.	80	5
(xxiii)	Distinguish different emergency situation and observe standard guidelines during voyage. <i>(Different emergency situation – Abandoning, distress signals, storm signals)</i>	160	5
(xxiv)	Analyze different advance ship stability features and arrange loading, discharging, shifting cargo onboard for stability. <i>(Different advance ship stability features – Centre of Gravity, Centre of buoyancy, transverse stability, list, heel.)</i>	160	5
(xxv)	Explain conservation, management of marine fishery, handling of fish on board and comply such in day to day work.	120	5
(xxvi)	Illustrate fish preservation technique, avoid spoilage and set up appropriate technique for preservation and maintain quality of fish. <i>(Appropriate fishing technique – chilling, freezing, salting, curing, sun drying, canning and smoking.)</i>	200	5
(xxvii)	<b>Revision, Project work and Examination</b>	760	
	<b>Sub Total (A)</b>	<b>4160</b>	
	<b>Optional components</b>	<b>N/A (All components are compulsory)</b>	

**NSQC QUALIFICATION FILE****Approved in 20<sup>th</sup> NSQC Meeting, 09<sup>th</sup> April 2018**

	<b>Title of component and identification code/NOSs/ Learning outcomes</b>	<b>Estimated size (learning hours)</b>	<b>Level</b>
	<b>Sub Total (B)</b>		

<b><u>Total (A+B)</u></b>	<b><u>4160</u></b>	
---------------------------	--------------------	--

NSQC Approved

**SECTION 1**  
**ASSESSMENT**

21	<p><b>Body/Bodies which will carry out assessment:</b> National Council for Vocational Training (NCVT)</p>														
22	<p><b>How will RPL assessment be managed and who will carry it out?</b></p> <ol style="list-style-type: none"> <li>1. At present the students who have passed 10th class with minimum 3 years' experience can appear for NCVT theory and practical semester examination directly.</li> <li>2. The students who have passed SCVT examination in 'Vessel Navigator' trade can also appear for the NCVT Examination in the relevant semester and Trade directly. NCVT will carry out the assessment and State Directorates advertise in newspapers for informing the prospective candidates.</li> </ol>														
23	<p><b>Describe the overall assessment strategy and specific arrangements which have been put in place to ensure that assessment is always valid, reliable and fair and show that these are in line with the requirements of the NSQF.</b></p> <p><b>(1) Assessment process:</b></p> <p>The assessment for the semester-based qualification is carried out by conducting formative assessments, and end-of-semester examinations. The internal assessments for theory subjects and practical are conducted by the concerned instructors for evaluating the knowledge and skill acquired by trainees and the behavioural transformation of the trainees. This internal assessment is primarily carried out by collecting evidence of competence gained by the trainees by evaluating them at work based on assessment criteria, asking questions and initiating formative discussions to assess understanding and by evaluating records and reports, and sessional marks are awarded to them. Theory and practical examinations are conducted in Trade theory, Workshop Calculation &amp; Science, Engineering Drawing and Employability Skills. The question papers for the theory Examinations contain objective type questions. Trade practical examinations are conducted by the respective State Governments. However, the question papers for the Trade practical are prepared by NCVT. The marking pattern and distribution of marks for the qualification are as under:</p> <table border="1" data-bbox="320 1709 1401 2072"> <thead> <tr> <th colspan="3">Marking Pattern</th> </tr> <tr> <th>Sl. No.</th> <th>Subject for the trade test</th> <th>Maximum marks for the each subject</th> </tr> </thead> <tbody> <tr> <td>a)</td> <td>Practical</td> <td>300</td> </tr> <tr> <td>b)</td> <td>Trade Theory</td> <td rowspan="2">200 Objective type Written test of 200 marks (Trade Theory 150 marks &amp;</td> </tr> <tr> <td>c)</td> <td>Employability Skills</td> </tr> </tbody> </table>	Marking Pattern			Sl. No.	Subject for the trade test	Maximum marks for the each subject	a)	Practical	300	b)	Trade Theory	200 Objective type Written test of 200 marks (Trade Theory 150 marks &	c)	Employability Skills
Marking Pattern															
Sl. No.	Subject for the trade test	Maximum marks for the each subject													
a)	Practical	300													
b)	Trade Theory	200 Objective type Written test of 200 marks (Trade Theory 150 marks &													
c)	Employability Skills														

		Employability Skills 50 marks)
d)	Work shop Calculation and Science.	100
e)	Engineering Drawing	Objective Type Written test of 100 marks (Engineering Drawing 50 marks & Work shop Calculation and Science 50 marks)
f)	Internal assessment	100
TOTAL:		700

**(2) Minimum pass marks:**

The minimum pass percentage for practical is 60% & minimum pass percentage of theory subjects is 40%. For the purposes of determining the overall result, 25% weightage is applied to the result of each semester examination.

**(3) Testing and certifications for the course:**

- OMR sheet based question paper.
- A panel of expert paper setters, who are graduates in the concerned field with minimum 5-7 years experience, is prepared for setting question papers for the Trade. The panel is vetted by the Member Secretary, NCVT.
- Paper setters are appointed from the panel after the approval of the competent authority for setting the question paper.
- The question papers are then moderated by the Board of Moderation to see if the paper is set as per the requirement and syllabus.
- The manuscripts of the moderated question papers are sent to Government Printing Presses for printing.
- Printed question papers, packed in sealed covers, are despatched to Banks/Police Stations for keeping in safe custody.
- The question papers are handed over to the Chairman/Principal of the Testing Centre two hours before the commencement of the Examination.
- An Examination Board consisting of representatives of industry/Employer/State Government are set up to supervise and monitor the conduct of Examinations at every Centre.
- Theory and practical Examinations are carried out with invigilators/examiners with the overall supervision of the Examination Board.
- Examiners called for evaluation of practical should have minimum technical qualification of a Diploma in the respective engineering field. However, when diploma holders not available, the qualification is

suitably relaxed.

- Examiners for practical Examinations are appointed preferably from Polytechnics/ Engineering colleges/ Industry of repute/ Government Departments or from amongst retired qualified personnel possessing requisite qualifications and sufficient experience in the trade/discipline.
- Each State Directorate prepares a panel of Examiners according to the norms as mentioned above and the Examiners are appointed from the panel.
- Flying squads from State Governments as well as the Central Government are constituted to check malpractices during the conduct of Examinations.
- OMR based answer sheets are evaluated by the third party evaluator only. Third party evaluator is selected for three years by open bidding process.
- Evaluation of every practical examination is carried out by the concerned examiner (from industry/ polytechnics) with the overall supervision of the Examination Board in a free and fair manner as per the assessment criteria.
- Till 2014, the marks were compiled by the State Governments as per NCVT guidelines and the results were declared by the State Governments. At present, the marks are compiled by NCVT on its portal [www.ncvtmis.gov.in](http://www.ncvtmis.gov.in) and the results are declared by the State Governments.
- The successful trainees are awarded National Trade Certificates.

