



# **COMPETENCY STANDARD FOR AUTOMOTIVE MECHANICS**

**(Light Engineering Sector)**

**Level: 01**

**Competency Standard Code: CS-LE-AMech-L1-EN-V1**

**National Skills Development Authority  
Prime Minister's Office, Bangladesh**

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## Introduction

The NSDA aims to enhance an individual's employability by certifying completeness with skills. NSDA works to expand the skilling capacity of identified public and private training providers qualitatively and quantitatively. It also aims to establish and operationalize a responsive skill ecosystem and delivery mechanism through a combination of well-defined set of mechanisms and necessary technical supports.

Key priority economic growth sectors identified by the government have been targeted by NSDA to improve current job skills along with existing workforce to ensure required skills to industry standards. Training providers are encouraged and supported to work with industry to address identified skills and knowledge to enable industry growth and increased employment through the provision of market responsive inclusive skills training program. "**Automotive Mechanics** " is selected as one of the priority occupations of **Light Engineering** Sector. This standard is developed to adopt a demand driven approach to training with effective inputs from Industry Skills Councils (ISC's), employer associations and employers.

Generally, a competency standard informs curriculum, learning materials, assessment and certification of trainees enrolled in Skills training. Trainees who successfully pass the assessment will receive a qualification in the National Skills Qualification Framework (BNQF) and will be listed on the NSDA's online portal.

This competency standard is developed to improve skills and knowledge in accordance with the job roles, duties and tasks of the occupation and ensure that the required skills and knowledge are aligned to industry requirements. A series of stakeholder consultations, workshops were held to develop this document.

The document also details the format, sequencing, wording and layout of the Competency Standard for an occupation which is comprised of Units of Competence and its corresponding Elements.

## Overview

A **competency standard** is a written specification of the knowledge, skills and attitudes required for the performance of an occupation, trade or job corresponding to the industry standard of performance required in the workplace.

The purpose of a competency standards is to:

- provide a consistent and reliable set of components for training, recognising and assessing people's skills, and may also have optional support materials
- enable industry recognised qualifications to be awarded through direct assessment of workplace competencies
- encourage the development and delivery of flexible training which suits individual and industry requirements
- encourage learning and assessment in a work-related environment which leads to verifiable workplace outcomes

Competency standards are developed by a working group comprised of representative from NSDA, Key Institutions, ISC, and industry experts to identify the competencies required of an occupation in **light Engineering sector**.

Competency standards describe the skills, knowledge and attitude needed to perform effectively in the workplace. CS acknowledge that people can achieve technical and vocational competency in many ways by emphasizing what the learner can do, not how or where they learned to do it.

With competency standards, training and assessment may be conducted at the workplace or at training institute or any combination of these.

Competency standards consist of a number of units of competency. A unit of competency describes a distinct work activity that would normally be undertaken by one person in accordance with industry standards.

Units of competency are documented in a standard format that comprises of:

- unit title
- nominal duration
- unit code
- unit descriptor
- elements and performance criteria
- variables and range statement
- curricular content guide
- assessment evidence guide

Together, all the parts of a unit of competency:

- describe a work activity
- guide the assessor to determine whether the candidate is competent or not yet competent

The ensuing sections of this document comprise of a description of the relevant occupation, trade or job with all the key components of a unit of competency, including:

- a chart with an overview of all Units of Competency for the relevant occupation, trade or job including the Unit Codes and the Unit of Competency titles and corresponding Elements
- the Competency Standard that includes the Unit of Competency, Unit Descriptor, Elements and Performance Criteria, Range of Variables, Curricular Content Guide and Assessment Evidence Guide.

**Competency Standards for National Skill Certificate – 1 in  
Automotive mechanics in Light Engineering Sector**

**Level descriptors of NSQF (BNQF 1-6)**

<b>Level &amp; Job classification</b>	<b>Knowledge Domain</b>	<b>Skills Domain</b>	<b>Responsibility Domain</b>
6-Mid-Level Manager/ Sub Assistant Engineer	Comprehensive actual and theoretical knowledge within a specific work or study area with an awareness of the validity and limits of that knowledge, able to analyze, compare, relate and evaluate.	Specialised and wider range of cognitive and practical skills required to provide leadership in the development of creative solutions to defined problems. Communicate professional issues and solutions to the team and to external partners/users.	Work under broad guidance and self-motivation to execute strategic and operational plan/s. Lead lower-level management. Diagnose and resolve problems within and among work groups.
5-Supervisor	Broad knowledge of the underlying, concepts, principles, and processes in a specific work or study area, able to scrutinize and break information into parts by identifying motives or causes.	Broad range of cognitive and practical skills required to generate solutions to specific problems in one or more work or study areas. Communicate practice-related problems and possible solutions to external partners.	Work under guidance of management and self-direction to resolve specific issues. Lead and take responsibility for the work and actions of group/team members. Bridge between management.
4-Highly Skilled Worker	Broader knowledge of the underlying, concepts, principles, and processes in a specific work or study area, able to solve problems to new situations by comparing and applying acquired knowledge.	A range of cognitive and practical skills required to accomplish tasks and solve problems by selecting and applying the full range of methods, tools, materials and information. Communicate using technical terminology and IT technology with partners and users as per workplace requirements.	Work under minimal supervision in specific contexts in response to workplace requirements. Resolve technical issues in response to workplace requirements and lead/guide a team/ group.
3-Skilled Worker	Moderately broad knowledge in a specific work or study area, able to perceive ideas and abstract from drawing and design according to workplace requirements.	Basic cognitive and practical skills required to use relevant information in order to carry out tasks and to solve routine problems using simple rules and tools. Communicate with his team and limited external partners upholding the values, nature and culture of the workplace	Work or study under supervision with considerable autonomy. Participate in teams and responsible for group coordination.
2-Semi Skilled Worker	Basic understanding of underpinning knowledge in a specific work or study area, able to interpret and apply common occupational terms and instructions.	Skills required to carry out simple tasks, communicate with his team in the workplace presenting and discussing results of his work with required clarity.	Work or study under supervision in a structured context with limited scope of manipulation
1 –Basic Skilled Worker	Elementary understanding of ability to interpret the underpinning knowledge in a specific study area, able to interpret common occupational terms and instructions.	Specific Basic skills required to carry out simple tasks. Interpret occupational terms and present the results of own work within guided work environment/ under supervision.	Work under direct supervision in a structured context with limited range of responsibilities.

## List of Abbreviations

<b>CS</b>	- Competency Standard
<b>ISC</b>	- Industry Skills Council
<b>FPS</b>	- Foot, Pound and Second
<b>LEISC</b>	- Light Engineering Industry Skills Councils
<b>NSDA</b>	- National Skills Development Authority
<b>NSQF</b>	- National Skills Qualification Framework
<b>MKS</b>	- Meter, Kilogram and Second
<b>BNQF</b>	- Bangladesh National Qualification Framework
<b>OSH</b>	- Occupational Safety and Health
<b>PPE</b>	- Personal Protective Equipment
<b>SS</b>	- Stainless Steel
<b>SCVC</b>	- Standards and Curriculum Validation Committee
<b>STP</b>	- Skills Training Provider
<b>SOP</b>	- Standard Operating Procedure
<b>UoC</b>	- Unit of Competency

## Approval of Competency Standard

Name and Designation	Signature
<b>Dulal Krishna Saha</b> Executive Chairman (Secretary) National Skills Development Authority	
<b>Md. Nurul Amin</b> Member (Registration & Certification) Joint Secretary National Skills Development Authority	
<b>Quamrun Naher Siddiqua</b> Member (Coordination & Assessment) Joint Secretary National Skills Development Authority	
<b>Dr. Md. Ziauddin</b> Member (Admin & Finance) Joint Secretary National Skills Development Authority	
<b>Alif Rudaba</b> Member (Planning & Skills Standard) Joint Secretary National Skills Development Authority	

**National Competency Standards for National Skill Certificate –1 in  
Automotive Mechanics**

**Course Structure**

SL	Unit Code and Title		UoC Level	Nominal Hours
<b>Generic Competencies</b>				<b>85</b>
1.	GU002L2V1	Apply OSH Practices at Workplace	1	15
2.	GU001L2V1	Perform Computations Using Basic Mathematical Concepts	1	15
3.	GU013L2V1	Practice Housekeeping Procedure	1	10
4.	GU005L2V1	Carry out Workplace Interaction in English	1	15
5.	GU013L2V1	Demonstrate Basic ICT Skills	1	30
<b>Sector Specific Competencies</b>				<b>20</b>
6.	SULES001L2V1	Interpret Manuals, Sketches and Drawings	1	20
<b>Occupation Specific Competencies</b>				<b>255</b>
7.	OUAMECH001L1V1	Use Hand and Power Tools	1	20
8.	OUAMECH002L1V1	Interpret Major System of Automobiles	1	35
9.	OUAMECH003L1V1	Service Suspension System	1	40
10.	OUAMECH004L1V1	Service Cooling System	1	30
11.	OUAMECH005L1V1	Service Lubricating System	1	30
12.	OUAMECH006L1V1	Service Starting System	1	30
13.	OUAMECH007L1V1	Service Fuel System	1	30
14.	OUAMECH008L1V1	Service Ignition System	1	40
<b>Total Nominal Hours</b>				<b>360</b>



## Units & Elements at a Glance:

### Generic Competencies (85 hours)

Code	Unit of Competency	Elements of Competency	Duration (Hours)
GU002L2V1	Apply OSH Procedure in the Workplace	<ol style="list-style-type: none"> <li>1. Identify OSH policies and procedures.</li> <li>2. Follow OSH procedure</li> <li>3. Report hazards and risks</li> <li>4. Respond to emergencies</li> <li>5. Maintain personal well-being</li> </ol>	15
GU001L2V1	Perform Computations Using Basic Mathematical Concept	<ol style="list-style-type: none"> <li>1. Identify calculation requirements in the workplace</li> <li>2. Select appropriate mathematical methods for the calculation</li> <li>3. Use tool/instrument to perform calculations</li> </ol>	15
GU013L2V1	Practice House Keeping Procedure	<ol style="list-style-type: none"> <li>1. Sort and remove unnecessary items</li> <li>2. Arrange items</li> <li>3. Maintain work area, tools and equipment</li> <li>4. Follow standardized work process and procedures</li> <li>5. Perform work spontaneously</li> </ol>	10
GU005L2V1	Carry out workplace interaction in English	<ol style="list-style-type: none"> <li>1. Interpret workplace communication and etiquette</li> <li>2. Interpret workplace documents</li> <li>3. Participate in workplace meetings and discussions</li> <li>4. Practice professional ethics at workplace</li> </ol>	15
GU014L2V1	Demonstrate basic ICT skills	<ol style="list-style-type: none"> <li>1. Identify and use most commonly used ICT tools</li> <li>2. Use computer</li> <li>3. Perform word processing</li> <li>4. Work with spreadsheet</li> <li>5. Use internet</li> </ol>	30

### Sector Specific Competencies (20Hours)

Code	Unit of Competency	Elements of Competency	Duration (Hours)
SUCS002L2V1	Interpret Manuals, Sketches and Drawings	<ol style="list-style-type: none"> <li>1. Interpret information and specifications</li> <li>2. Read and interpret sketches and drawings</li> </ol>	20

