

# NSQF QUALIFICATION FILE GUIDANCE

Version 6: Draft of 08 March 2016

**NSDA Reference**

*To be added by NSDA*

## CONTACT DETAILS OF THE BODY SUBMITTING THE QUALIFICATION FILE

### **Name and address of submitting body:**

West Bengal State Council of Technical & Vocational Education and Skill Development  
Karigari Bhavan(5<sup>th</sup> Floor), Plot-B/7, Action Area-III  
New Town, Kolkata-700160

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

**Name: Sri Rathindra Nath Bandyopadhyaya**

**Position in the organisation: Chairman, Board of Studies and Skilling**

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

1. Curriculum and Course Content
2. MoM with Industries/ Employers to establish need of the qualification
3. Assessment strategy

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## SUMMARY

<b>Qualification Title</b>	<b>2/3 WHEELER MECHANIC/TECHNICIAN</b>
<b>Qualification Code</b>	STC-AUR/NSQF-2017/801
<b>Nature and purpose of the qualification</b>	Short term Certificate Course To become self-employed i.e. entrepreneurs or wage employed under Automobile Service centres
<b>Body/bodies which will award the qualification</b>	West Bengal State Council of Technical & Vocational Education and Skill Development
<b>Body which will accredit providers to offer courses leading to the qualification</b>	Committee on Accreditation under the West Bengal State Council of Technical & Vocational Education and Skill Development
<b>Body/bodies which will carry out assessment of learners</b>	Board of Examination under the West Bengal State Council of Technical & Vocational Education and Skill Development
<b>Occupation(s) to which the qualification gives access</b>	ASSISTANT TECHNICIAN (2/3 WHEELER)
<b>Licensing requirements</b>	<b>YES, DRIVING LICENCE FOR 2/3 WHEELER from RTA (REGIONAL TRANSPORT AUTHORITY) (licence to be obtained by the trainee himself/herself personally.)</b>
<b>Level of the qualification in the NSQF</b>	Level 3
<b>Anticipated volume of training/learning required to complete the qualification</b>	650 hours
<b>Entry requirements and/or recommendations</b>	Preferably Class VIII pass
<b>Progression from the qualification</b>	Job Progression ASSISTANT TECHNICIAN → JUNIOR TECHNICIAN → SENIOR TECHNICIAN → SUPERVISOR Academic progression 2/3 Wheeler Technician Vocational course/ITI in Automobile Engineering
<b>Planned arrangements for the Recognition of Prior learning (RPL)</b>	RPL will consist of four stages 1. Counselling- To inform, advise and guide the candidates regarding RPL 2. Pre-Assessment- To assess the current competencies of the candidates and identifying the gap between the full qualification and current competencies. 3. Orientation & Bridge Training- To train the candidates for bridging the gap. 4. Final assessment & Certification- To assess the candidate for full qualification and certify.
<b>International comparability where known</b>	N/A
<b>Date of planned review of the qualification.</b>	Every 3 years

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<b>Formal structure of the qualification</b>			
After completion of course and after 1 years of workshop experience the passed out trainee can work as a Junior Technician and after that with appropriate experience, the person can work as a Senior Technician			
Title of component and identification code.	Mandatory/ Optional	Estimated size (learning hours)	Level
<p><b><u>I. Theory</u></b> Theory component of the course is to develop relevant basic technical information &amp; knowledge about Servicing and Maintenance of different types of 2/3 wheelers.</p>	Mandatory	100	3
<p><b><u>II. Practical</u></b> Practical component of the course is to impart relevant basic technical skills to perform diagnostic services and trouble shoot problems related to various mechanisms of 2/3 wheelers including accessories.</p>	Mandatory	450	3
<p><b><u>III. Employability Skills</u></b> Employability Skills component of the course is to impart Soft skills which include Communication Skills, Behaviour, IT literacy, Entrepreneurship Skills, Safety, Hygiene etc.</p>	Mandatory	100	3
<b>Total (I+II+III)</b>		<b>650</b>	

Curriculum Document is attached in Annexure-1.