### **Overall assessment strategy:**

Assessment of the qualification evaluates trainees to show that they can integrate knowledge, skills and values for carrying out relevant tasks as per the defined assessable outcomes and assessment criteria. The trainees may choose the preferred language for assessment. The underlying principle of assessment is fairness and transparency. While assessing the trainee, assessor is directed to assess as per the defined assessment criteria against the assessable outcomes. The evidence of the competence acquired by the trainees can be obtained by conducting theory and practical examinations, observing the trainees at work, asking questions and initiating formative discussions to assess understanding and evaluating records and reports. The ultimate objective of the assessment is to assess the candidates as per the defined assessment criteria for the assessable/ learning outcomes.

### **Specific Arrangements for assessment:**

- Assessment is outcome-based.
- There are formative and summative assessments in Theory and Practical.
- Assessment is carried out in Trade theory, Trade Practical, Workshop Calculation and Science, Engineering Drawing and Employability Skills.

	<ul style="list-style-type: none"> <li>• While Trade Theory and Trade Practical are used for assessing Trade-related jobs, Workshop Calculation and Science is used to test trainee’s numerical skills, Drawing is used to test the ability of the trainee to draw and read sketches and Employability skills is used to test the communication and language skills of the trainee.</li> <li>• In addition to demonstration of theory and practical knowledge, trainees get a chance to present total personality.</li> </ul> <p><b>Quality assurance activities:</b></p> <ul style="list-style-type: none"> <li>• Question papers are set by external paper setters</li> <li>• Evaluation of Theory Examinations is done by third-part agency. Third party evaluator is selected for three years by open bidding process.</li> <li>• Trade Practical is examined by External Examiner (as explained above).</li> </ul>
--	---

Please attach most relevant and recent documents giving further information about assessment and/or RPL.

Give the titles and other relevant details of the document(s) here. Include page references showing where to find the relevant information.

## **ASSESSMENT EVIDENCE**

**Complete a grid for each component as listed in “Formal structure of the the qualification” in the Summary.**

*NOTE: this grid can be replaced by any part of the qualification documentation which shows the same information – i.e. Learning Outcomes to be assessed, assessment criteria and the means of assessment.*

### **24. Assessment evidences**

**Title of Component:** Vessel Navigator

### **GENERIC LEARNING/ ASSESSABLE OUTCOME:**

<b>Outcomes to be assessed/NOSs to be assessed</b>	<b>Assessment criteria for the outcome</b>
1. Recognize & comply safe working practices, environment regulation and housekeeping.	1. 1. Follow and maintain procedures to achieve a safe working environment in line with occupational health and safety regulations and requirements.
	1. 2. Recognize and report all unsafe situations according to site policy.
	1. 3. Identify and take necessary precautions on fire and safety hazards and report according to site policy and procedures.

## NSQC QUALIFICATION FILE

Approved in 20<sup>th</sup> NSQC Meeting, 09<sup>th</sup> April 2018

	<p>1. 4. Identify, handle and store / dispose off dangerous/unsalvageable goods and substances according to site policy and procedures following safety regulations and requirements.</p> <p>1. 5. Identify and observe site policies and procedures in regard to illness or accident.</p> <p>1. 6. Identify safety alarms accurately.</p> <p>1. 7. Report supervisor/ Competent of authority in the event of accident or sickness of any staff and record accident details correctly according to site accident/injury procedures.</p> <p>1. 8. Identify and observe site evacuation procedures according to site policy.</p> <p>1. 9. Identify Personal Productive Equipment (PPE) and use the same as per related working environment.</p> <p>1. 10. Identify basic first aid and use them under different circumstances.</p> <p>1. 11. Identify different fire extinguisher and use the same as per requirement.</p> <p>1. 12. Identify environmental pollution &amp; contribute to avoidance of same.</p> <p>1. 13. Take opportunities to use energy and materials in an environmentally friendly manner</p> <p>1. 14. Avoid waste and dispose waste as per procedure</p> <p>1. 15. Recognize different components of 5S and apply the same in the working environment.</p>
2. Understand, explain different mathematical calculation & science in the field of study including basic electrical and	2.1 Explain concept of basic science related to the field such as Material science, Mass, weight, density, speed, velocity, heat & temperature, force, motion, pressure, heat treatment, centre of gravity, friction.
apply in day to day work. <i>[Different mathematical calculation &amp; science -Work, Power &amp; Energy, Algebra, Geometry &amp; Mensuration, Trigonometry, Heat &amp; Temperature, Levers &amp; Simple machine, graph, Statistics, Centre of gravity, Power transmission, Pressure]</i>	<p>2.1 Measure dimensions as per drawing</p> <p>2.2 Use scale/ tapes to measure for fitting to specification.</p> <p>2.3 Comply given tolerance.</p> <p>2.4 Prepare list of appropriate materials by interpreting detail drawings and determine quantities of such materials.</p> <p>2.5 Ensure dimensional accuracy of assembly by using different instruments/gauges.</p> <p>2.6 Explain basic electricity, insulation &amp; earthing.</p>
3. Interpret specifications, different engineering drawing and apply for different application in the field of work. <i>[Different engineering</i>	<p>3. 1. Read &amp; interpret the information on drawings and apply in executing practical work.</p> <p>3. 2. Read &amp; analyse the specification to ascertain the material requirement, tools, and machining /assembly /maintenance parameters.</p>