## Occupation Specific Competencies (255 Hours) Level -1

Code	Unit of Competency	Elements of Competency	Hours
OUAMECH001L1V1	Use hand and power tools used in Automotive Mechanics	<ol style="list-style-type: none"> <li>1. Identify and inspect hand and power tools</li> <li>2. Use hand tools</li> <li>3. Operate power tools</li> <li>4. Clean and maintain hand and power tools</li> </ol>	20
OUAMECH002L1V1	Interpret major system of automobiles	<ol style="list-style-type: none"> <li>1. Identify automobile</li> <li>2. Identify major system of automobile</li> </ol>	35
OUAMECH003L1V1	Service suspension system	<ol style="list-style-type: none"> <li>1. Diagnose Faults in Suspension System</li> <li>2. Service suspension system</li> <li>3. Clean and store tools and equipment</li> </ol>	40
OUAMECH004L1V1	Service Cooling system	<ol style="list-style-type: none"> <li>1. Prepare for work</li> <li>2. Service Cooling system</li> <li>3. Clean and store tools and equipment</li> </ol>	30
OUAMECH005L1V1	Service Lubricating system	<ol style="list-style-type: none"> <li>1. Prepare for work</li> <li>2. Service Lubricating system</li> <li>3. Clean and store tools and equipment</li> </ol>	30
OUAMECH006L1V1	Service Starting system	<ol style="list-style-type: none"> <li>1. Prepare for work</li> <li>2. Service Starting system</li> <li>3. Clean and store tools and equipment</li> </ol>	30
OUAMECH007L1V1	Service fuel system	<ol style="list-style-type: none"> <li>1. Prepare for work</li> <li>2. Service conventional Fuel system for Gasoline Engine</li> <li>3. Service conventional Fuel system for Diesel Engine</li> <li>4. Clean and store tools and equipment</li> </ol>	30
OUAMECH008L1V1	Service ignition system	<ol style="list-style-type: none"> <li>1. Prepare for work</li> <li>2. Service Starting system</li> <li>3. Clean and store tools and equipment</li> </ol>	40

# **Generic Competencies**

<b>Unit Code and Title</b>	<b>GC002L2V1: Apply OSH Procedure in the Workplace</b>
<b>Unit Descriptor</b>	<p>This unit covers the knowledge, skills and attitudes (KSA) required in applying OSH procedures in the workplace.</p> <p>It specifically includes identifying OHS policies and procedures, following OSH procedure, reporting to emergencies, and maintaining personal well-being.</p>
<b>Nominal Hours</b>	<b>15 Hours</b>
<b>Elements of Competency</b>	<b>Performance Criteria</b> <b><u>Bold &amp; Underlined</u></b> terms are elaborated in the Range of Variables
1. Identify OSH policies and procedures.	<p>1.1. <b><u>OSH policies</u></b> and <b><u>safe operating procedures</u></b> are accessed and stated</p> <p>1.2. <b><u>Safety signs and symbols</u></b> are identified and followed</p> <p>1.3. Emergency response, evacuation procedures and other contingency measures are determined according to workplace requirements</p>
2. Follow OSH procedure	<p>2.1 <b><u>Personal protective equipment (PPE)</u></b> is selected and collected as required</p> <p>2.2 Personal protective equipment (PPE) is correctly used in accordance with organization OSH procedures and practices</p> <p>2.3 A clear and tidy workplace is maintained as per workplace standard</p> <p>2.4 PPE is maintained to keep them operational and compliant with OSH regulations</p>
3. Report hazards and risks.	<p>3.1 <b><u>Hazards</u></b> and risks are identified, assessed and controlled</p> <p>3.2 Incidents arising from hazards and risks are reported to designated authority</p>
4. Respond to emergencies	<p>4.1 Alarms and warning devices are responded</p> <p>4.2 Workplace <b><u>emergency procedures</u></b> are followed</p> <p>4.3 <b><u>Contingency measures</u></b> during workplace accidents, fire and other emergencies are recognized and followed in accordance with organization procedures</p> <p>4.4 First aid procedures is applied during emergency situations</p>
5. Maintain personal well-being	<p>5.1 OSH policies and procedures are adhered to</p> <p>5.2 OSH awareness programs are participated in as per workplace guidelines and procedures</p> <p>5.3 Corrective actions are implemented to correct unsafe condition in the workplace</p>

	5.4 <b><u>“Fit to work” records</u></b> are updated and maintained according to workplace requirements
<b>Range of Variables</b>	
<b>Variables</b>	<b>Range</b> (may include but not limited to):
1. OHS Policies	1.1. Bangladesh standards for OHS 1.2. Fire Safety Rules and Regulations 1.3. Code of Practice 1.4. Industry Guidelines
2. Safe Operating Procedures	2.1 Orientation on emergency exits, fire extinguishers, fire escape, etc. 2.2 Emergency procedures 2.3 First Aid procedures 2.4 Tagging procedures 2.5 Use of PPE 2.6 Safety procedures for hazardous substances
3. Safety Signs and symbols	3.1 Direction signs (exit, emergency exit, etc.) 3.2 First aid signs 3.3 Danger Tags 3.4 Hazard signs 3.5 Safety tags 3.6 Warning signs
4. Personal Protective Equipment (PPE)	4.1 Gas Mask 4.2 Gloves 4.3 Safety boots 4.4 Face mask 4.5 Overalls 4.6 Goggles and safety glasses 4.7 Sun block 4.8 Chemical/Gas detectors
5. Hazards	5.1 Chemical hazards 5.2 Biological hazards 5.3 Physical Hazards 5.4 Mechanical and Electrical Hazard 5.5 Mental hazard 5.6 Ergonomic hazard
6. Emergency Procedures	6.1 Fire fighting 6.2 Earthquake 6.3 Medical and first aid 6.4 evacuation
7. Contingency measures	7.1 Evacuation 7.2 Isolation 7.3 Decontamination

8. "Fit to Work" records	8.1 Medical Certificate every year 8.2 Accident reports, if any 8.3 Eye vision certificate
<b>Evidence Guide</b> The evidence must be authentic, valid, sufficient, reliable, consistent, recent and meet all requirements of current version of the Unit of Competency	
1. Critical aspects of competency	Assessment required evidence that the candidate: <ul style="list-style-type: none"> <li>1.1 stated OHS policies and safe operating procedures</li> <li>1.2 followed safety signs and symbols</li> <li>1.3 used personal protective equipment (PPE)</li> <li>1.4 maintained workplace clear and tidy</li> <li>1.5 assessed and Controlled hazards</li> <li>1.6 followed emergency procedures</li> <li>1.7 followed contingency measures</li> <li>1.8 implemented corrective actions</li> </ul>
2. Underpinning knowledge	<ul style="list-style-type: none"> <li>2.1 Define OHS</li> <li>2.2 OHS Workplace Policies and Procedures</li> <li>2.3 Work Safety Procedures</li> <li>2.4 Emergency Procedures</li> <li>2.5 Hazard control procedure</li> <li>2.6 Different types of Hazards</li> <li>2.7 PPE and there uses</li> <li>2.8 Personal Hygiene Practices</li> <li>2.9 OHS Awareness</li> </ul>
3. Underpinning skills	<ul style="list-style-type: none"> <li>3.1 Accessing OHS policies</li> <li>3.2 Handling of PPE</li> <li>3.3 Handling cleaning tools and equipment</li> <li>3.4 Writing report</li> <li>3.5 Responding to emergency procedures</li> </ul>
4. Required attitude	<ul style="list-style-type: none"> <li>4.1 Commitment to occupational health and safety</li> <li>4.2 Sincere and honest to duties</li> <li>4.3 Promptness in carrying out activities</li> <li>4.4 Environmental concerns</li> <li>4.5 Eagerness to learn</li> <li>4.6 Tidiness and timeliness</li> <li>4.7 Respect of peers and seniors in workplace</li> <li>4.8 Communicate with peers and seniors in workplace</li> </ul>
5. Resource implications	<ul style="list-style-type: none"> <li>5.1 Workplace</li> <li>5.2 Equipment and outfits appropriate in applying safety measures</li> <li>5.3 Tools, materials and documentation required</li> <li>5.4 OHS Policies and Procedures</li> </ul>

6. Methods of assessment	Competency should be assessed by: 6.1 Written test 6.2 Demonstration 6.3 Oral Questioning 6.4 Portfolio
7. Context of assessment	7.1 Competency assessment must be done in NSDA accredited assessment centre 7.2 Assessment should be done by a NSDA certified/nominated assessor

**Accreditation Requirements**

Training Providers must be accredited by NSDA, the National Quality Assurance Body, or a body with delegated authority for quality assurance to conduct training and assessment against this unit of competency for credit towards the award of national skills qualification. Accredited providers assessing against this unit of competency must meet the quality assurance requirements set by NSDA.

<b>Unit Code and Title</b>	<b>GU001L2V1: Perform Computations Using Basic Mathematical Concepts</b>
<b>Nominal Hours</b>	<b>15 Hours</b>
<b>Unit Descriptor</b>	<p>This unit of competency requires the knowledge, skills and attitude to perform computations using basic mathematical concepts in the workplace.</p> <p>It specifically includes the tasks of identifying calculation requirements in the workplace, selecting appropriate mathematical method/concept for the calculation and using appropriate instruments tools to perform calculation.</p>
<b>Elements of Competency</b>	<b>Performance Criteria</b> <b>Bold &amp; Underlined</b> terms are elaborated in the Range of Variables Training Components
1. Identify calculation requirements in the workplace	1.1 Job requirements are identified 1.2 <b><u>Measurements</u></b> are selected in accordance with job requirement 1.3 Calculation requirements are identified from <b><u>workplace information</u></b>
2. Select appropriate mathematical methods for the calculation.	2.1 Mathematical methods are identified 2.2 <b><u>Appropriate method</u></b> is selected to carry out the calculation requirements 2.3 Tolerance and clearance limits are identified and adjusted according to the job requirements
3. Use tool/instrument to perform calculations	3.1 Work instructions are confirmed and applied to the job in hand 3.2 Materials to be measured are identified as per job specification 3.3 Appropriate <b><u>tool/ instrument</u></b> is selected based on materials to be measured
<b>Range of Variables</b>	
<b>Variable</b>	<b>Range</b> (may include but not limited to)
1. Measurements	1.1 Length 1.2 Width 1.3 Weight 1.4 Tolerance
2. workplace information	2.1 Job Order 2.2 Design 2.3 Working drawing 2.4 Verbal instructions 2.5 Written Instruction