Assessment Strategy Component wise distribution of marks is given in the Annexure No. 2

MoM attached in Annexure-3

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## **SECTION 1** **ASSESSMENT**

### **Body/Bodies which will carry out assessment:**

Board of Examination under West Bengal State Council of Technical & Vocational Education & Skill Development, constituted under the ACT XXVI of 2013 under Department of Technical Education, Training & Skill Development, Govt. of West Bengal

### **How will RPL assessment be managed and who will carry it out?**

RPL will consist of four stages

1. Counselling- To inform, advise and guide the candidates regarding RPL
2. Pre-Assessment- To assess the current competencies of the candidates and identifying the gap between the full qualification and current competencies.
3. Orientation & Bridge Training- To train the candidates for bridging the gap.
4. Final assessment & Certification- To assess the candidate for full qualification and certify.

RPL assessment will be managed by PBSSD (Paschim Banga Society for Skill Development) under Department of Technical Education, Training & Skill Development, Govt. of West Bengal.

### **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.**

Assessment will be carried out by Board of Examination under West Bengal State Council of Technical & Vocational Education & Skill Development, under Department of Technical Education, Training & Skill Development, Govt. of West Bengal.

The Council has all necessary infrastructure and pool of qualified Assessors/ Examiners to carry out such assessments. Presently the Council is conducting all examinations for all courses which include Diploma Courses, Vocational Courses in VIII+ level and X+2 level & other Short term Courses. Council also conducts all State Level Entrance tests like JEXPO for admission to Diploma Courses in Polytechnics, VOCLET for lateral entry to Diploma Courses in Polytechnics and CET (Common Entrance Test) for admission to NCVT courses in ITIs.

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### ASSESSMENT EVIDENCE

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

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

**Title of Component:**

Outcomes to be assessed	Assessment criteria for the outcome
1. Identify different parts of 2/3 wheeler and demonstrate their use	1.1. To able to define different parts of 2/3 wheeler 1.2. To state the differences between different types of motorcycles, scooters, auto rickshaw 1.3. To able to define the use of different parts of 2/3 wheeler 1.4. To identify different parts of an IC engine 1.5. To able to recognise an IC engine as petrol or diesel engine 1.6. To able to identify different parts of alternative fuel feed system
2. Demonstrate working principles of four stroke engine	2.1. To able to explain working principle of four stroke engine 2.2. To able to differentiate two stroke and four stroke engine
3. Identify hand tools, measuring tools along with their use	3.1. To able to recognise the hand tools used for repairing 2/3 wheeler, like. Hammer mallet, torque wrench, screw driver, file, etc. 3.2. To able to use screw jack for lifting a 3 wheeler 3.3. To able to recognise the measuring instruments, like venire calliper, calliper, micrometer, scale, feeler gauge, etc.
4. Repair works on engine system	4.1 To able to identify basic problems in an engine and their cause 4.2 To able to dismantle, replace any parts and reassemble different parts of an engine.
5. Repair works on carburettor	5.1. To able to identify basic problems in a carburettor and their cause. 5.2. To able to dismantle, replace any parts and reassemble different parts of a carburettor. 5.3. To able to define the necessity of tuning of a carburettor and to able to tune it practically.
6. Repair works on transmission system	6.1. To able to diagnose basic problem of a clutch and their causes. 6.2. To able to diagnose basic problem of a gearbox and their causes. 6.3. To able to dismantle, replace any parts and reassemble a clutch. 6.4. To able to dismantle, replace any parts and reassemble a gearbox. 6.5. To able to repair of sprocket system of a motor cycle. 6.6. To able to adjust primary and secondary chain
7. Repair works on brake and wheel	7.1. To able to diagnose basic problem of brake system and their causes. 7.2. To able to dismantle, replace any parts and reassemble a brake shoe/disc brake. 7.3. To able to diagnose basic problems of wheel system and their causes. 7.4. To able to dismantle, replace any parts and reassemble a wheel
8. Repair works on ignition system	8.1. To able to diagnose basic problems of ignition system and their causes. 8.2. To able to dismantle, replace any parts and reassemble ignition system
9. Repair works on electric system	9.1. To able to diagnose basic problems of battery and their causes. 9.2. To able to replace/ repair the connection of battery.

