COMPETENCY STANDARD

Motorcycle Servicing

Level: 1

(Light Engineering Sector)

Competency Standard Code: CS-LE-MCS-L1-EN-V1

National Skills Development Authority
Chief Adviser's Office
Government of the People's Republic of Bangladesh

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This Competency Standard for Motorcycle Servicing 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 to meet the qualification of individuals who graduated through the established standard via competency-based assessment for a relevant job.

This document has been validated by NSDA in association with Light Engineering Sector, industry representatives, academia, related specialist, trainer and related employee.

Public and private institutions may use the information contained in this standard for activities benefitting Bangladesh.

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 skills 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. " **Motorcycle Servicing**" is selected as one of the priority occupations of Construction 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 Bangladesh National 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 guides

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, Level-1 in Motorcycle Servicing in Light Engineering Sector

Level Descriptors of BNQF 1-6

Level & Job classification	Knowledge Domain	Skills Domain	Responsibility Domain
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 analyse, 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

CS	Competency Standard
ISC	Industry Skills Council
NSDA	National Skills Development Authority
BNQF	Bangladesh National Qualifications Framework
OSH	Occupational Safety and Health
PPE	Personal Protective Equipment
SCVC	Standards and Curriculum Validation Committee
STP	Skills Training Provider
SOP	Standard Operating Procedure
UoC	Unit of Competency
ISO	International Organization for Standardization
OSH	Occupational Safety and Health
PPE	Personal Protective Equipment
SOP	Standard Operating Procedures

Approved by

36th Authority Meeting of NSDA

Held on 26.09.2024

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Competency Standards for National Skill Certificate, Level- 1 in Motorcycle Servicing in Light Engineering Sector

Course Structure

SL No	Unit code and Title		UOC Level	Nominal (hours)
Generic Units of Competencies				
1.	GU-01-L2-V1	Perform Computations Using Basic Mathematical Concepts	2	15
2.	GU-02-L2-V1	Apply Occupational Safety and Health (OSH) Procedure in the Workplace	2	15
Sub Total				**30**
Sector Specific Units of Competencies				
3.	SU-LE-03-L1-V1	Identify tools and spares parts for motorcycle servicing	1	30
4.	SU-LE-04-L1-V1	Use measuring instruments	1	30
Sub Total				**60**
Occupation Specific Units of Competencies				
5.	OU-LE-MCS-01-L1-V1	Use motorcycle fasteners	1	20
6.	OU-LE-MCS-02-L1-V1	Change wheels and tyres	1	40
7.	OU-LE-MCS-03-L1-V1	Service motorcycle braking system	1	40
8.	OU-LE-MCS-04-L1-V1	Replace motorcycle seals, gaskets and bearings	1	20
9.	OU-LE-MCS-05-L1-V1	Service motorcycle lubricating system	1	20
10.	OU-LE-MCS-06-L1-V1	Service battery system	1	20
11.	OU-LE-MCS-07-L1-V1	Service motorcycle basic ignition system	1	30
12.	OU-LE-MCS-08-L1-V1	Service motorcycle engine	1	80
Sub Total				**270**
Total Duration				**360**

Units & Elements at Glance

Generic Competencies

Code	Unit of competency	Elements of competency	Duration (hours)
GU-01-L2-V1	Perform Computations Using Basic Mathematical Concepts	1.Identify calculation requirements in the workplace 2.Select appropriate mathematical methods for the calculation. 3.Use tool/instrument to perform calculations	15
GU-02-L2-V1	Apply Occupational Safety and Health (OSH) procedure In the Workplace	4. Identify OSH policies and procedures 5. Follow OSH procedure 6. Report hazards and risks 7. Respond to emergencies 1. Maintain personal well-being	15
		Total hours	**30**

Sector specific competencies

Code	Unit of competency	Elements of competency	Duration (hours)
SU-LE-03-L1-V1	Identify tools and spares parts for motorcycle servicing	1. Follow OSH practices 2. Identify tools and spare parts 3. Service and maintain workplace tools and spare parts	30
SU-LE-04-L1-V1	Use measuring instruments	1. Follow OSH practices 2. Select measuring tools and equipment 3. Use measuring tools and equipment	30
		Total hours	**60**