## NSQC QUALIFICATION FILE

Approved in 20<sup>th</sup> NSQC Meeting, 09<sup>th</sup> April 2018

<p><i>drawing-Geometrical construction, Dimensioning, Layout, Method of representation, Symbol, scales, Different Projections, Machined components &amp; different thread forms, Assembly drawing, Sectional views, Estimation of material, Electrical &amp; electronic symbol]</i></p>	<p>3. 3. Encounter drawings with missing/unspecified key information and make own calculations to fill in missing dimension/parameters to carry out the work.</p>
<p>4. Select and ascertain measuring instrument and measure dimension of components and record data.</p>	<p>4.1 Select appropriate measuring instruments such as micrometers, verniercalipers, dial gauge, bevel protector and height gauge (as per tool list). 4.2 Ascertain the functionality &amp; correctness of the instrument. 4.3 Measure dimension of the components &amp; record data to analyse the with given drawing/measurement.</p>
<p>5. Explain the concept in productivity, quality tools, and labour welfare legislation and apply such in day to day work to improve productivity &amp; quality.</p>	<p>5.1 Explain the concept of productivity and quality tools and apply during execution of job. 5.2 Understand the basic concept of labour welfare legislation and adhere to responsibilities and remain sensitive towards such laws. 5.3 Knows benefits guaranteed under various acts</p>
<p>6. Explain energy conservation, global warming and pollution and contribute in day to day work by optimally using available resources.</p>	<p>6.1 Explain the concept of energy conservation, global warming, pollution and utilize the available recourses optimally &amp; remain sensitive to avoid environment pollution. 6.2 Dispose waste following standard procedure.</p>
<p>7. Explain personnel finance, entrepreneurship and manage/organize related task in day to day work for personal &amp; societal growth.</p>	<p>7. 1.Explain personnel finance and entrepreneurship. 7. 2.Explain role of Various Schemes and Institutes for self-employment i.e. DIC, SIDA, SISI, NSIC, SIDO, Idea for financing/ non financing support agencies to familiarizes with the Policies /Programmes &amp; procedure &amp; the available scheme. 7. 3.Prepare Project report to become an entrepreneur for submission to financial institutions.</p>
<p>8. Plan and organize the work related to the occupation.</p>	<p>8. 1.Use documents, drawings and recognize hazards in the work site. 8. 2.Plan workplace/ assembly location with due consideration to operational stipulation 8. 3.Communicate effectively with others and plan project tasks 8. 4.Assign roles and responsibilities of the co-trainees for</p>

## NSQC QUALIFICATION FILE

Approved in 20<sup>th</sup> NSQC Meeting, 09<sup>th</sup> April 2018

	execution of the task effectively and monitor the same.
--	---

### Specific Assessable Outcome:

LEARNING/ASSESSABLE OUTCOME	ASSESSMENT CRITERIA
<b><u>SEMESTER-I</u></b>	
9. Calculate plane parallel sailing to find course and distance between two positions.	9.1 Ascertain the given latitude and understand whether it is North or South.
	9.2 Ascertain the given Longitude and understand whether it is East or West.
	9.3 Do the calculation as per the formula.
	9.4 Find the course and distance as per the difference of Lat and Long.
10. Calculate set and drift current from DR position to fix.	10. 1 Understand the present dead reckoning position and the present fixed position.
	10. 2 Do the calculation as per the formula and find out the direction and speed of current.
	10. 3 Result obtained by calculation is the set of current and the distance is the drift of current.
11. Calculate course, distance and position arrived using Mercator sailing method.	11. 1. Understand the principles of Mercator sailing method
	11. 2. Obtain the meridional parts table from the nautical table
	11. 3. Obtain the difference of Lat and long and name them according to the direction
	11. 4. Apply the Mercator sailing formula to find course and distance to reach destination
12. Illustrate altitude corrections.	12. 1. Determine the error of sextant
	12. 2. Take the altitude of celestial body
	12. 3. Obtain the correct GMT for the above observations
	12. 4. Obtain nautical almanac of that year and extract corrections and apply to the altitude of celestial body
13. Plan and Fabricate specific fishing gears by selecting suitable material.	14. 1. Design and fabricate a gill net of suitable material
	14. 2. Design and fabricate a trawl of suitable material
	14. 3. Design and fabricate a purse seine of suitable material
	14. 4. Design and fabricate a long line of suitable material
14. Distinguish various fishing methods and select suitable fishing gears according to the	13. 1. Identify demersal fishery resources and selection of suitable fishing gears for exploitation
	13. 2. Identify pelagic fishery resources and selection of suitable fishing gears for exploitation

## NSQC QUALIFICATION FILE

Approved in 20<sup>th</sup> NSQC Meeting, 09<sup>th</sup> April 2018

fish resources.	13. 3. Identify deep sea and oceanic resources and select suitable fishing gear for exploitation
15. Recognize basic design concept of fishing gear and select suitable fishing gear, technique to carryout fishing.	15. 1. Identify the gear to exploit fishery resources from the different water depth.
	15. 2. Identify the suitable fishing gear to exploit shoaling pelagic fishes
	15. 3. Identify the suitable fishing gear to exploit deep sea resources
	15. 4. Identify the suitable fishing gear to exploit demersal resources
	15. 5. Identify the suitable fishing gear to exploit predatory fishes.
<b><u>SEMESTER-II</u></b>	
16. Use different navigational equipment and examine the compass error ( <i>Different important navigational equipment – sextant, azimuth mirror, pelorus, chronometer.</i> )	16. 1. Arrange Marine magnetic compass
	16. 2. Also azimuthal mirror, pelorus
	16. 3. Arrange the above equipments in such a manner in order to take compass bearing
	16. 4. Take compass bearing of different objects and find the difference between the true bearing
	16. 5. Find the difference and apply variation of that places in order to find the deviation and compass error
17. Choose various parameters to determine position of celestial body. (various parameters:- GHA, LHA, Longitude)	17.1 .Obtain current year nautical almanac
	17.2 .Make sure the sextant is free from error or find out the error if any.
	17.3 . Observe the altitude of celestial body by the sextant and find GHA, LHA and longitude of the ship by calculation.
	17.4 . Chronometer also kept ready without any error to obtain GMT
18. Examine the breaking strength, safe work load of ropes, blocks and tackles in marine use and apply the same during execution in various situations.	18. 1. Collect various types of ropes
	18. 2. The ropes are used for marine purpose and determine the size of rope
	18. 3. . As per the theory and formula find out the breaking strength and safe working load of different rope.
	18. 4. . Select different types of blocks and tackle for various purpose and rig the same for different purpose
19. Plan & perform fabrication of fishing gears especially trawls by various techniques ( <i>TED and BRD</i> )	19. 1. Design and Fabrication of bottom trawl
	19. 2. Fabrication of midwater trawl as per plan on resources
	19. 3. Fabrication of shrimp trawl
	19. 4. Fabrication of trawl with TED
	19. 5. Fabrication of trawl with BRDs