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	<p>9.3. To able to diagnose basic problems of lighting system, switch, relay, and their causes.</p> <p>9.4. To able to repair of lighting system, switches, relays.</p>
10. Repair works on other parts like fork, suspension system, steering column, mud guard, lubrication system.	<p>10.1. To able to diagnose basic problems of fork, suspension system, steering column, mud guard, lubrication system. and their causes.</p> <p>10.2. To able to replace/ repair the fork, suspension system, steering column, mud guard, lubrication system.</p>
11. Repair alternate fuel feed system in 3 wheeler (LPG/CNG)	<p>11.1. To able to demonstrate different alternative fuel feed system required in 3 wheeler.</p> <p>11.2. To able to replace CNG kit/LPG kit in a 3 wheeler</p>
12. Acquire knowledge on safety measures, pollution control	<p>12.1. To able to carry on safety measures in shop floor.</p> <p>12.2. To able to perform bubble test for LPG leakage in 3 wheeler.</p> <p>12.3. To able to acquire basic pollution control measure used in automobile shop surroundings.</p>
13. Acquire communication skill	<p>13.1. To able to read and write local language.</p> <p>13.2. To able to recognise job card/instruction manual.</p> <p>13.3. To able to communicate with bank, licensing authority for acquiring different services required for establishing entrepreneurship.</p>
14. Acquire numerical skill	<p>14.1. To able to sum up the cost of repair.</p> <p>14.2. To able to estimate the profit &amp; loss.</p>
15. Gather knowledge on entrepreneurship	<p>15.1. To able to define entrepreneurship.</p> <p>15.2. To gather knowledge about different State Govt. and Central Govt. Agencies providing technical as well as financial support.</p>

### Means of assessment 1

There will be two types of Assessments viz. Formative and Summative. The Formative Assessment will be carried out continuously during the conduct of course and Summative Assessment will be carried out at the end of the course. Details are mentioned under means of Assessment-2. Written test, Practical examination/ Skill test & Viva voce

### Means of assessment 2

- I. Means of Formative Assessment (Total marks allotted- 300)** 
- i) Assignments for each module of Theory component
  - ii) Assignments for each module of Employability Skills component
  - iii) Continuous evaluation of each module of Practical component
- II. Means of Summative Assessment (Total marks allotted- 700)**
- i) Written test for Theory component
  - ii) Written test for Employability Skills component
  - iii) Practical Test & Viva voce for Practical Component.
- Component wise distribution of marks is given in the Annexure 2

### Pass/Fail

#### Pass/Fail

Passing criteria is based on marks obtained in Formative and Summative Assessment taken together as mentioned in Annexure No-1

- i) Minimum Marks to pass Theory component- 60%
- ii) Minimum Marks to pass Employability Skills component- 60%
- iii) Minimum Marks to pass practical component- 70%
- iv) Minimum attendance required to appear in the final examination- 75%

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## **SECTION 2**

### **EVIDENCE OF LEVEL**



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### OPTION A

Title/Name of qualification/component: <b>2/3 WHEELER MECHANIC/TECHNICIAN</b>		Level: <b>3</b>	
NSQF Domain	Outcomes of the Qualification/Component	How the outcomes relates to the NSQF level descriptors	NSQF Level
Process	Person may carryout routine servicing and basic repair work of 2/3 wheeler	Persons are able to identify simple troubleshooting problems related to different parts of 2/3 wheeler, recognise their cause and are able to carry on routine servicing and simple repair of the same.	Level 3
Professional knowledge	<ul style="list-style-type: none"> <li>Persons are able to identify different parts of 2/3 wheeler and demonstrate their use</li> <li>Persons are able to Define working principle of four stroke engine</li> <li>Persons are able to Identify hand tools, measuring tools along with their use</li> <li>Persons are able to understand basic troubleshooting problems and their causes regarding various parts of 2/3 wheeler</li> </ul>	Persons are able to acquire basic knowledge on different parts of a 2/3 wheeler and their use. They are also able to acquire the working principle of four stroke engine. They are able to identify different hand tools and measuring tools and their application. The persons are able to understand basic troubleshooting problems and their causes related different parts of 2/3 wheeler.	Level 3
Professional skill	Persons are able to recognise the troubleshooting the problems and the carry on repair works on engine system, clutch, carburettor, gearbox, brake and wheel, ignition system, electrical appliances.	Persons are able to recognise troubleshooting problems and the corresponding cause for various parts of 2/3 wheeler. With the help of the knowledge the persons are able to service and repair different parts of 2/3 wheeler with their practical skill.	Level 3
Core skill	<p>Persons are able to communicate with both the employee and customer in local language.</p> <p>Persons are able to read the instruction manuals, job card preferably in English.</p> <p>Persons are able to have basic computer knowledge</p> <p>Persons are able to access all sorts of banking process.</p> <p>Persons are able to have an idea for getting trade licence.</p>	Persons have limited communication skill, arithmetic skills, basic computer skill to meet up personal banking, basic understanding of social and natural environment.	Level 3
Responsibility	Persons are able to repair 2/3 wheeler him/herself to some extent otherwise the repairing can be done under close supervision.	Persons are able to carry on servicing and repairing himself to a certain extent. Persons are under close supervision.	Level 3