3. Appropriate method	<ul style="list-style-type: none"> <li>3.1 Addition</li> <li>3.2 Subtraction</li> <li>3.3 Division</li> <li>3.4 Multiplication</li> <li>3.5 Conversion</li> <li>3.6 Percentage and ratio calculation</li> </ul>
4. Tool/ Instrument	<ul style="list-style-type: none"> <li>4.1 Calculator</li> <li>4.2 Scale</li> <li>4.3 Measuring tape</li> <li>4.4 Marker</li> </ul>
<p><b>Evidence Guide</b></p> <p>The evidence must be authentic, valid, sufficient, reliable, consistent and recent and meet the requirements of the current version of the Unit of Competency.</p>	
1. Critical Aspects of Competency	<p>Assessment required evidence that the candidate:</p> <ul style="list-style-type: none"> <li>1.1 identified calculation requirements from workplace information</li> <li>1.2 selected appropriate method to carry out the calculation requirements</li> <li>1.3 selected measurements</li> <li>1.4 selected appropriate methods</li> <li>1.5 used tool/instrument</li> <li>1.6 added numbers</li> <li>1.7 subtracted numbers</li> <li>1.8 multiplied numbers.</li> <li>1.9 divided numbers.</li> <li>1.10 completed calculations using appropriate tools/instruments</li> </ul>
2. Underpinning Knowledge	<ul style="list-style-type: none"> <li>2.1. Numerical concept</li> <li>2.2. Basic mathematical methods such as addition, subtraction, multiplication and division and percentage.</li> <li>2.3. Mathematical language, symbols and terminology.</li> <li>2.4. Measuring units</li> </ul>
3. Underpinning Skills	<ul style="list-style-type: none"> <li>3.1 Interpret numerical concept</li> <li>3.2 Interpret mathematical methods such as addition, subtraction, multiplication and division and percentage.</li> <li>3.3 Interpret mathematical language, symbols and terminology.</li> <li>3.4 Interpret measuring units</li> </ul>
4. Underpinning Attitudes	<ul style="list-style-type: none"> <li>4.1. Commitment to occupational health and safety</li> <li>4.2. Environmental concerns</li> <li>4.3. Eagerness to learn</li> <li>4.4. Tidiness and timeliness</li> <li>4.5. Respect for rights of peers and seniors in workplace</li> <li>4.6. Communication with peers and seniors in workplace</li> </ul>
5. Resource Implications	<ul style="list-style-type: none"> <li>5.1. Work place Procedure</li> <li>5.2. Materials relevant to the proposed activity</li> </ul>

	<p>5.3. All tools, equipment, material and documentation required.</p> <p>5.4. Relevant specifications or work instructions</p>
6. Methods of Assessment	<p>6.1. Written Test</p> <p>6.2. Demonstration</p> <p>6.3. Oral Questioning</p> <p>6.4. Portfolio</p>
7. Context of Assessment	<p>7.1. Competency assessment must be done in a NSDA accredited assessment center</p> <p>7.2. Assessment should be done by an NSDA certified/nominated assessor</p>

**Accreditation Requirements**

Training Providers must be accredited by NSDA, the National Quality Assurance Body, or a body with delegated authority for quality assurance to conduct training and assessment against this unit of competency for credit towards the award of national skills qualification. Accredited providers assessing against this unit of competency must meet the quality assurance requirements set by NSDA.

<b>Unit Code and Title</b>	<b>GU013L2V1: Practice House Keeping Procedure</b>
<b>Unit Descriptor</b>	<p>This unit covers the knowledge, skills and attitude required to Practice housekeeping procedure.</p> <p>It specifically includes sorting and removing unnecessary items, arranging items, maintaining work area, tools and equipment, following standardized work process and procedure and performing work spontaneously.</p>
<b>Nominal Hours</b>	<b>10 Hours</b>
<b>Elements of Competency</b>	<b>Performance Criteria</b> <b><u>Bold underlined</u></b> terms are elaborated in the Range of Variables
1. Sort and remove unnecessary items	<p>1.1 Reusable, recyclable materials are sorted in accordance with company/office procedures</p> <p>1.2 <b><u>Unnecessary items</u></b> are removed and disposed of in accordance with company or office procedures</p>
2. Arrange items	<p>2.1 Items are arranged in accordance with company/office housekeeping procedures</p> <p>2.2 Work area is arranged according to job requirements</p> <p>2.3 Activities are prioritized based on instructions.</p> <p>2.4 Items are provided with clear and visible <b><u>identification marks</u></b> based on procedure</p> <p>2.5 Safety equipment and evacuation passages are kept clear and accessible based on instructions</p>
3. Maintain work area, tools and equipment	<p>3.1 Cleanliness and orderliness of work area is maintained in accordance with company/office procedures</p> <p>3.2 Tools and equipment are cleaned in accordance with manufacturer's instructions/manual</p> <p>3.3 <b><u>Minor repairs</u></b> are performed on tools and equipment in accordance with manufacturer's instruction/manual</p> <p>3.4 Defective tools and equipment are reported to immediate supervisor</p>
4. Follow standardized work process and procedure	<p>4.1 Materials for common use are maintained in designated area based on procedures</p> <p>4.2 Work is performed according to standard work procedures. Abnormal incidents are reported to immediate supervisor</p>
5. Perform work spontaneously	<p>5.1 Work is performed as per instruction</p> <p>5.2 Company and office <b><u>decorum</u></b> are followed and complied with</p> <p>5.3 Work is performed in accordance with OSH requirements</p>
<b>Range of Variables</b>	

<b>Variable</b>	<b>Range</b> (may include but not limited to):
1. Unnecessary items	1.1 Non-recyclable materials 1.2 Pictures, posters and other materials not related to work activity 1.3 Unserviceable tools and equipment 1.4 Waste materials
2. Identification marks	2.1 Color coding 2.2 Labels 2.3 Tags
3. Minor repairs	3.1 Application of lubricants 3.2 Replacement of parts 3.3 Sharpening of tools 3.4 Tightening of nuts, bolts and screws
4. Decorum	4.1 Behavior 4.2 Company/office rules and regulations 4.3 Company/office uniform
<b>Evidence Guide</b>	
The evidence must be authentic, valid, sufficient, reliable, consistent, recent and meet all requirements of current version of the Unit of Competency.	
1. Critical aspects of competency	1.1 Sorted and removes unnecessary items 1.2 Arranged items 1.3 Maintained work area, tools and equipment 1.4 Followed standardized work process and procedures 1.5 Performed work spontaneously
2. Underpinning knowledge	2.1 Environmental requirements relative to work safety 2.2 Principles of 5S 2.3 Reading skills required to interpret instructions 2.4 Work process and procedures 2.5 Work-related documentation requirements
3. Underpinning skills	3.1 Arranging items 3.2 Maintaining work area, tools and equipment 3.3 Following standardizing work process
4. Underpinning attitude	4.1 Commitment to occupational health and safety 4.2 Promptness in carrying out activities 4.3 Sincere and honest to duties 4.4 Environmental concerns 4.5 Eagerness to learn 4.6 Tidiness and timeliness 4.7 Respect for rights of peers and seniors in workplace 4.8 Communication with peers and seniors in workplace

5. Resource implications	<p>The following resources must be provided:</p> <ul style="list-style-type: none"> <li>5.1 Work place Procedure</li> <li>5.2 Materials relevant to the proposed activity</li> <li>5.3 All tools, equipment, material and documentation required.</li> <li>5.4 Relevant specifications or work instructions</li> </ul>
6. Methods of assessment	<p>Methods of assessment may include but not limited to:</p> <ul style="list-style-type: none"> <li>6.1 Written test</li> <li>6.2 Demonstration</li> <li>6.3 Oral questioning</li> <li>6.4 Portfolio</li> </ul>
7. Context of assessment	<ul style="list-style-type: none"> <li>7.1 Competency assessment must be done in a training center or in an actual or simulated work place after Completion of the training module</li> <li>7.2 Assessment should be done by NSDA certified assessor</li> </ul>
<p><b>Accreditation Requirements</b></p> <p>Training Providers must be accredited by NSDA, the National Quality Assurance Body, or a body with delegated authority for quality assurance to conduct training and assessment against this unit of competency for credit towards the award of national skills qualification. Accredited providers assessing against this unit of competency must meet the quality assurance requirements set by NSDA.</p>	

<b>Unit Code and Title</b>	<b>GU005L3V1: Carryout Workplace Interaction in English</b>
<b>Nominal Hours</b>	<b>15 Hours</b>
<b>Unit Descriptor</b>	This unit covers the knowledge, skills and attitudes required to carry out workplace interaction. It specifically includes – interpreting workplace communication and etiquette; reading and understand workplace documents; participating in workplace meetings and discussions; and practicing professional ethics at workplace.
<b>Elements of Competency</b>	<b>Performance Criteria</b> <b><u>Bold &amp; Underlined</u></b> terms are elaborated in the Range of Variables Training Components
1. Interpret workplace communication and etiquette	<p>1.1 Workplace code of conducts are interpreted as per organizational guidelines</p> <p>1.2 Appropriate lines of communication are maintained with supervisors and colleagues</p> <p>1.3 Workplace interactions are conducted in a <b><u>courteous manner</u></b> to gather and convey information</p> <p>1.4 Questions about routine <b><u>workplace procedures and matters</u></b> are asked and responded as required</p>
2. Interpret Workplace Documents	<p>2.1 Workplace documents are interpreted as per standard.</p> <p>2.2 Assistance is taken to aid comprehension when required from peers / supervisors</p> <p>2.3 Visual information / symbols / signage’s are understood and followed</p> <p>2.4 Specific and relevant information are accessed from <b><u>appropriate sources</u></b></p> <p>2.5 Appropriate medium is used to transfer information and ideas</p>
3. Participate in workplace meetings and discussions	<p>3.1 Team meetings are attended on time and followed meeting procedures and etiquette</p> <p>3.2 Own opinions are expressed and listened to those of others without interruption</p> <p>3.3 Inputs are provided consistent with the meeting purpose and interpreted and implemented meeting outcomes</p>
4. Practice professional ethics at workplace	<p>4.1 Responsibilities as a team member are demonstrated and kept promises and commitments made to others</p> <p>4.2 Tasks are performed in accordance with workplace procedures</p> <p>4.3 Confidentiality is respected and maintained</p> <p>4.4 Situations and actions considered inappropriate or which present a conflict of interest are avoided</p>

<b>Range of Variables</b>	
<b>Variable</b>	<b>Range</b> (may include but not limited to):
1. Courteous Manner	1.1 Effective questioning 1.2 Active listening 1.3 Speaking skills
2. Workplace Procedures and Matters	2.1 Notes 2.2 Agenda 2.3 Simple reports such as progress and incident reports 2.4 Job sheets 2.5 Operational manuals 2.6 Brochures and promotional material 2.7 Visual and graphic materials 2.8 Standards 2.9 OSH information 2.10 Signs
3. Appropriate Sources	3.1 HR Department 3.2 Managers 3.3 Supervisors
<b>Evidence Guide</b>	
The evidence must be authentic, valid, sufficient, reliable, consistent and recent and meet the requirements of the current version of the Unit of Competency	
1. Critical Aspects of Competency	Assessment required evidence that the candidate: 1.1 followed workplace code of conducts is as per organizational guidelines 1.2 maintained workplace documents as per standard 1.3 followed workplace instructions and symbols 1.4 followed and implemented meeting outcomes
2. Underpinning Knowledge	2.1 Workplace communication and etiquette 2.2 Workplace documents, signs and symbols 2.3 meeting procedure and etiquette
3. Underpinning Skills	3.1 Interpreting performance of workplace communication and etiquette 3.2 Interpreting workplace instructions and symbol 3.3 Interpreting workplace code of conducts is as per organizational guidelines 3.4 Interpreting workplace documents as per standard 3.5 Interpreting and implementing meeting outcomes