## NSQC QUALIFICATION FILE

Approved in 20<sup>th</sup> NSQC Meeting, 09<sup>th</sup> April 2018

20. Design and construction of fishing gears	20. 1. Design and construct Trawl, Purse seine, Gill net and Longline
	20. 2. Identify factors effecting fishing gear design
	20. 3. Carryout Joining of netting, Seaming, Stapling of two sections, Lacing, Mounting, Reeving.
21. Identify fishing gear accessories.	21.1 Identification of suitable accessories for rigging to various fishing gears
	21.2 Select suitable accessories for trawl
	21.3 Select suitable accessories for purse seine
	21.4 Select suitable accessories for longline
	21.5 Select suitable accessories for gillnet
22. Collect data on fishing from different source and analyse the same to perform navigation. <i>(Different sources – Fishing vessels, dock yards, net making factory)</i>	22.1 Collect the data about the traditional fishing
	22.2 Collect the data about different fishing vessel operated in fishing harbour
	22.3 Collect the data about local dockyards/boat building yards
	22.4 Collect the data about different types of webbings fabricated and used for fishing (From net making factory)
	22.5 Collect the data about the implementation fishing rules and regulation (MFRAs)
<b><u>SEMESTER-III</u></b>	
23. Perform dry docking and maintain fishing vessel including painting schedule.	23.1 Dry docking a vessel is very large process of work to carry out maintenance and repair of vessel and machinery
	23.2 Repair work order in consultation with Chief engineer and to be submitted to the dock authority
	23.3 Obtain the day and time for dry docking the vessel in consultation with the dock authority
	23.4 Obtain necessary tools and paints for the preliminary work
	23.5 Before the work starts surveyor may be inspect the vessel and his suggestions may be obtained
24. Plan and make vessel ready for certificate inspection.	24.1 Service all necessary life saving appliances
	24.2 Service all fire fighting appliances and replace if necessary
	24.3 Make sure that all communication and navigational equipments are working properly.
	24.4 Ensure that all navigational lights and signals are working properly.
	24.5 Carry out all other important works noted by the surveyor
25. Recognize and act on different critical situation	25.1. Mock drill of various situations are to be created and demonstration in this regard may be conducted.

## NSQC QUALIFICATION FILE

Approved in 20<sup>th</sup> NSQC Meeting, 09<sup>th</sup> April 2018

during on board navigation. ( <i>Different critical situation - accidents, collision, man overload, leak, bad weather preparation, aground.</i> )	25.2.The above drill may be carried out on board vessel during sailing as well as when the vessel at harbour.
	25.3.Comply the safety procedure and rules while performing the above operations.
	25.4.Dispose all the used and unwanted items as per the ship standing order.
	25.5.Refill or recharge fire fighting equipments and the date/month/year of recharge may be indicated
26. Analyze the various aspect of ship stability to prepare for voyage. ( <i>Various aspect – displacement, effect of density on draft and displacement, dead weight, load</i> )	26.1 Study and analyse hydrostatic particulars of the ship supplied by the shipyard.
	26.2 Understand the manoeuvring capability of the ship.
	26.3 As per the hydrostatic particulars study the present displacements
	26.4 Ascertain the load displacement, dead weight available , dead weight aboard etc.
27. Recognize various subsistent fishing gears to operate the same for commercial fishing. ( <i>Various subsistent fishing gears:-Pole and line, troll line, changadom, raft, bag bet, dol net, shore seine, Chinese net, cast net, trammel net, tangle net etc</i> )	27.1 Survey and study of cast net and Chinese net
	27.2 Survey and study of pole & line and trolling
	27.3 Survey and study of <i>Changadam</i> and raft
	27.4 Survey and study of bag net and dol net
	27.5 Survey and study of shore seine and trammel net
28. Locate the marine fishery resources and apply specific fishing techniques for their exploitation	28.1 Locate fishing ground with the help of fish finding equipments
	28.2 Locate fishing ground with the help of remote sensing data
	28.3 Locate fishing ground with the help of exploratory survey and data collected by fisheries research organizations
	28.4 Locate fishing ground with the help of commercial fishermen
	28.5 Locate fishing ground with own fishing experience
<b><u>SEMESTER-IV</u></b>	
29. Calculate by chronometer and Intercept method to find direction of position line and position.	29.1 Understand starting procedure of chronometer
	29.2 Wind the chronometer
	29.3 Enter the chronometer error in the log book
	29.4 Calculate the GMT time while taking altitude of Sun, Moon, Star
	29.5 Calculate azimuth, intercept and direction of position line and draw the position line in the chart

## NSQC QUALIFICATION FILE

Approved in 20<sup>th</sup> NSQC Meeting, 09<sup>th</sup> April 2018

30. Distinguish types of anchor, anchoring procedure and demonstrate anchoring of vessel.	30.1 Identify the anchor to be dropped and its working condition
	30.2 Check the hydraulic winch to be used for anchoring
	30.3 Check to be made for the break and bow stopper
	30.4 Choose appropriate place for anchoring the vessel and calculate the cable to be released
	30.5 During the above work all safety measures to be taken
31. Distinguish different emergency situation and observe standard guidelines during voyage. <i>(Different emergency situation – Abandoning, distress signals, storm signals)</i>	31.1 Carry out voyage preparation and inform the crew about sailing program
	31.2 Inform the crew about the muster list to be followed during emergency as well as distress situation.
	31.3 Follow the traffic rules while navigating the channel and open sea
	31.4 Always comply with the international regulation for preventing collision at sea.
	31.5 Always observe other bulletin and radio communication.
32. Analyze different advance ship stability features and arrange loading, discharging, shifting cargo onboard for stability. <i>(Different advance ship stability features – Centre of Gravity, Centre of buoyancy, transverse stability, list, heel.)</i>	32.1 Study and analyse hydrostatic particulars of the ship supplied by the shipyard.
	32.2 Understand the manoeuvring capability of the ship.
	32.3 As per the hydrostatic particulars study the present displacements
	32.4 Ascertain the load displacement, dead weight available, dead weight aboard etc.
	32.5 After loading the cargo always observe that there is no list appeared in the vessel if any lists arrange the cargo in such a manner to remove list.
33. Explain conservation and management of marine fishery resources; hygienic handling of fish on board and its implementation in day to day work.	33.1 Identification and use of by-catch reduction devices
	33.2 Code of Conduct for Responsible Fisheries (CCRF)
	33.3 Knowledge about the uniform ban period
	33.4 Hygienic handling of catch onboard fishing vessel
	33.5 Handling of longline catch to maintain <i>Sashimi</i> grade quality
34. Illustrate various fish preservation technique to avoid spoilage; appropriate preservation technique to maintain quality of fish and fishery products. <i>(Appropriate preservation technique – chilling, freezing, salting, curing, sun drying, canning and smoking.)</i>	34.1 Preservation technique using ice
	34.2 Preservation technique using refrigeration
	34.3 Knowledge and application of preservation technique such as salt curing, sun drying and smoking
	34.4 Application of canning process for fish preservation

NSQC Approved

**Means of assessment 1**

Assessment will be evidence based comprising the following:

- Job carried out in labs/workshop
- Record book/ daily diary
- Answer sheet of assessment
- Viva-voce
- Progress chart
- Attendance and punctuality
- Assignment
- Project work

**Means of assessment 2**

Add boxes as required.

**Pass/Fail**

The minimum pass percentage is 40% for each Theory Examination and 25% for each part/section of the Examination separately, and 60% marks for each Trade practical Examination.