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### OPTION B

Title/Name of qualification/component: <a href="#">Enter the title here</a>		Level: <a href="#">Add level number</a>	
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			

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## SECTION 3

### EVIDENCE OF NEED

#### **What evidence is there that the qualification is needed?**

The Automobile Industry in India has witnessed a sharp rise in market demand during the last two decades. This is true for both four and 2/3 Wheelers. Never the less, with the growing per capita income in the urban & semi-urban population, the need for 2/3 wheelers have been increasing at a rate not less than 20%. Besides Indian manufacturers like Bajaj, TVS, Hero, Atul Motors there are MNCs like Piaggio, Honda, Suzuki who are manufacturing 2/3 wheelers in India using high end technology. On an average, a 2/3 wheelers becomes serviceable after 2000-5000 KM run and this calls for a huge pool of trained technicians at various levels (Semi-skilled & Skilled) in India. Thus this course is relevant to fulfill the demand of the Industry.

#### **What is the estimated uptake of this qualification and what is the basis of this estimate?**

Three Wheelers are becoming a popular mode of conveyance and at present 45000 to 50000 of such commercial vehicle are running in the state of West Bengal. Two Wheelers, on the other hand, are being possessed by almost 60% household in urban and semi-urban areas. But there are very less number of servicing centres for these vehicles to cater the need of the users. A requirement of around 80000-100000 skilled technicians in each year is apprehended from a nationwide perspective.

#### **What steps were taken to ensure that the qualification does not duplicate already existing or planned qualifications in the NSQF?**

This qualification is being conducted under the West Bengal State Council of Technical & Vocational Education & Skill Development under Department of Technical Education, Training and Skill Development since the academic year 2005 in Vocational Training Centres spread all over West Bengal for class- VIII+ pass dropout youths. In the state of West Bengal the Council is affiliating and awarding body for this qualification. Thus there is no other existing or planned qualification (Short term courses) in the state aligned with NSQF.

#### **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?**

The council has three well defined sub-committees namely Board of Studies and Skilling, Board of Examination and Recognition Committee. These committees monitor and review the progress of all qualifications under its purview on a regular basis.

This qualification will be reviewed and revised at an interval of three years on the basis of the outcome of the trainees, placement and self employment data and feedback from concerned industries/employers.

Please attach any 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.

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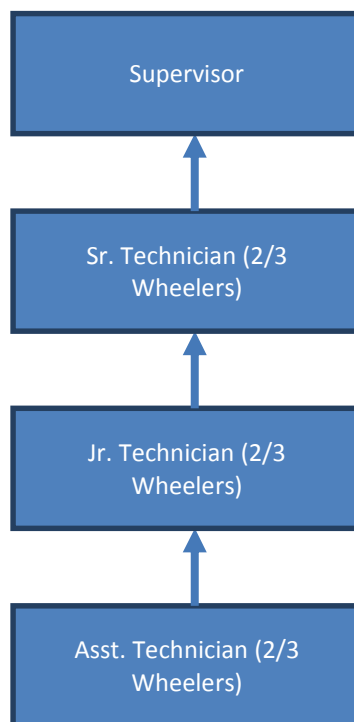
## SECTION 4

### EVIDENCE OF PROGRESSION

**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?**

On completion of the course, an Assistant Technician (2/3 wheelers) will not be in a position to handle servicing works independently. For this he/she requires at least one year hands on exposure under the supervision of a skilled technician (2/3 wheelers). After gaining adequate knowledge and skill, he/she may be elevated as Jr. Technician. After 2 years working as Jr. Technician, the incumbent may be in a position to become a Sr. Technician. After working as Sr. Technician for around 5 years, he/she may be able to work as a supervisor or may opt for independent business on 2/3 wheelers servicing.

The block diagram on vertical mobility is given below.



Please attach any 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.