4. Underpinning Attitudes	4.1 Commitment to occupational health and safety 4.2 Promptness in carrying out activities 4.3 Sincere and honest to duties 4.4 Environmental concerns 4.5 Eagerness to learn 4.6 Tidiness and timeliness 4.7 Respect for rights of peers and seniors in workplace 4.8 Communication with peers and seniors in workplace
5. Resource Implications	The following resources must be provided: 5.1 Relevant tools, Equipment, software and facilities needed to perform the activities. 5.2 Required learning materials.
6. Methods of Assessment	Methods of assessment may include but not limited to: 6.1 Written Test 6.2 Demonstration 6.3 Oral Questioning 6.4 Portfolio
7. Context of Assessment	7.1 Competency assessment must be done in a NSDA accredited assessment centre 7.2 Assessment should be done by an NSDA certified/nominated assessor
<p><b>Accreditation Requirements</b></p> <p>Training Providers must be accredited by NSDA, the National Quality Assurance Body, or a body with delegated authority for quality assurance to conduct training and assessment against this unit of competency for credit towards the award of national skills qualification. Accredited providers assessing against this unit of competency must meet the quality assurance requirements set by NSDA.</p>	



<b>Unit Code and Title</b>	<b>GU014L1V1: Demonstrate Basic ICT Skills</b>
<b>Unit Descriptor</b>	This unit covers the skills, knowledge and attitudes required to apply basic IT skills in the workplace. It specifically includes identifying common IT tools, using computer, word processing and spreadsheet applications, email and searching on internet
<b>Nominal Hours</b>	<b>30 Hours</b>
<b>Elements of Competency</b>	<b>Performance Criteria</b> <b><u>Bold underlined</u></b> terms are elaborated in the Range of Variables
1. Identify and use commonly used ICT tools	1.1 Information and Communication Technology (ICT) is described 1.2 Commonly used <b><u>ICT tools</u></b> are identified and described.
2. Use computer	2.1. Basic parts of a computer are identified 2.2. Computer peripherals are identified 2.3. Turning on and off technique of a computer is performed. 2.4. Working environment, functions and features of operating system is interpreted 2.5. Simple trouble-shooting techniques are applied.
3. Perform word processing	3.1. Word processing application software is installed 3.2. <b><u>Documents</u></b> in Bangla is created 3.3. Documents in English is created 3.4. Documents are formatted and saved 3.5. Documents are printed Saved and retrieved as per requirements
4. Work with spreadsheets	4.1. Spreadsheet working environment, functions and features are identified and interpreted. 4.2. Data entry on spreadsheet appropriate to perform activity is performed. 4.3. <b><u>Data manipulation techniques</u></b> to spreadsheet document are applied. 4.4. Spreadsheet document is created and saved.
5. Use internet	5.1. Different <b><u>browsers</u></b> to work online are selected and installed 5.2. Browse different web portals and apply proper search techniques. 5.3. Facebook account is created and operated 5.4. Email account is created 5.5. Email is accessed, written and sent following standard procedure.
<b>Range of Variables</b>	
<b>Variable</b>	<b>Range</b> (may include but not limited to):

1. ICT tools	<ul style="list-style-type: none"> <li>1.1. Cell phone</li> <li>1.2. Tablets</li> <li>1.3. Computers, laptops, notebooks</li> <li>1.4. Internet</li> <li>1.5. Software</li> <li>1.6. Satellite</li> </ul>
2. Documents	<ul style="list-style-type: none"> <li>2.1. Personal CV</li> <li>2.2. Official letter</li> <li>2.3. Bills</li> <li>2.4. Voucher</li> <li>2.5. Job card</li> <li>2.6. Work order</li> </ul>
3. Data manipulation techniques	<ul style="list-style-type: none"> <li>3.1 Sum</li> <li>3.2 Average</li> <li>3.3 Count</li> <li>3.4 Max</li> <li>3.5 Min</li> <li>3.6 Sort</li> <li>3.7 Fill</li> <li>3.8 Header</li> <li>3.9 Footer</li> <li>3.10 Print</li> </ul>
4. Browsers	<ul style="list-style-type: none"> <li>4.1 Opera</li> <li>4.2 Firefox</li> <li>4.3 Google chrome</li> </ul>
<p><b>Evidence Guide</b></p> <p>The evidence must be authentic, valid, sufficient, reliable, consistent, recent and meet all requirements of current version of the Unit of Competency.</p>	
1. Critical aspects of competency	<p>Assessment must evidence that the candidate:</p> <ul style="list-style-type: none"> <li>1.1. Identified commonly used IT tools</li> <li>1.2. Performed simple trouble-shooting with computer</li> <li>1.3. Performed typing on word processing software, saved and retrieved documents</li> <li>1.4. Performed data entry with spreadsheet</li> <li>1.5. Used email account for different online purposes</li> </ul>
2. Underpinning knowledge	<ul style="list-style-type: none"> <li>2.1. Describe ICT</li> <li>2.2. Use of most commonly used ICT tools</li> <li>2.3. Describe word processing</li> <li>2.4. Use of spread sheet</li> <li>2.5. Computer hardware</li> <li>2.6. Computer software</li> <li>2.7. Peripheral devices</li> <li>2.8. Functions of spread sheet</li> <li>2.9. Email</li> <li>2.10. Facebook</li> </ul>
3. Underpinning skills	<ul style="list-style-type: none"> <li>3.1. Handling tools and equipment</li> <li>3.2. Demonstrating simple trouble-shooting with computer</li> <li>3.3. Demonstrating typing on word processing software</li> <li>3.4. Demonstrating data entry with spreadsheet</li> </ul>

	3.5. Opening email account and using it for different purposes
4. Underpinning attitude	4.1 Commitment to occupational health and safety 4.2 Promptness in carrying out activities 4.3 Sincere and honest to duties 4.4 Environmental concerns 4.5 Eagerness to learn 4.6 Tidiness and timeliness 4.7 Respect for rights of peers and seniors in workplace 4.8 Communication with peers and seniors in workplace
5. Resource implications	The following resources must be provided: 5.1 Computer lab/ICT lab 5.2 Materials relevant to the proposed activity 5.3 Tools, equipment and material 5.4 Relevant specifications or work instructions
6. Methods of assessment	Methods of assessment may include but not limited to: 6.1 Written test 6.2 Demonstration 6.3 Oral questioning 6.4 Portfolio
7. Context of assessment	7.1 Competency assessment must be done in a training center or in an actual or simulated work place after Completion of the training module 7.2 Assessment should be done by NSDA certified assessor
<b>Accreditation Requirements</b> Training Providers must be accredited by NSDA, the National Quality Assurance Body, or a body with delegated authority for quality assurance to conduct training and assessment against this unit of competency for credit towards the award of national skills qualification. Accredited providers assessing against this unit of competency must meet the quality assurance requirements set by NSDA.	

# **Sector Specific Competencies**

<b>Unit Code and Title</b>	<b>GU005L3V1: Interpret Manuals, Sketches and Drawings</b>
<b>Nominal Hours</b>	20 hours
<b>Unit Descriptor</b>	This unit covers the skills, knowledge and attitudes required to read and interpret sketches and drawings. It specifically includes interpreting information and specifications, and reading and interpreting sketches and drawings.
<b>Elements of Competency</b>	<b>Performance Criteria</b> <b><u>Bold &amp; Underlined</u></b> terms are elaborated in the Range of Variables Training Components
1. Interpret information and specifications	1.1 Appropriate <b><u>manuals</u></b> for work activity are identified and collected. 1.2 Information and <b><u>specifications</u></b> in the manuals are interpreted and applied.
2. Interpret Workplace Documents	2.1 Workplace documents are interpreted as per standard. 2.2 Assistance is taken to aid comprehension when required from peers / supervisors 2.3 Visual information / symbols / signage's are understood and followed 2.4 Specific and relevant information are accessed from <b><u>appropriate sources</u></b> 2.5 Appropriate medium is used to transfer information and ideas
3. Read and interpret sketches and drawings	3.1 Relevant <b><u>sketches and drawings</u></b> are identified for job requirement. 3.2 Key <b><u>terms and abbreviations</u></b> are identified and interpreted. 3.3 <b><u>Signs and symbols</u></b> are identified and interpreted. 3.4 Schedules, dimensions, sketches, drawings and specifications are correctly read and interpreted.
4. Practice professional ethics at workplace	4.1 Responsibilities as a team member are demonstrated and kept promises and commitments made to others 4.2 Tasks are performed in accordance with workplace procedures 4.3 Confidentiality is respected and maintained 4.4 Situations and actions considered inappropriate or which present a conflict of interest are avoided
<b>Range of Variables</b>	
<b>Variable</b>	<b>Range</b> (may include but not limited to):
1. Manuals	1.1. Buyers' specification 1.2. Compliance

	<ul style="list-style-type: none"> <li>1.3. Maintenance procedure</li> <li>1.4. Periodic maintenance</li> <li>1.5. Quality assurance</li> <li>1.6. Standard operating procedure (SOP)</li> </ul>
2. Sketches and drawings	<ul style="list-style-type: none"> <li>2.1. Technical</li> <li>2.2. Measurement</li> <li>2.3. Design</li> </ul>
3. Specifications	<ul style="list-style-type: none"> <li>3.1. Product</li> <li>3.2. Performance</li> <li>3.3. Method</li> </ul>
4. Terms and abbreviations	4.1 Refers to all terms and abbreviations associated with the Automotive Field
5. Signs and symbols	5.1 Includes all signs and symbols associated with the LightEngineering Sector
<p><b>Evidence Guide</b></p> <p>The evidence must be authentic, valid, sufficient, reliable, consistent and recent and meet the requirements of the current version of the Unit of Competency</p>	
1. Critical Aspects of Competency	<ul style="list-style-type: none"> <li>1.1 Identified information and specifications</li> <li>1.2 Read and interpreted sketches and drawings</li> </ul>
2. Underpinning knowledge	<ul style="list-style-type: none"> <li>2.1. Describe Manuals</li> <li>2.2. Types of manuals</li> <li>2.3. Units of measurement</li> <li>2.4. Units of conversion</li> <li>2.5. Signs and symbols</li> <li>2.6. Define Sketch</li> <li>2.7. Define drawings</li> <li>2.8. Define specifications</li> </ul>
3. Underpinning Skills	<ul style="list-style-type: none"> <li>3.1 Interpreting performance of workplace communication and etiquette</li> <li>3.2 Interpreting workplace instructions and symbol</li> <li>3.3 Interpreting workplace code of conducts is as per organizational guidelines</li> <li>3.4 Interpreting workplace documents as per standard</li> <li>3.5 Interpreting and implementing meeting outcomes</li> </ul>
4. Underpinning Attitudes	<ul style="list-style-type: none"> <li>4.1 Commitment to occupational health and safety</li> <li>4.2 Promptness in carrying out activities</li> <li>4.3 Sincere and honest to duties</li> <li>4.4 Environmental concerns</li> <li>4.5 Eagerness to learn</li> <li>4.6 Tidiness and timeliness</li> <li>4.7 Respect for rights of peers and seniors in workplace</li> <li>4.8 Communication with peers and seniors in workplace</li> </ul>