## NSQC QUALIFICATION FILE

Approved in 20<sup>th</sup> NSQC Meeting, 09<sup>th</sup> April 2018

### SECTION 2

#### 25. EVIDENCE OF LEVEL

##### OPTION A

Title/Name of qualification/component: Vessel Navigator		Level: 5	
NSQF Domain	Outcomes of the Qualification/Component	How the outcomes relates to the NSQF level descriptors	NSQF Level
Process	<p><b>Requires Well Developed Skill</b></p> <ul style="list-style-type: none"> <li>• Calculate plane parallel sailing to find course and distance between two positions.</li> <li>• Calculate set and drift current from DR position to fix.</li> <li>• Calculate course, distance and position arrived using Mercator sailing method.</li> <li>• Illustrate altitude corrections.</li> <li>• Distinguish various fishing methods and select suitable fishing gears according to the fish resources.</li> <li>• Plan and Fabricate specific fishing gears by selecting suitable material.</li> <li>• Recognize basic design concept of fishing gear and select suitable fishing gear, technique to carryout fishing.</li> <li>• Use different navigational equipment and examine the compass error (<i>Different important navigational equipment – sextant, azimuth mirror, pelorus, chronometer.</i>)</li> </ul>	<p>The learner requires to demonstrate a well-developed skill for example 'Plan and Fabricate specific fishing gears by selecting suitable material. Recognize basic design concept of fishing gear and select suitable fishing gear, technique to carryout fishing' as indicated in the learning outcomes to achieve the tolerance levels and accuracy demanded as per the job.</p>	5

## NSQC QUALIFICATION FILE

Approved in 20<sup>th</sup> NSQC Meeting, 09<sup>th</sup> April 2018

Title/Name of qualification/component: Vessel Navigator		Level: 5	
NSQF Domain	Outcomes of the Qualification/Component	How the outcomes relates to the NSQF level descriptors	NSQF Level
	<ul style="list-style-type: none"> <li>Choose various parameters to determine position of celestial body. (various parameters:- GHA, LHA, Longitude)</li> <li>Examine the breaking strength, safe work load of ropes, blocks and tackles in marine use and apply the same during execution in various situations.</li> <li>Plan &amp; perform fabrication of fishing gears especially trawls by various techniques. (<i>Various techniques:- TED and BRD</i>)</li> <li>Design and construction of fishing gears.</li> <li>Identify fishing gear accessories.</li> <li>Collect data on fishing from different source and analyse the same to perform navigation. (<i>Different sources – Fishing vessels, dock yards, net making factory</i>)</li> <li>Perform dry docking and maintain fishing vessel including painting schedule.</li> <li>Plan and make vessel ready for certificate inspection.</li> <li>Recognize and act on different critical situation during on board navigation. (<i>Different critical situation - accidents, collision, man overload, leak, bad weather preparation, aground.</i>)</li> <li>Analyze the various aspect of ship stability to prepare for voyage. (<i>Various aspect –</i></li> </ul>	<p>The learner requires to apply clear choice of procedures in familiar context as indicated in the learning outcomes.</p> <p>“Calculate by chronometer and Intercept method to find direction of position line and position”.</p> <p>and</p> <p>“Analyze different advance ship stability features and arrange loading, discharging, shifting cargo onboard for stability. (<i>Different advance ship stability features – Centre of Gravity, Centre of buoyancy, transverse stability, list, heel.</i>)”</p> <p>In all these learning outcomes the learner has to apply ones knowledge and decide what needs to be done to either meet the client’s requirement or identify a fault and decide how to rectify it or plan as per requirements and resources available.</p>	

**NSQC QUALIFICATION FILE**

Approved in 20<sup>th</sup> NSQC Meeting, 09<sup>th</sup> April 2018

Title/Name of qualification/component: Vessel Navigator		Level: 5	
NSQF Domain	Outcomes of the Qualification/Component	How the outcomes relates to the NSQF level descriptors	NSQF Level
	<p><i>displacement, effect of density on draft and displacement, dead weight, load)</i></p> <ul style="list-style-type: none"> <li>Recognize various subsistent fishing gears to operate the same for commercial fishing. <i>(Various subsistent fishing gears:-Pole and line, troll line, changadom, raft, bag bet, dol net, shore seine, Chinese net, cast net, trammel net, tangle net).</i></li> <li>Locate the marine fishery resources of India and apply fishing techniques for the exploitation of marine fishery resources.</li> <li>Calculate by chronometer and Intercept method to find direction of position line and position.</li> <li>Distinguish types of anchor, anchoring procedure and demonstrate anchoring of vessel.</li> <li>Distinguish different emergency situation and observe standard guidelines during voyage. <i>(Different emergency situation – Abandoning, distress signals, storm signals)</i></li> <li>Analyze different advance ship stability features and arrange loading, discharging, shifting cargo onboard for stability. <i>(Different advance ship stability features – Centre of Gravity, Centre of buoyancy,</i></li> </ul>	Hence NSQF Level is 5 for this descriptor	

## NSQC QUALIFICATION FILE

Approved in 20<sup>th</sup> NSQC Meeting, 09<sup>th</sup> April 2018

Title/Name of qualification/component: Vessel Navigator			Level: 5
NSQF Domain	Outcomes of the Qualification/Component	How the outcomes relates to the NSQF level descriptors	NSQF Level
	<p><i>transverse stability, list, heel.)</i></p> <ul style="list-style-type: none"> <li>• Explain conservation, management of marine fishery, handling of fish on board and comply such in day to day work.</li> <li>• Illustrate fish preservation technique, avoid spoilage and set up appropriate technique for preservation and maintain quality of fish. (<i>Appropriate fishing technique – chilling, freezing, salting, curing, sun drying, canning and smoking.</i>)</li> </ul>		
Professional knowledge	<p><b>Knowledge of facts in a field of work or study</b></p> <ul style="list-style-type: none"> <li>• Description of hand tools, Safety precautions, care and maintenance and material from which they are made.</li> <li>• The shape of the earth. Poles, equator, meridians, Parallel of latitude</li> <li>• Life Saving Appliances</li> <li>• Fire Fighting Principle, fire prevention and fire fighting appliances</li> <li>• Marine Magnetic Compass, Compass points</li> </ul>	<p>The learner requires to demonstrate knowledge of facts, principles, processes and general concepts, in a field of work or study which is Shipping related to different types of Vessel Navigation, types of Marine instruments, compass and fishing equipments. Properties of fishing gear materials Physical, Chemical and Biological properties, Design Process, Factors effecting fishing gear design etc.</p> <p>The learner requires to demonstrate knowledge</p>	5

## NSQC QUALIFICATION FILE

Approved in 20<sup>th</sup> NSQC Meeting, 09<sup>th</sup> April 2018

Title/Name of qualification/component: Vessel Navigator		Level: 5	
NSQF Domain	Outcomes of the Qualification/Component	How the outcomes relates to the NSQF level descriptors	NSQF Level
	<ul style="list-style-type: none"> <li>• Classification of fishing gear materials- Natural and synthetic fibres, Yarn numbering system</li> <li>• Construction details of twines and ropes - Stages in twisting operation</li> <li>• Active fishing gear, Passive fishing gear and miscellaneous fishing gear</li> </ul> <p><b>Knowledge of Principles and general concepts in a field of work or study</b></p> <ul style="list-style-type: none"> <li>• Shaping of netting Shaping of netting by hand braiding – Baiting, Creasing, Fly mesh (Single and Double)</li> <li>• SEXTANT: Parts of sextant, principle of sextant, adjustable errors</li> <li>• Chronometer: error, purpose Duties of officer while at sea and anchor</li> <li>• Vegetable, Synthetic and Wire ropes, Care and maintenance, Breaking strength, Safe working load</li> <li>• Properties of fishing gear materials Physical, Chemical and Biological properties</li> <li>• Design Process, Factors effecting fishing gear design, Design</li> <li>• Thimble, Shackle, Swivel, Otter Boards,</li> </ul>	<p>of navigation and fishing gear knowledge. Study the different Poles, equator, meridians, Parallel of latitude, specification and their types.</p> <p>Hence NSQF Level is 5 for this descriptor</p>	

## NSQC QUALIFICATION FILE

Approved in 20<sup>th</sup> NSQC Meeting, 09<sup>th</sup> April 2018

Title/Name of qualification/component: Vessel Navigator		Level: 5	
NSQF Domain	Outcomes of the Qualification/Component	How the outcomes relates to the NSQF level descriptors	NSQF Level
	<p>Floats, Sinkers, G-link assembly, Kelly's eye, Stopper link</p> <p><b>Knowledge of processes in a field of work or study</b></p> <ul style="list-style-type: none"> <li>• Dry docking procedure, Surface preparation , Painting schedules</li> <li>• The use and care of life saving appliances including handling characteristic</li> <li>• Precaution while fishing, Voyage preparation</li> <li>• Effect of density on draft and displacement Fresh Water Allowance</li> <li>• Load lines and related problems</li> <li>• Design and Construction of Fishing Gear, Factors effecting fishing gear design</li> <li>• Anchor works: Stock and stockless anchors, Anchor cable, Anchoring procedure</li> <li>• Abandoning procedure, Distress signals, Storm signals, IALA Buoyage system</li> <li>• Transverse static stability , Stable , Unstable , Natural equilibrium</li> <li>• Responsible Fishing, By-catch Reduction Devices (BRD) Square mesh window</li> <li>• Organoleptic Assessment of Fish Quality</li> </ul>		

**NSQC QUALIFICATION FILE**

Approved in 20<sup>th</sup> NSQC Meeting, 09<sup>th</sup> April 2018

Title/Name of qualification/component: Vessel Navigator		Level: 5	
NSQF Domain	Outcomes of the Qualification/Component	How the outcomes relates to the NSQF level descriptors	NSQF Level
	Fish Preservation on board Chilling and Freezing		
Professional skill	<ul style="list-style-type: none"> <li>• Calculate plane parallel sailing to find course and distance between two positions.</li> <li>• Calculate set and drift current from DR position to fix.</li> <li>• Calculate course, distance and position arrived using Mercator sailing method.</li> <li>• Illustrate altitude corrections.</li> <li>• Distinguish various fishing methods and select suitable fishing gears according to the fish resources.</li> <li>• Plan and Fabricate specific fishing gears by selecting suitable material.</li> <li>• Recognize basic design concept of fishing gear and select suitable fishing gear, technique to carryout fishing.</li> <li>• Use different navigational equipment and examine the compass error (<i>Different important navigational equipment – sextant, azimuth mirror, pelorus, chronometer.</i>)</li> <li>• Choose various parameters to determine position of celestial body. (various parameters:- GHA, LHA, Longitude)</li> </ul>	<p>The learning outcomes for example</p> <p>‘Recognize various subsistent fishing gears to operate the same for commercial fishing. (Various subsistent fishing gears:-Pole and line, troll line, changadom, raft, bag bet, dol net, shore seine, Chinese net, cast net, trammel net, tangle net)’</p> <p>and</p> <p>‘Use different navigational equipment and examine the compass error (<i>Different important navigational equipment – sextant, azimuth mirror, pelorus, chronometer.</i>)’</p> <p>require cognitive and practical skills to accomplish tasks that involve understanding requirements; then as per requirements deciding which operations/procedure/tools will achieve desired result; planning the sequence of operations to maximum effectiveness; constantly checking and reviewing plan, etc., all of which involve problem solving and decision making.</p>	5

## NSQC QUALIFICATION FILE

Approved in 20<sup>th</sup> NSQC Meeting, 09<sup>th</sup> April 2018

Title/Name of qualification/component: Vessel Navigator		Level: 5	
NSQF Domain	Outcomes of the Qualification/Component	How the outcomes relates to the NSQF level descriptors	NSQF Level
	<ul style="list-style-type: none"> <li>Examine the breaking strength, safe work load of ropes, blocks and tackles in marine use and apply the same during execution in various situations.</li> <li>Plan &amp; perform fabrication of fishing gears especially trawls by various techniques. (<i>Various techniques:- TED and BRD</i>)</li> <li>Design and construction of fishing gears.</li> <li>Identify fishing gear accessories.</li> <li>Collect data on fishing from different source and analyse the same to perform navigation. (<i>Different sources – Fishing vessels, dock yards, net making factory</i>)</li> <li>Perform dry docking and maintain fishing vessel including painting schedule.</li> <li>Plan and make vessel ready for certificate inspection.</li> <li>Recognize and act on different critical situation during on board navigation. (<i>Different critical situation - accidents, collision, man overload, leak, bad weather preparation, aground.</i>)</li> <li>Analyze the various aspect of ship stability to prepare for voyage. (<i>Various aspect – displacement, effect of density on draft and displacement, dead weight, load</i>)</li> <li>Recognize various subsistent fishing gears</li> </ul>	Hence NSQF Level is 5 for this descriptor	

## NSQC QUALIFICATION FILE

Approved in 20<sup>th</sup> NSQC Meeting, 09<sup>th</sup> April 2018

Title/Name of qualification/component: Vessel Navigator		Level: 5	
NSQF Domain	Outcomes of the Qualification/Component	How the outcomes relates to the NSQF level descriptors	NSQF Level
	<p>to operate the same for commercial fishing. (Various subsistent fishing gears:-Pole and line, troll line, changadom, raft, bag bet, dol net, shore seine, Chinese net, cast net, trammel net, tangle net)</p> <ul style="list-style-type: none"> <li>• Locate the marine fishery resources of India and apply fishing techniques for the exploitation of marine fishery resources.</li> <li>• Calculate by chronometer and Intercept method to find direction of position line and position.</li> <li>• Distinguish types of anchor, anchoring procedure and demonstrate anchoring of vessel.</li> <li>• Distinguish different emergency situation and observe standard guidelines during voyage. (Different emergency situation – Abandoning, distress signals, storm signals)</li> <li>• Analyze different advance ship stability features and arrange loading, discharging, shifting cargo onboard for stability. (Different advance ship stability features – Centre of Gravity, Centre of buoyancy, transverse stability, list, heel.)</li> <li>• Explain conservation, management of marine fishery, handling of fish on board</li> </ul>		