5.Resource Implications	<p>The following resources must be provided:</p> <ul style="list-style-type: none"> <li>5.1. Workplace (simulated or actual)</li> <li>5.2. Computer/laptop/notebook</li> <li>5.3. Software</li> <li>5.4. Stationary</li> <li>5.5. Learning manual</li> <li>5.6. Fire extinguisher</li> </ul>
6.Methods of Assessment	<p>Methods of assessment may include but not limited to:</p> <ul style="list-style-type: none"> <li>6.1 Written Test</li> <li>6.2 Demonstration</li> <li>6.3 Oral Questioning</li> <li>6.4 Portfolio</li> </ul>
7.Context of Assessment	<ul style="list-style-type: none"> <li>7.1 Competency assessment must be done in a NSDA accredited assessment centre</li> <li>7.2 Assessment should be done by an NSDA certified/nominated assessor</li> </ul>
<p><b>Accreditation Requirements</b></p> <p>Training Providers must be accredited by NSDA, the National Quality Assurance Body, or a body with delegated authority for quality assurance to conduct training and assessment against this unit of competency for credit towards the award of national skills qualification. Accredited providers assessing against this unit of competency must meet the quality assurance requirements set by NSDA.</p>	

# **Occupation Specific Competencies**



<b>Unit Code and Title</b>	<b>OUAMECH001L1: Use Hand Tools and Power Tools</b>
<b>Nominal Hours</b>	20 hours
<b>Unit Descriptor</b>	This unit covers the skills, knowledge and attitudes required to use hand and power tools in the workplace. It specifically includes identifying and inspecting hand and power tools for usability, using and operating tools properly and safely, and cleaning and maintaining hand and power tools after use.
<b>Elements of Competency</b>	<b>Performance Criteria (<u>bold and underlined</u> terms are elaborated in the Range of Variables)</b>
1. Identify and inspect hand and power tools	1.1. Appropriate hand and power tools are identified. 1.2. Application of hand and power tools is recognized. 1.3. Usability of hand and power tools is checked and verified.
2. Use hand tools	2.1. Appropriate <b><u>Hand tools</u></b> are selected. 2.2. Safety precautions are ensured before using hand tools. 2.3. Unsafe or faulty hand tools are identified and marked for repair. 2.4. Use hand tools properly and safely to perform work activity.
3. Use measuring tools	3.1 Measuring requirements is identified as required 3.2 Measuring methods identified as required 3.3 <b><u>Measuring tools</u></b> is selected and collected according to measurement requirements 3.4 <b><u>Measurements</u></b> are taken accurately 3.5 Measurements are checked against job requirement 3.6 Measurements are recorded as per workplace procedure
4. Operate power tools	4.1 Appropriate <b><u>Power tools</u></b> are selected 4.2 Power supply outlet and electrical cord are inspected and confirmed safe for use in accordance with established workplace safety requirements 4.3 Safety precautions are ensured before using power tools in accordance with manufacturer's operating specification 4.4 Proper sequence of operation applied for using power tools 4.5 Unsafe or faulty power tools are identified and marked for repair 4.6 Operate power tools properly and safely to perform work activity

5. Clean and maintain tools	5.1 Dust and foreign matter is removed from hand and power tools in accordance to workplace standards. 5.2 Condition of hand and power tools is checked after use and reported. 5.3 Appropriate lubricant is applied after use and prior to storage. 5.4 Measuring tools are checked and calibrated after use. 5.5 Defective hand and power tools are inspected and repaired or replaced. 5.6 Hand and power tools are stored and secured in accordance with workplace requirements 5.7 Workplace is cleaned and waste material are disposed as per workplace procedure
<b>Range of Variables</b>	
<b>Variable</b>	<b>Range</b> (may include but not limited to):
1. Hand tools	1.1. Hacksaw 1.2. Hammer 1.3. Files 1.4. Pliers 1.5. Punches 1.6. Screwdrivers 1.7. Wrench box 1.8. Hand tap 1.9. Wire cutters 1.10. Hand hacksaw 1.11. Drill 1.12. Grinder 1.13. Dial gauge 1.14. Spanner comb 1.15. Spanner ring 1.16. Socket ratchet set 1.17. Easy opener 1.18. Top roller adjust gauge 1.19. Allen key 1.20. Top roller adjust gauge
2. Measuring tools	2.1. Gauges 2.2. Hose level 2.3. Water level 2.4. Micrometer 2.5. Multimeter 2.6. Tachometer 2.7. Thermometers 2.8. Dial indicators 2.9. Slide calipers 2.10. Tape measure 2.11. Testing lead

3. Measurements	<ul style="list-style-type: none"> <li>3.1 Measurement's length</li> <li>3.2 Measurements angles</li> <li>3.3 Measurement's diameter</li> <li>3.4 Measurement's hole</li> </ul>
4. Power tools	<ul style="list-style-type: none"> <li>4.1 Portable drilling machine</li> <li>4.2 Threading machine</li> <li>4.3 Saws</li> <li>4.4 Glue gun</li> <li>4.5 Soldering iron</li> <li>4.6 Grinders</li> </ul>
<p><b>Evidence Guide</b></p> <p>The evidence must be authentic, valid, sufficient, reliable, consistent and recent and meet the requirements of the current version of the Unit of Competency</p>	
1. Critical Aspects of Competency	<ul style="list-style-type: none"> <li>1.1 Identified information and specifications</li> <li>1.2 Read and interpreted sketches and drawings</li> </ul>
2. Underpinning knowledge	<ul style="list-style-type: none"> <li>2.1. Describe Manuals</li> <li>2.2. Types of manuals</li> <li>2.3. Units of measurement</li> <li>2.4. Units of conversion</li> <li>2.5. Signs and symbols</li> <li>2.6. Define Sketch</li> <li>2.7. Define drawings</li> <li>2.8. Define specifications</li> </ul>
3. Underpinning Skills	<ul style="list-style-type: none"> <li>3.1 Interpreting performance of workplace communication and etiquette</li> <li>3.2 Interpreting workplace instructions and symbol</li> <li>3.3 Interpreting workplace code of conducts is as per organizational guidelines</li> <li>3.4 Interpreting workplace documents as per standard</li> <li>3.5 Interpreting and implementing meeting outcomes</li> </ul>
4. Underpinning Attitudes	<ul style="list-style-type: none"> <li>4.1 Commitment to occupational health and safety</li> <li>4.2 Promptness in carrying out activities</li> <li>4.3 Sincere and honest to duties</li> <li>4.4 Environmental concerns</li> <li>4.5 Eagerness to learn</li> <li>4.6 Tidiness and timeliness</li> <li>4.7 Respect for rights of peers and seniors in workplace</li> <li>4.8 Communication with peers and seniors in workplace</li> </ul>
5. Resource Implications	<p>The following resources must be provided:</p> <ul style="list-style-type: none"> <li>5.1 Workplace (simulated or actual)</li> <li>5.2 Computer/laptop/notebook</li> <li>5.3 Stationary</li> <li>5.4 Learning manual</li> </ul>

6. Methods of Assessment	<p>Methods of assessment may include but not limited to:</p> <ul style="list-style-type: none"> <li>6.1 Written Test</li> <li>6.2 Demonstration</li> <li>6.3 Oral Questioning</li> <li>6.4 Portfolio</li> </ul>
7. Context of Assessment	<ul style="list-style-type: none"> <li>7.1 Competency assessment must be done in a NSDA accredited assessment centre</li> <li>7.2 Assessment should be done by an NSDA certified/nominated assessor</li> </ul>
<p><b>Accreditation Requirements</b></p> <p>Training Providers must be accredited by NSDA, the National Quality Assurance Body, or a body with delegated authority for quality assurance to conduct training and assessment against this unit of competency for credit towards the award of national skills qualification. Accredited providers assessing against this unit of competency must meet the quality assurance requirements set by NSDA.</p>	

<b>Unit Code and Title</b>	<b>OUAMECH002L1: Interpret Major System of Automobiles</b>
<b>Nominal Hours</b>	<b>35 Hours</b>
<b>Unit Descriptor</b>	<p>This unit covers the skills, knowledge and attitudes required to identify the major components of an engine.</p> <p>It specifically includes identifying types of engine and major components of engine.</p>
<b>Elements of Competency</b>	<p><b>Performance Criteria</b>  <b><u>Bold and Underlined</u></b> terms are elaborated in the Range of Variables.</p>
1. Identify automobile	<p>1.1 The term automobile is explained</p> <p>1.2 Types of automobiles are described</p> <p>1.3 Types of engines are identified</p> <p>1.4 Working principle of different engines are explained</p>
2. Identify major system of automobile	<p>2.1 <b><u>Major components of automobile</u></b> are identified</p> <p>2.2 <b><u>Major components of engine</u></b> are identified.</p> <p>2.3 Functions of Major components of engine are described</p> <p>2.4 Major <b><u>system of automobile</u></b> is identified</p> <p>2.5 Functions of Major system of automobile are described</p>
<b>Range of Variables</b>	
<b>Variables</b>	<b>Range</b> (may include but not limited to):
1. Major components of automobile	<p>1.1 Body:</p> <p>1.1.1 Frame</p> <p>1.1.2 Window</p> <p>1.1.3 Roof</p> <p>1.1.4 Door</p> <p>1.1.5 Windshield</p> <p>1.1.6 Engine hood</p> <p>1.1.7 Trak lid</p> <p>1.1.8 Dash board</p> <p>1.1.9 Bumper</p> <p>1.2 Chassis:</p> <p>1.2.1 Suspension system</p> <p>1.2.2 Steering system</p> <p>1.2.3 Wheel</p> <p>1.2.4 Brake</p> <p>1.2.5 Power Train</p> <p>1.2.6 Engine</p> <p>1.2.7 Transmission drive train</p>

2. Major components of engine	<ul style="list-style-type: none"> <li>2.1. Engine head</li> <li>2.2. Engine block</li> <li>2.3. Oil pan</li> <li>2.4. Piston</li> <li>2.5. Connecting rod</li> <li>2.6. Crankshaft</li> <li>2.7. Camshaft</li> <li>2.8. Engine valves</li> <li>2.9. Fly wheel</li> <li>2.10. Bearing</li> <li>2.11. Water pump</li> <li>2.12. Oil slump</li> <li>2.13. Manifolds</li> </ul>
3. System of automobile	<ul style="list-style-type: none"> <li>3.1 Lubricating</li> <li>3.2 Ignition</li> <li>3.3 Starting</li> <li>3.4 Cooling</li> <li>3.5 Suspension</li> <li>3.6 Brake</li> <li>3.7 Power transmission</li> <li>3.8 Intake</li> <li>3.9 Exhaust</li> <li>3.10 Charging</li> <li>3.11 Emission</li> <li>3.12 Electrical and electronic</li> </ul>
<p><b>Evidence Guide</b> The evidence must be authentic, valid, sufficient, reliable, consistent and recent and meet the requirements of the current version of the Unit of Competency.</p>	
1. Critical aspects of competency	<p>Assessment required evidence that the candidate:</p> <ul style="list-style-type: none"> <li>1.1. Read and interpreted specifications and instructions</li> <li>1.2. Identified major components of service system</li> <li>1.3. Described functions of major components</li> <li>1.4. Tested and replaced major components as required</li> </ul>
2. Underpinning knowledge	<ul style="list-style-type: none"> <li>2.1 Define Automobile</li> <li>2.2 Classify automobile</li> <li>2.3 Describe automobile engine</li> <li>2.4 State the working principle of different types of automobile engine</li> <li>2.5 Define suspension system</li> <li>2.6 Function of suspension system</li> <li>2.7 Classification of suspension system</li> <li>2.8 Component of suspension system</li> <li>2.9 Functions of components</li> <li>2.10 List the different system of automobile</li> <li>2.11 Explain the working principle of different types of automobile system</li> <li>2.12 List the Component of different system</li> <li>2.13 State the functions of components of different types of automobile system</li> </ul>