## NSQC QUALIFICATION FILE

Approved in 20<sup>th</sup> NSQC Meeting, 09<sup>th</sup> April 2018

Title/Name of qualification/component: Vessel Navigator		Level: 5	
NSQF Domain	Outcomes of the Qualification/Component	How the outcomes relates to the NSQF level descriptors	NSQF Level
	<p>and comply such in day to day work.</p> <ul style="list-style-type: none"> <li>Illustrate fish preservation technique, avoid spoilage and set up appropriate technique for preservation and maintain quality of fish. (<i>Appropriate fishing technique – chilling, freezing, salting, curing, sun drying, canning and smoking.</i>)</li> </ul>		
Core skill	<p><b>Desired Mathematical Skills</b></p> <ul style="list-style-type: none"> <li>Measure dimensions as per drawing</li> <li>Ensure dimensional accuracy of assembly by using different instruments/gauges.</li> <li>Measure dimension of the components &amp; record data to analyse the with given drawing/measurement</li> <li>Mark as per specification applying desired mathematical calculation and observing standard procedure.</li> <li>Measure all dimensions in accordance with standard specifications and tolerances.</li> </ul> <p><b>Understanding of social/political</b></p> <ul style="list-style-type: none"> <li>Understand and explain the concept in productivity, quality tools, and labour welfare legislation and apply such in day to day work to improve productivity &amp; quality.</li> </ul>	<p>The learning outcomes for example 'Measure dimension of the components &amp; record data' and 'Mark as per specification' display the learning outcomes where the learner needs to display desired mathematical skill; understanding of social, political; and some skill of collecting and organising information, communication.</p> <p>Hence NSQF Level is 5 for this descriptor</p>	5

## NSQC QUALIFICATION FILE

Approved in 20<sup>th</sup> NSQC Meeting, 09<sup>th</sup> April 2018

Title/Name of qualification/component: Vessel Navigator		Level: 5	
NSQF Domain	Outcomes of the Qualification/Component	How the outcomes relates to the NSQF level descriptors	NSQF Level
	<ul style="list-style-type: none"> <li>• Explain energy conservation, global warming and pollution and contribute in day to day work by optimally using available resources.</li> <li>• Explain personnel finance, entrepreneurship and manage/organize related task in day to day work for personal &amp; societal growth.</li> </ul> <p><b>Organising information and communication</b> Interpret &amp; use company and technical communication</p> <ul style="list-style-type: none"> <li>• Conduct appropriate and target oriented discussions with higher authority and within the team.</li> <li>• Present facts and circumstances, possible solutions &amp; use English special terminology.</li> <li>• Resolve disputes within the team</li> <li>• Conduct written communication.</li> </ul>		
Responsibility	<ul style="list-style-type: none"> <li>• Calculate plane parallel sailing to find course and distance between two positions.</li> <li>• Calculate set and drift current from DR position to fix.</li> </ul>	The role of Vessel Navigator is independently responsible to perform the work as per specifications followed by analysis of what needs to be done based on their understanding of	

## NSQC QUALIFICATION FILE

Approved in 20<sup>th</sup> NSQC Meeting, 09<sup>th</sup> April 2018

Title/Name of qualification/component: Vessel Navigator		Level: 5	
NSQF Domain	Outcomes of the Qualification/Component	How the outcomes relates to the NSQF level descriptors	NSQF Level
	<ul style="list-style-type: none"> <li>• Calculate course, distance and position arrived using Mercator sailing method.</li> <li>• Illustrate altitude corrections.</li> <li>• Distinguish various fishing methods and select suitable fishing gears according to the fish resources.</li> <li>• Plan and Fabricate specific fishing gears by selecting suitable material.</li> <li>• Recognize basic design concept of fishing gear and select suitable fishing gear, technique to carryout fishing.</li> <li>• Use different navigational equipment and examine the compass error (<i>Different important navigational equipment – sextant, azimuth mirror, pelorus, chronometer.</i>)</li> <li>• Choose various parameters to determine position of celestial body. (various parameters:- GHA, LHA, Longitude)</li> <li>• Examine the breaking strength, safe work load of ropes, blocks and tackles in marine use and apply the same during execution in various situations.</li> <li>• Plan &amp; perform fabrication of fishing gears especially trawls by various techniques. (<i>Various techniques:- TED and BRD</i>)</li> <li>• Design and construction of fishing gears.</li> </ul>	<p>various vessels, navigation equipments, principles and standards to achieve desired outcome. This is indicated in all the learning outcomes.</p> <p>Hence NSQF Level is 5 for this descriptor.</p>	

## NSQC QUALIFICATION FILE

Approved in 20<sup>th</sup> NSQC Meeting, 09<sup>th</sup> April 2018

Title/Name of qualification/component: Vessel Navigator		Level: 5	
NSQF Domain	Outcomes of the Qualification/Component	How the outcomes relates to the NSQF level descriptors	NSQF Level
	<ul style="list-style-type: none"> <li>• Identify fishing gear accessories.</li> <li>• Collect data on fishing from different source and analyse the same to perform navigation. (<i>Different sources – Fishing vessels, dock yards, net making factory</i>)</li> <li>• Perform dry docking and maintain fishing vessel including painting schedule.</li> <li>• Plan and make vessel ready for certificate inspection.</li> <li>• Recognize and act on different critical situation during on board navigation. (<i>Different critical situation - accidents, collision, man overload, leak, bad weather preparation, aground.</i>)</li> <li>• Analyze the various aspect of ship stability to prepare for voyage. (<i>Various aspect – displacement, effect of density on draft and displacement, dead weight, load</i>)</li> <li>• Recognize various subsistent fishing gears to operate the same for commercial fishing. (<i>Various subsistent fishing gears:-Pole and line, troll line, changadom, raft, bag bet, dol net, shore seine, Chinese net, cast net, trammel net, tangle net</i>)</li> <li>• Locate the marine fishery resources of India and apply fishing techniques for the exploitation of marine fishery resources.</li> </ul>		

## NSQC QUALIFICATION FILE

Approved in 20<sup>th</sup> NSQC Meeting, 09<sup>th</sup> April 2018

Title/Name of qualification/component: Vessel Navigator		Level: 5	
NSQF Domain	Outcomes of the Qualification/Component	How the outcomes relates to the NSQF level descriptors	NSQF Level
	<ul style="list-style-type: none"> <li>• Calculate by chronometer and Intercept method to find direction of position line and position.</li> <li>• Distinguish types of anchor, anchoring procedure and demonstrate anchoring of vessel.</li> <li>• Distinguish different emergency situation and observe standard guidelines during voyage. (<i>Different emergency situation – Abandoning, distress signals, storm signals</i>)</li> <li>• Analyze different advance ship stability features and arrange loading, discharging, shifting cargo onboard for stability. (<i>Different advance ship stability features – Centre of Gravity, Centre of buoyancy, transverse stability, list, heel.</i>)</li> <li>• Explain conservation, management of marine fishery, handling of fish on board and comply such in day to day work.</li> <li>• Illustrate fish preservation technique, avoid spoilage and set up appropriate technique for preservation and maintain quality of fish. (<i>Appropriate fishing technique – chilling, freezing, salting, curing, sun drying, canning and smoking.</i>)</li> </ul>		

**NSQC QUALIFICATION FILE**Approved in 20<sup>th</sup> NSQC Meeting, 09<sup>th</sup> April 2018**OPTION B**

Title/Name of qualification/component: Enter the title here number			Level: Add level
NSQF Domain	Key requirements of the job role	How the job role relates to the NSQF level descriptors	NSQF Level
Process			
Professional knowledge			
Professional skill			
Core skill			
Responsibility			

**SECTION 3**

**EVIDENCE OF NEED**

<p><b>26</b></p>	<p><b>What evidence is there that the qualification is needed? What is the estimated uptake of this qualification and what is the basis of this estimate?</b></p> <table border="1" data-bbox="339 488 1401 1473"> <thead> <tr> <th data-bbox="339 488 627 629">Basis</th> <th data-bbox="627 488 818 629">In case of SSC</th> <th data-bbox="818 488 1401 629">In case of other Awarding Bodies (Institutes under Central Ministries and states departments)</th> </tr> </thead> <tbody> <tr> <td data-bbox="339 629 627 790">Need of the qualification</td> <td data-bbox="627 629 818 790"></td> <td data-bbox="818 629 1401 790">The proposed qualification is running in the system for last few decades and passed out candidates are engaged in various related industries.</td> </tr> <tr> <td data-bbox="339 790 627 1193">Industry Relevance</td> <td data-bbox="627 790 818 1193"></td> <td data-bbox="818 790 1401 1193">The job role defined for the qualification is as per the National Qualification of Occupation 2015 which is developed by Employment Directorate under the ministry of Labour and Employment in collaboration with different industry partners and as per ILO guidelines. This justifies the qualification is very much relevance for industry.</td> </tr> <tr> <td data-bbox="339 1193 627 1355">Usage of the qualification</td> <td data-bbox="627 1193 818 1355"></td> <td data-bbox="818 1193 1401 1355">The Proposed qualification is running in ITI system across the country successfully over the period of time.</td> </tr> <tr> <td data-bbox="339 1355 627 1473">Estimated uptake</td> <td data-bbox="627 1355 818 1473"></td> <td data-bbox="818 1355 1401 1473">The present seating capacity is approximately 189</td> </tr> </tbody> </table>	Basis	In case of SSC	In case of other Awarding Bodies (Institutes under Central Ministries and states departments)	Need of the qualification		The proposed qualification is running in the system for last few decades and passed out candidates are engaged in various related industries.	Industry Relevance		The job role defined for the qualification is as per the National Qualification of Occupation 2015 which is developed by Employment Directorate under the ministry of Labour and Employment in collaboration with different industry partners and as per ILO guidelines. This justifies the qualification is very much relevance for industry.	Usage of the qualification		The Proposed qualification is running in ITI system across the country successfully over the period of time.	Estimated uptake		The present seating capacity is approximately 189
Basis	In case of SSC	In case of other Awarding Bodies (Institutes under Central Ministries and states departments)														
Need of the qualification		The proposed qualification is running in the system for last few decades and passed out candidates are engaged in various related industries.														
Industry Relevance		The job role defined for the qualification is as per the National Qualification of Occupation 2015 which is developed by Employment Directorate under the ministry of Labour and Employment in collaboration with different industry partners and as per ILO guidelines. This justifies the qualification is very much relevance for industry.														
Usage of the qualification		The Proposed qualification is running in ITI system across the country successfully over the period of time.														
Estimated uptake		The present seating capacity is approximately 189														
<p><b>27</b></p>	<p><b>Recommendation from the concerned Line Ministry of the Government/Regulatory Body. To be supported by documentary evidences.</b></p> <p>This qualification is run by Ministry of Skill Development and Entrepreneurship and different industries under the related line ministry are also generally consulted before finalizing the curricula.</p>															
<p><b>28</b></p>	<p><b>What steps were taken to ensure that the qualification(s) does (do) not duplicate already existing or planned qualifications in the NSQF? Give justification for presenting a duplicate qualification</b></p> <p>The qualification is originally designed and approved by NCVT for the</p>															

## NSQC QUALIFICATION FILE

Approved in 20<sup>th</sup> NSQC Meeting, 09<sup>th</sup> April 2018

	Craftsmen Training Scheme and is in existence for the last 60 years. NCVT has been entrusted with the responsibilities of prescribing standards and curricula for craftsmen training, advising the Government of India on the overall policy and programmes, conducting All India Trade Tests and awarding National Trade Certificates.
29	<p><b>What arrangements are in place to monitor and review the qualification(s)? What data will be used and at what point will the qualification(s) be revised or updated? Specify the review process here</b></p> <ul style="list-style-type: none"><li>• Mentor Council (MC) for the Production and Manufacturing sector was formed in 2014 to review the curriculum of this qualification under the sector.</li><li>• CSTARI, the research wing of DGT, reviews and updates the qualification, in consultation with industries and other stakeholders, on a regular basis by conducting trade committee meetings.</li><li>• DGT will keep on doing continuous comparative study in the trade by referring to relevant upcoming qualifications in the National Qualifications Register (NQR) and relevant sectors.</li></ul>

Please attach most relevant and recent documents giving further information about any of the topics above.

Give the titles and other relevant details of the document(s) here. Include page references showing where to find the relevant information.

### **SECTION 4**

#### **EVIDENCE OF PROGRESSION**

30	<p><b>What steps have been taken in the design of this or other qualifications to ensure that there is a clear path to other qualifications in this sector?</b></p> <p><b><i>Show the career map here to reflect the clear progression</i></b></p> <ul style="list-style-type: none"><li>• Qualifying trainee will obtain an NCVT Certificate in Vessel Navigator trade which gives the following options of progression to the trainee:<ul style="list-style-type: none"><li>i) National Apprenticeship Certificate or</li><li>ii) Entrepreneur.</li></ul></li></ul>
----	---

Please attach most relevant and recent documents giving further information about any of the topics above.

Give the titles and other relevant details of the document(s) here. Include page references showing where to find the relevant information.