3. Underpinning skills	<ul style="list-style-type: none"> <li>3.1 Reading and interpreting specifications and instructions</li> <li>3.2 Practicing workplace safety</li> <li>3.3 Handling tools and equipment</li> <li>3.4 Planning for own activities</li> </ul>
4. Underpinning attitudes	<ul style="list-style-type: none"> <li>4.1 Commitment to occupational health and safety</li> <li>4.2 Environmental concerns</li> <li>4.3 Eagerness to learn</li> <li>4.4 Tidiness and timeliness</li> <li>4.5 Respect for rights of peers and seniors in workplace</li> </ul>
5. Resource implications	<ul style="list-style-type: none"> <li>5.1 Adequate workplaces</li> <li>5.2 Suspension components</li> <li>5.3 Service manuals</li> <li>5.4 Tools and equipment for performing work activities</li> <li>5.5 Fire extinguisher</li> </ul>
6. Methods of assessment	<ul style="list-style-type: none"> <li>6.1. Workplace observation</li> <li>6.2. Demonstration</li> <li>6.3. Oral questioning</li> <li>6.4. Written test</li> <li>6.5. Portfolio</li> </ul>
7. Context of assessment	<ul style="list-style-type: none"> <li>7.1 Competency assessment must be done in NSDA accredited assessment centre</li> <li>7.2 Assessment should be done by a NSDA certified/nominated assessor</li> </ul>
<p><b>Accreditation Requirements</b></p> <p>Training Providers must be accredited by NSDA, the National Quality Assurance Body, or a body with delegated authority for quality assurance to conduct training and assessment against this unit of competency for credit towards the award of national skills qualification. Accredited providers assessing against this unit of competency must meet the quality assurance requirements set by NSDA.</p>	

<b>Unit Code and Title</b>	<b>OUAMECH003L1: Service and Repair Suspension System</b>
<b>Nominal Hours</b>	<b>20 Hours</b>
<b>Unit Descriptor</b>	<p>This unit covers the skills, knowledge and attitudes required to perform Service suspension system.</p> <p>It specifically includes diagnose Faults in Suspension System and servicing suspension system</p>
<b>Elements of Competency</b>	<p><b>Performance Criteria</b>  <b><u>Bold and Underlined</u></b> terms are elaborated in the Range of Variables.</p>
1. Diagnose Faults in Suspension System	<p>1.1 Appropriate personal protective equipment (PPE) is selected and collected and worn</p> <p>1.2 Specifications and instructions are interpreted</p> <p>1.3 Clint's requirements are accessed and recorded as per workplace standard</p> <p>1.4 Test drive is performed to verify abnormal noise/stability and vibrations</p> <p>1.5 Lifted-up and physical inspection of the <b><u>components</u></b> are performed to identify abnormal wear/tear and movements</p> <p>1.6 Ground clearance is performed according to manufacturer specifications</p>
2. Service and repair suspension system	<p>2.1 Select and collect <b><u>tools and equipment</u></b> as per job requirements</p> <p>2.2 Select and collect <b><u>materials and consumables</u></b> as per requirement</p> <p>2.3 Components are fixed or replaced as required as per set standards</p> <p>2.4 Components are lubricated as required</p>
3. Clean and store tools and equipment	<p>3.1 Tools and equipment are cleaned and stored</p> <p>3.2 Waste material are disposed as per workplace procedure</p> <p>3.3 Workplace is cleaned as per workplace standard</p>
<b>Range of Variables</b>	
<b>Variables</b>	<b>Range</b> (may include but not limited to):
1. Components	<p>1.1 Coil spring</p> <p>1.2 Leaf spring</p> <p>1.3 Spring seat</p> <p>1.4 Torsion bar</p> <p>1.5 Panhard rod</p> <p>1.6 Shock absorber</p> <p>1.7 Shock absorber mountings</p> <p>1.8 Upper Arm</p> <p>1.9 Lower Arm</p>



	<ul style="list-style-type: none"> <li>1.10 Stabilizer bar</li> <li>1.11 Stabilizer bush</li> <li>1.12 Cross member</li> <li>1.13 Stud bar</li> <li>1.14 Arm bush</li> <li>1.15 Link rod</li> <li>1.16 Rubber pad</li> </ul>
2. Tools and equipment	<ul style="list-style-type: none"> <li>2.1. Hydraulic jack</li> <li>2.2. Wheel wrench</li> <li>2.3. Car stand</li> <li>2.4. Socket wrench set</li> <li>2.5. Combination wrench set</li> <li>2.6. Coil spring compressor</li> <li>2.7. Ball pein hammer</li> <li>2.8. Tray</li> <li>2.9. Tyre lever</li> <li>2.10.Flat Screw driver</li> <li>2.11.Philip’s screw driver set</li> <li>2.12.Cold chisel</li> <li>2.13.Impact wrench</li> <li>2.14.Table vice</li> </ul>
3. Materials and consumables	<ul style="list-style-type: none"> <li>3.1 Waste cotton</li> <li>3.2 Kerosine oil</li> <li>3.3 Suspension fluid</li> <li>3.4 Emery cloth</li> </ul>
<p><b>Evidence Guide</b></p> <p>The evidence must be authentic, valid, sufficient, reliable, consistent and recent and meet the requirements of the current version of the Unit of Competency.</p>	
1. Critical aspects of competency	<p>Assessment required evidence that the candidate:</p> <ul style="list-style-type: none"> <li>1.1. Diagnosed faults in suspension systems</li> <li>1.2. Serviced and repaired suspension system</li> <li>1.3. Cleaned and stored tools and equipment</li> </ul>
2. Underpinning knowledge	<ul style="list-style-type: none"> <li>2.1. Define suspension system</li> <li>2.2. Function of suspension system</li> <li>2.3. Classification of suspension system</li> <li>2.4. Component of suspension system</li> <li>2.5. Functions of components</li> </ul>
3. Underpinning skills	<ul style="list-style-type: none"> <li>3.1 Practicing workplace safety</li> <li>3.2 Handling tools and equipment</li> <li>3.3 Planning for own activities</li> </ul>
4. Underpinning attitudes	<ul style="list-style-type: none"> <li>4.1 Commitment to occupational health and safety</li> <li>4.2 Environmental concerns</li> <li>4.3 Eagerness to learn</li> <li>4.4 Tidiness and timeliness</li> </ul>

	4.5 Respect for rights of peers and seniors in workplace
5. Resource implications	5.1 Adequate workplaces 5.2 Suspension components 5.3 Service manuals 5.4 Tools and equipment for performing work activities 5.5 Fire extinguisher
6. Methods of assessment	6.1 Workplace observation 6.2 Demonstration 6.3 Oral questioning 6.4 Written test 6.5 Portfolio
7. Context of assessment	7.1 Competency assessment must be done in NSDA accredited assessment centre 7.2 Assessment should be done by a NSDA certified/nominated assessor
<p><b>Accreditation Requirements</b></p> <p>Training Providers must be accredited by NSDA, the National Quality Assurance Body, or a body with delegated authority for quality assurance to conduct training and assessment against this unit of competency for credit towards the award of national skills qualification. Accredited providers assessing against this unit of competency must meet the quality assurance requirements set by NSDA.</p>	

<b>Unit Code and Title</b>	<b>OUAMECH004L1: Service Cooling System</b>
<b>Nominal Hours</b>	<b>20 Hours</b>
<b>Unit Descriptor</b>	<p>This unit covers the skills, knowledge and attitudes required to perform Service cooling system.</p> <p>It specifically includes preparing for work and servicing cooling system</p>
<b>Elements of Competency</b>	<p><b>Performance Criteria</b>  <b><u>Bold and Underlined</u></b> terms are elaborated in the Range of Variables.</p>
1. Prepare for work	<p>1.1 Specifications and instructions are interpreted</p> <p>1.2 Identify and select appropriate personal protective equipment(PPE).</p> <p>1.3 Identify and select job specific <b><u>tools and equipment</u></b>.</p>
2. Service Cooling system	<p>2.1. <b><u>Components of cooling system</u></b> are identified.</p> <p>2.2. Functions of major components are described</p> <p>2.3. Components are tested and replaced as required</p> <p>2.4. Cooling system bleed as required</p> <p>2.5. Cooling system is refilled as required</p>
3. Clean and store tools and equipment	<p>3.1 Tools and equipment are cleaned and stored</p> <p>3.2 Waste material are disposed as per workplace procedure</p> <p>3.3 Workplace is cleaned as per workplace standard</p>
<b>Range of Variables</b>	
<b>Variables</b>	<b>Range</b> (may include but not limited to):
1. Tools and equipment.	<p>1.1 Hydraulic jack</p> <p>1.2 Car stand</p> <p>1.3 Socket wrench set</p> <p>1.4 Combination wrench set</p> <p>1.5 Bleeding tools as per vehicle type</p> <p>1.6 Tray</p> <p>1.7 Flat Screw driver</p> <p>1.8 Philip’s screw driver set</p> <p>1.9 AVO Meter/oscilloscope</p> <p>1.10 Hose clamp pliers</p> <p>1.11 Cooling system pressure gauge</p> <p>1.12 Leak detector</p> <p>1.13 Coolant quality / Ratio tester</p>

2. Components of cooling system	<ul style="list-style-type: none"> <li>2.1 Radiator</li> <li>2.2 Cap</li> <li>2.3 Water pump (Mechanical / Electric)</li> <li>2.4 Thermostat valve</li> <li>2.5 Cooling fan</li> <li>2.6 Hose</li> <li>2.7 Temperature sensors</li> <li>2.8 Temperature switch</li> <li>2.9 Temperature gauge</li> <li>2.10 Reserve Tank</li> </ul>
<p><b>Evidence Guide</b></p> <p>The evidence must be authentic, valid, sufficient, reliable, consistent and recent and meet the requirements of the current version of the Unit of Competency.</p>	
1. Critical aspects of competency	<p>Assessment required evidence that the candidate:</p> <ul style="list-style-type: none"> <li>1.1 Prepared for work</li> <li>1.2 Serviced cooling system</li> <li>1.3 Cleaned and stored tools and equipment</li> </ul>
2. Underpinning Knowledge	<ul style="list-style-type: none"> <li>2.1. Define cooling system</li> <li>2.2. Function of cooling system</li> <li>2.3. Classification of cooling system</li> <li>2.4. Component of cooling system</li> <li>2.5. Functions of components</li> <li>2.6. Bleeding</li> <li>2.7. Coolant</li> </ul>
3. Underpinning skills	<ul style="list-style-type: none"> <li>3.1 Reading and interpreting specifications and instructions</li> <li>3.2 Practicing workplace safety</li> <li>3.3 Handling tools and equipment</li> <li>3.4 Planning for own activities</li> <li>3.5 Servicing cooling system</li> <li>3.6 Cleaning tools and equipment</li> <li>3.7 Cleaning workplace</li> </ul>
4. Underpinning attitudes	<ul style="list-style-type: none"> <li>4.1 Commitment to occupational health and safety</li> <li>4.2 Environmental concerns</li> <li>4.3 Eagerness to learn</li> <li>4.4 Tidiness and timeliness</li> <li>4.5 Respect for rights of peers and seniors in workplace</li> </ul>
5. Resource implications	<ul style="list-style-type: none"> <li>5.1 Adequate workplaces</li> <li>5.2 Cooling system components</li> <li>5.3 Service manuals</li> <li>5.4 Tools and equipment for performing work activities</li> <li>5.5 Fire extinguisher</li> </ul>
6. Methods of assessment	<ul style="list-style-type: none"> <li>6.1 Workplace observation</li> <li>6.2 Demonstration</li> </ul>

	6.3 Oral questioning 6.4 Written test 6.5 Portfolio
7. Context of assessment	7.1 Competency assessment must be done in NSDA accredited assessment centre 7.2 Assessment should be done by a NSDA certified/nominated assessor
<p><b>Accreditation Requirements</b></p> <p>Training Providers must be accredited by NSDA, the National Quality Assurance Body, or a body with delegated authority for quality assurance to conduct training and assessment against this unit of competency for credit towards the award of national skills qualification. Accredited providers assessing against this unit of competency must meet the quality assurance requirements set by NSDA.</p>	

<b>Unit Code and Title</b>	<b>OUAMECH005L1: Service Lubricating System</b>
<b>Nominal Hours</b>	<b>20 Hours</b>
<b>Unit Descriptor</b>	<p>This unit covers the skills, knowledge and attitudes required to perform Service Lubricating system.</p> <p>It specifically includes preparing for work and servicing lubricating system</p>
<b>Elements of Competency</b>	<p><b>Performance Criteria</b>  <b><u>Bold and Underlined</u></b> terms are elaborated in the Range of Variables.</p>
1. Prepare for work	<p>1.1 Specifications and instructions are interpreted.</p> <p>1.2 Personal protective equipment (PPE) is selected and worn</p> <p>1.3 Job specific tools and equipment is identified and selected.</p> <p>1.4 Materials and consumables are selected as per requirements</p>
2. Service and repair Lubricating system	<p>2.1 Components of Lubricating system are identified.</p> <p>2.2 Components are tested following service manual/manufacturer's instruction</p> <p>2.3 Components are serviced or replaced as per SOP</p> <p>2.4 Lubricating system is flashed as required</p> <p>2.5 Lubricating system is refilled/top up as required</p>
3. Clean and store tools and equipment	<p>3.1 Tools and equipment are cleaned and stored</p> <p>3.2 Waste material are disposed as per workplace procedure</p> <p>3.3 Workplace is cleaned as per workplace standard</p>
<b>Range of Variables</b>	
<b>Variables</b>	<b>Range</b> (may include but not limited to):
1. Tools and equipment	<p>1.1 Hydraulic jack</p> <p>1.2 Car stand</p> <p>1.3 Socket wrench set</p> <p>1.4 Combination wrench set</p> <p>1.5 Tray</p> <p>1.6 Flat Screw driver</p> <p>1.7 Philip's screw driver set</p> <p>1.8 AVO Meter</p> <p>1.9 pliers</p> <p>1.10Lubricating system pressure gauge</p> <p>1.11 Oil extractor machine</p> <p>1.12 Filter opening wrench</p> <p>1.13 Funnel</p>
2. Materials and	2.1 Lubricating oil

consumables	<ul style="list-style-type: none"> <li>2.2 Flashing oil</li> <li>2.3 Waste cotton</li> <li>2.4 Napkin</li> <li>2.5 Tissue paper</li> </ul>
3. Components of Lubricating system	<ul style="list-style-type: none"> <li>3.1 Oil filter</li> <li>3.2 Oil Pump assembly</li> <li>3.3 Oil Filler cap</li> <li>3.4 Oil sump/pan</li> <li>3.5 Oil Strainer</li> <li>3.6 Baffle plate</li> <li>3.7 Oil Cooler</li> <li>3.8 Oil Pressure switch</li> <li>3.9 Oil Pressure Gauge</li> <li>3.10 Oil pressure indicator lamp</li> <li>3.11 Dip stick Gauge</li> <li>3.12 Drain Plug</li> <li>3.13 Oil seal</li> </ul>
<p><b>Evidence Guide</b></p> <p>The evidence must be authentic, valid, sufficient, reliable, consistent and recent and meet the requirements of the current version of the Unit of Competency.</p>	
1. Critical aspects of competency	<p>Assessment required evidence that the candidate:</p> <ul style="list-style-type: none"> <li>1.1 Read and interpreted specifications and instructions</li> <li>1.2 Identified Components of Lubricating system.</li> <li>1.3 Tested Components</li> <li>1.4 Serviced or replaced components as per SOP</li> <li>1.5 Flashed lubricating system</li> <li>1.6 Refilled lubricating system</li> </ul>
2. Underpinning knowledge	<ul style="list-style-type: none"> <li>2.1 Define Lubricating system</li> <li>2.2 Function of Lubricating system</li> <li>2.3 Classification of Lubricating system</li> <li>2.4 Component of Lubricating system</li> <li>2.5 Functions of components</li> <li>2.6 Define Lubricants</li> <li>2.7 Flashing</li> <li>2.8 Refilling</li> </ul>
3. Underpinning skills	<ul style="list-style-type: none"> <li>3.1 Reading and interpreting specifications and instructions</li> <li>3.2 Practicing workplace safety</li> <li>3.3 Handling tools and equipment</li> <li>3.4 Planning for own activities</li> <li>3.5 Servicing and repairing lubricating system</li> <li>3.6 Cleaning tools and equipment</li> <li>3.7 Cleaning workplace</li> </ul>

4. Underpinning attitudes	4.1 Commitment to occupational health and safety 4.2 Environmental concerns 4.3 Eagerness to learn 4.4 Tidiness and timeliness 4.5 Respect for rights of peers and seniors in workplace
5. Resource implications	5.1 Adequate workplaces 5.2 Lubricating system components 5.3 Service manuals 5.4 Tools and equipment for performing work activities 5.5 Fire extinguisher
6. Methods of assessment	6.1 Workplace observation 6.2 Demonstration 6.3 Oral questioning 6.4 Written test 6.5 Portfolio
7. Context of assessment	7.1 Competency assessment must be done in NSDA accredited assessment center 7.2 Assessment should be done by a NSDA certified/nominated assessor
<p><b>Accreditation Requirements</b></p> <p>Training Providers must be accredited by NSDA, the National Quality Assurance Body, or a body with delegated authority for quality assurance to conduct training and assessment against this unit of competency for credit towards the award of National Skills qualification. Accredited providers assessing against this unit of competency must meet the quality assurance requirements set by NSDA.</p>	



<b>Unit Code and Title</b>	<b>OUAMECH006L1: Service and Repair Starting System</b>
<b>Nominal Hours</b>	<b>20 Hours</b>
<b>Unit Descriptor</b>	This unit covers the skills, knowledge and attitudes required to perform Service Starting system. It specifically includes preparing for work and servicing cooling system
<b>Elements of Competency</b>	<b>Performance Criteria</b> <b><u>Bold and Underlined</u></b> terms are elaborated in the Range of Variables.
1. Prepare for work	1.1 Specifications and instructions are interpreted. 1.2 Personal protective equipment (PPE) is identified and selected. 1.3 Job specific tools and equipment is identified and selected. 1.4 Materials and consumables are selected as per requirements
2. Service Starting system	2.1 Components of Starting system are identified. 2.2 Components are tested following service manual/manufacturer's instruction 2.3 Components are serviced or replaced as required following service manual
3. Clean and store tools and equipment	3.1 Tools and equipment are cleaned and stored 3.2 Waste material are disposed as per workplace procedure 3.3 Workplace is cleaned as per workplace standard
<b>Range of Variables</b>	
<b>Variables</b>	<b>Range</b> (may include but not limited to):
1. Tools and equipment.	1.1 Screw Driver Set 1.2 Allen Key set 1.3 L- Wrench 1.4 Open Ended wrench 1.5 AVO meter 1.6 Battery Load Tester 1.7 Hydro meter 1.8 Test lamp 1.9 Battery Test Scanner 1.10Combination pliers 1.11Auto Scanner

2. Materials and consumables	<ul style="list-style-type: none"> <li>2.1 Fuses</li> <li>2.2 Waste cotton</li> <li>2.3 Napkin</li> <li>2.4 Tissue paper</li> </ul>
3. Components of starting system	<ul style="list-style-type: none"> <li>3.1 Starting Motor</li> <li>3.2 Battery</li> <li>3.3 Starting Relay</li> <li>3.4 Fuses</li> <li>3.5 Ignition switch</li> <li>3.6 Neutral Starter switch</li> <li>3.7 Solenoid switch</li> </ul>
<p><b>Evidence Guide</b></p> <p>The evidence must be authentic, valid, sufficient, reliable, consistent and recent and meet the requirements of the current version of the Unit of Competency.</p>	
1. Critical aspects of competency	<p>Assessment required evidence that the candidate:</p> <ul style="list-style-type: none"> <li>1.1 Read and interpreted specifications and instructions</li> <li>1.2 Components of Starting system are identified.</li> <li>1.3 Components are tested following service manual/manufacturer's instruction</li> <li>1.4 Components are serviced or replaced as required following service manual</li> </ul>
2. Underpinning knowledge	<ul style="list-style-type: none"> <li>2.1 Define Starting system</li> <li>2.2 Function of Starting system</li> <li>2.3 Classification of Starting system</li> <li>2.4 Components of Starting system</li> <li>2.5 Function of components</li> <li>2.6 Common faults in starting system</li> </ul>
3. Underpinning skills	<ul style="list-style-type: none"> <li>3.1 Reading and interpreting specifications and instructions</li> <li>3.2 Practicing workplace safety</li> <li>3.3 Handling tools and equipment</li> <li>3.4 Planning for own activities</li> <li>3.5 Servicing starting system</li> <li>3.6 Cleaning tools and equipment</li> <li>3.7 Cleaning workplace</li> </ul>
4. Underpinning attitudes	<ul style="list-style-type: none"> <li>4.1 Commitment to occupational health and safety</li> <li>4.2 Environmental concerns</li> <li>4.3 Eagerness to learn</li> <li>4.4 Tidiness and timeliness</li> <li>4.5 Respect for rights of peers and seniors in workplace</li> </ul>
5. Resource implications	<ul style="list-style-type: none"> <li>5.1 Adequate workplaces</li> </ul>

	<ul style="list-style-type: none"> <li>5.2 Starting system components</li> <li>5.3 Service manuals</li> <li>5.4 Tools and equipment for performing work activities</li> <li>5.5 Fire extinguisher</li> </ul>
6. Methods of assessment	<ul style="list-style-type: none"> <li>6.1 Workplace observation</li> <li>6.2 Demonstration</li> <li>6.3 Oral questioning</li> <li>6.4 Written test</li> <li>6.5 Portfolio</li> </ul>
7. Context of assessment	<ul style="list-style-type: none"> <li>7.1 Competency assessment must be done in NSDA accredited assessment center</li> <li>7.2 Assessment should be done by a NSDA certified/nominated assessor</li> </ul>
<p><b>Accreditation Requirements</b></p> <p>Training Providers must be accredited by NSDA, the National Quality Assurance Body, or a body with delegated authority for quality assurance to conduct training and assessment against this unit of competency for credit towards the award of National Skills Qualification. Accredited providers assessing against this unit of competency must meet the quality assurance requirements set by NSDA.</p>	

<b>Unit Code and Title</b>	<b>OUAMECH007L1: Service and Repair Fuel System</b>
<b>Nominal Hours</b>	<b>20 Hours</b>
<b>Unit Descriptor</b>	This unit covers the skills, knowledge and attitudes required to perform Service fuel system. It specifically includes preparing for work and servicing fuel system
<b>Elements of Competency</b>	<b>Performance Criteria</b> <b><u>Bold and Underlined</u></b> terms are elaborated in the Range of Variables.
1. Prepare for work	1.1 Specifications and instructions are interpreted 1.2 Appropriate personal protective equipment (PPE) is identified and selected. 1.3 Job specific tools and equipment is identified and selected. 1.4 Materials and consumables are selected as per requirements
2. Service conventional Fuel system for Gasoline Engine	2.1. Components of conventional Fuel system for Gasoline Engine are identified. 2.2. Components are tested as per standard procedure 2.3. Components are replaced and repaired as per requirements
3. Service conventional Fuel system for Diesel Engine	3.1 Components of conventional fuel system for Diesel Engine are identified. 3.2 Major components are tested as per standard procedure 3.3 Major components are replaced and repair as per requirements
4. Clean and store tools and equipment	4.1 Tools and equipment are cleaned and stored 4.2 Waste material are disposed as per workplace procedure 4.3 Workplace is cleaned as per workplace standard
<b>Range of Variables</b>	
<b>Variables</b>	<b>Range</b> (may include but not limited to):
1. Tools and equipment.	1.1 Screw Driver Set 1.2 Allen Key set 1.3 L- Wrench 1.4 Open Ended wrench 1.5 AVO meter 1.6 Combination pliers 1.7 Auto Scanner 1.8 Special service tools (SST)

	<ul style="list-style-type: none"> <li>1.9 Fuel pressure Gauge</li> <li>1.10 Injector Tester</li> <li>1.11 Fuel Pump Tester</li> </ul>
2. Materials and consumables	<ul style="list-style-type: none"> <li>2.1. Diesel</li> <li>2.2. Kerosine</li> <li>2.3. Thinner</li> <li>2.4. Octane</li> <li>2.5. Injector cleaning Agent</li> <li>2.6. Waste cotton</li> <li>2.7. Napkin</li> <li>2.8. Tissue paper</li> </ul>
3. Components of fuel system	<ul style="list-style-type: none"> <li>3.1 Fuel Tank</li> <li>3.2 Gas Cap</li> <li>3.3 Fuel Strainer</li> <li>3.4 Fuel Hose &amp; Line</li> <li>3.5 Fuel filter (Primary &amp; Secondary)</li> <li>3.6 Fuel Feed pump</li> <li>3.7 Water Separator</li> <li>3.8 Fuel High pressure Pump</li> <li>3.9 Injector (gasoline &amp; Diesel)</li> <li>3.10 Fuel Gauge (meter)</li> <li>3.11 Fuel Sending unit</li> </ul>
<b>Evidence Guide</b>	
The evidence must be authentic, valid, sufficient, reliable, consistent and recent and meet the requirements of the current version of the Unit of Competency.	
1. Critical aspects of competency	<p>Assessment required evidence that the candidate:</p> <ul style="list-style-type: none"> <li>1.1 Interpret specifications and instructions</li> <li>1.2 Components of Fuel system are identified.</li> <li>1.3 Components are tested as per standard procedure</li> <li>1.4 Components are replaced and repaired as per requirements</li> </ul>
2. Underpinning knowledge	<ul style="list-style-type: none"> <li>2.1. Define Fuel system</li> <li>2.2. Function of Fuel system</li> <li>2.3. Classification of Fuel system</li> <li>2.4. Component of Fuel system</li> <li>2.5. Function of components</li> <li>2.6. Faults occurred in fuel system</li> <li>2.7. Causes of faults</li> </ul>
3. Underpinning skills	<ul style="list-style-type: none"> <li>3.1 Reading and interpreting specifications and instructions</li> <li>3.2 Practicing workplace safety</li> <li>3.3 Handling tools and equipment</li> </ul>

	<ul style="list-style-type: none"> <li>3.4 Planning for own activities</li> <li>3.5 Testing and repairing components</li> <li>3.6 Testing and repairing major components</li> <li>3.7 Cleaning tools and equipment</li> </ul>
4. Underpinning attitudes	<ul style="list-style-type: none"> <li>4.1 Commitment to occupational health and safety</li> <li>4.2 Environmental concerns</li> <li>4.3 Eagerness to learn</li> <li>4.4 Tidiness and timeliness</li> <li>4.5 Respect for rights of peers and seniors in workplace</li> </ul>
5. Resource implications	<ul style="list-style-type: none"> <li>5.1 Adequate workplaces</li> <li>5.2 Starting system components</li> <li>5.3 Service manuals</li> <li>5.4 Tools and equipment for performing work activities</li> <li>5.5 Fire extinguisher</li> </ul>
6. Methods of assessment	<ul style="list-style-type: none"> <li>6.1. Workplace observation</li> <li>6.2. Demonstration</li> <li>6.3. Oral questioning</li> <li>6.4. Written test</li> <li>6.5. Portfolio</li> </ul>
7. Context of assessment	<ul style="list-style-type: none"> <li>7.1 Competency assessment must be done in NSDA accredited assessment center</li> <li>7.2 Assessment should be done by a NSDA certified/nominated assessor</li> </ul>
<p><b>Accreditation Requirements</b></p> <p>Training Providers must be accredited by NSDA, the National Quality Assurance Body, or a body with delegated authority for quality assurance to conduct training and assessment against this unit of competency for credit towards the award of National Skills Qualification. Accredited providers assessing against this unit of competency must meet the quality assurance requirements set by NSDA.</p>	

<b>Unit Code and Title</b>	<b>OUAMECH008L1: Service and Repair Ignition System</b>
<b>N0minal Hour</b>	<b>20 Hours</b>
<b>Unit Descriptor</b>	<p>This unit covers the skills, knowledge and attitudes required to perform Service Ignition system.</p> <p>It specifically includes preparing for work and servicing ignition system.</p>
<b>Elements of Competency</b>	<p><b>Performance Criteria</b>  <b><u>Bold and Underlined</u></b> terms are elaborated in the Range of Variables.</p>
1. Prepare for work	<p>1.1 Specifications and instructions are interpreted.</p> <p>1.2 Appropriate personal protective equipment (PPE) is identified and selected.</p> <p>1.3 Job specific tools and equipment is identified and selected.</p> <p>1.4 Materials and consumables are selected as per requirements</p>
2. Service Ignition system	<p>2.1. Components of Ignition system are identified</p> <p>2.2. Components are tested as per standard procedure</p> <p>2.3. Components are serviced or replaced a as per requirements</p>
3. Clean and store tools and equipment	<p>3.1 Tools and equipment are cleaned and stored</p> <p>3.2 Waste material are disposed as per workplace procedure</p> <p>3.3 Workplace is cleaned as per workplace standard</p>
<b>Range of Variables</b>	
<b>Variables</b>	<b>Range</b> (may include but not limited to):
1. Tools and equipment.	<p>1.1 Screw Driver Set</p> <p>1.2 Allen Key set</p> <p>1.3 L- Wrench</p> <p>1.4 Open Ended wrench</p> <p>1.5 AVO meter</p> <p>1.6 Oscilloscope</p> <p>1.7 Test lamp</p> <p>1.8 Battery Test Scanner</p> <p>1.9 Combination pliers</p> <p>1.10 Auto Scanner</p> <p>1.11 Timing gun</p>

2. Materials and consumables	<ul style="list-style-type: none"> <li>2.1. Fuses</li> <li>2.2. Cables</li> <li>2.3. Waste cotton</li> <li>2.4. Napkin</li> <li>2.5. Tissue paper</li> <li>2.6. Insulation tape</li> </ul>
3. Components of Ignition system	<ul style="list-style-type: none"> <li>3.1 Distributor</li> <li>3.2 Ignition coil</li> <li>3.3 Spark plug</li> <li>3.4 Ignitor</li> <li>3.5 Battery</li> <li>3.6 Cam position sensor</li> <li>3.7 Crank position sensor</li> </ul>
<b>Evidence Guide</b>	
The evidence must be authentic, valid, sufficient, reliable, consistent and recent and meet the requirements of the current version of the Unit of Competency.	
1. Critical aspects of competency	<p>Assessment required evidence that the candidate:</p> <ul style="list-style-type: none"> <li>1.1 Read and interpreted specifications and instructions</li> <li>1.2 Identified major components of cooling system</li> <li>1.3 Components are tested as per standard procedure</li> <li>1.4 Components are serviced or replaced as per requirements</li> </ul>
2. Underpinning knowledge	<ul style="list-style-type: none"> <li>2.1. Define ignition system</li> <li>2.2. Function of ignition system</li> <li>2.3. Classification of ignition system</li> <li>2.4. Component of ignition system</li> <li>2.5. Functions of components</li> <li>2.6. Faults in ignition system</li> <li>2.7. Causes of the faults</li> </ul>
3. Underpinning skills	<ul style="list-style-type: none"> <li>3.1 Reading and interpreting specifications and instructions</li> <li>3.2 Practicing workplace safety</li> <li>3.3 Handling tools and equipment</li> <li>3.4 Planning for own activities</li> <li>3.5 Servicing ignition system</li> <li>3.6 Cleaning tools and equipment</li> <li>3.7 Cleaning workplace</li> </ul>
4. Underpinning attitudes	<ul style="list-style-type: none"> <li>4.1 Commitment to occupational health and safety</li> <li>4.2 Environmental concerns</li> <li>4.3 Eagerness to learn</li> <li>4.4 Tidiness and timeliness</li> <li>4.5 Respect for rights of peers and seniors in workplace</li> </ul>



5. Resource implications	5.1 Adequate workplaces 5.2 Starting system components 5.3 Service manuals 5.4 Tools and equipment for performing work activities 5.5 Fire extinguisher
6. Methods of assessment	6.1. Workplace observation 6.2. Demonstration 6.3. Oral questioning 6.4. Written test 6.5. Portfolio
7. Context of assessment	7.1 Competency assessment must be done in NSDA accredited assessment center 7.2 Assessment should be done by a NSDA certified/nominated assessor
<p><b>Accreditation Requirements</b></p> <p>Training Providers must be accredited by NSDA, the National Quality Assurance Body, or a body with delegated authority for quality assurance to conduct training and assessment against this unit of competency for credit towards the award of National Skills Qualification. Accredited providers assessing against this unit of competency must meet the quality assurance requirements set by NSDA.</p>	

## Development of Competency Standard

The Competency Standards for National Skills Certificate in **Automotive Mechanics**,

Level-1 is developed by NSDA on 22– 25 November, 2021.

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## Validation of Competency Standard by Standard and Curriculum Validation Committee (SCVC)

The Competency Standards for National Skills Certificate in **Automotive Mechanics**, Level- 1 is validated by SCVC on 2-5 January, 2022.

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This Competency Standard for **Automotive Mechanics** is a document for the development of curricula, teaching and learning materials, and assessment tools. It also serves as the document for providing training consistent with the requirements of industry in order for individuals who graduated through the established standard via competency-based assessment to be suitably qualified for a relevant job.

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