Occupation specific competencies

Code	Unit of competency	Elements of competency	Duration (hours)
OU-LE-MCS-01-L1-V1	Use motorcycle fasteners	1. Follow OSH practices 2. Identify common motorcycle fasteners 3. Use/install correct fastener	**20**
OU-LE-MCS-02-L1-V1	Change wheels and tyres	1. Follow OSH practices 2. Remove wheel assembly for inspection 3. Service rim, tyres and tubes 4. Reassemble wheel assembly 5. Clean work area and prepare motorcycle for pick up or storage	20
OU-CON-MCS-03-L1-V1	Service Motorcycle Basic Braking System	1. Follow OSH practices 2. Interpret mechanical and hydraulic brake system 3. Inspect and service disc and drum type brake systems 4. Clean work area and prepare motorcycle for pick up or storage	40
OU-LE-MCS-04-L1-V1	Replace Motorcycle Seals, Gaskets and Bearings	1. Follow OSH practices 2. Inspect seals and gaskets 3. Remove wheel assembly for inspection 4. Replace bearings 5. Clean work area and prepare motorcycle for pick up or storage	20
OU-LE-MCS-05-L1-V1	Service Motorcycle Lubricating System	1. Follow OSH practices 2. Check motorcycle lubrication points 3. Select motorcycle lubricant	20
OU-LE-MCS-06-L1-V1	Service battery system	1. Follow OSH practices 2. Prepare for battery servicing 3. Replace batteries 4. Charge batteries 5. Jump start motorcycle 6. Clean work area and prepare motorcycle for pick up or storage	20

OU-LE-MCS-07-L1-V1	Service motorcycle basic ignition system	1. Follow OSH practices 2. Inspect and service spark plugs and high-tension leads 3. Clean work area and prepare motorcycle for pick up or storage	30
OU-LE-MCS-08-L1-V1	Service motorcycle engine	1. Follow OSH practices 2. Identify different types of engines 3. Perform engine servicing	80
		Total Hours	**270**

Generic Units of Competencies

Unit Code and Title	**GU-01-L2-V1:Perform Computations Using Basic Mathematical Concepts**
Nominal Hours	**15 Hours**
Unit Descriptor	This unit of competency requires the knowledge, skills and attitude to perform computations using basic mathematical concepts in the workplace. 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.
Elements of Competency	**Performance Criteria** **Bold & Underlined** 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 **Measurements** are selected in accordance with job requirement 1.3 Calculation requirements are identified from **workplace information**
2. Select appropriate mathematical methods for the calculation.	2.1 Mathematical methods are identified 2.2 **Appropriate method** is selected to carry out the calculation r equirements 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 **tool/ instrument** is selected based on materials to be measured
Range of Variables	
Variable	**Range** (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	3.1 Addition 3.2 Subtraction 3.3 Division 3.4 Multiplication 3.5 Conversion

	3.6 Percentage and ratio calculation
4. Tool/ Instrument	4.1 Calculator 4.2 Scale 4.3 Measuring tape 4.4 Marker
Evidence Guide 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 identified calculation requirements from workplace information 1.2 selected appropriate method to carry out the calculation requirements 1.3 selected measurements 1.4 selected appropriate methods 1.5 used tool/instrument 1.6 added numbers 1.7 subtracted numbers 1.8 multiplied numbers. 1.9 divided numbers. 1.10 completed calculations using appropriate tools/instruments
2. Underpinning Knowledge	2.1. Numerical concept 2.2. Basic mathematical methods such as addition, subtraction, multiplication and division and percentage. 2.3. Mathematical language, symbols and terminology. 2.4. Measuring units
3. Underpinning Skills	3.1 Interpret numerical concept 3.2 Interpret mathematical methods such as addition, subtraction, multiplication and division and percentage. 3.3 Interpret mathematical language, symbols and terminology. 3.4 Interpret measuring units
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 4.6. Communication with peers and seniors in workplace
5. Resource Implications	5.1. Work place Procedure 5.2. Materials relevant to the proposed activity 5.3. All tools, equipment, material and documentation required. 5.4. Relevant specifications or work instructions
6. Methods of Assessment	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 center 7.2. Assessment should be done by an NSDA certified/ nominated assessor

Accreditation Requirements

Training Providers must be accredited by National Skills Development Authority (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 qualification under BNQF. Accredited providers assessing against this unit of competency must meet the quality assurance requirements set by NSDA.

Unit Code and Title	**GU-02-L2-V1: Apply Occupational Safety and Health (OSH) Procedure in the Workplace**
Unit Descriptor	This unit covers the knowledge, skills and attitudes required to apply occupational safety and health (OSH) procedure in the workplace. It specifically includes the task of identifying OSH policies and procedures, following OSH procedure, reporting hazards and risks, responding to emergencies and maintaining personal well-being.
Nominal Hours	**15 Hours**
Elements of Competency	**Performance Criteria** **Bold & Underlined** terms are elaborated in the Range of Variables
1. Identify OSH policies and procedures	1.1. **OSH policies** and **safe operating procedures** are accessed and stated 1.2. **Safety signs and symbols** are identified and followed 1.3. Emergency response, evacuation procedures and other contingency measures are determined according to workplace requirements
2. Follow OSH procedure	2.1 **Personal protective equipment (PPE)** is selected and collected as required 2.2 Personal protective equipment (PPE) is correctly used in accordance with organization OSH procedures and practices 2.3 A clear and tidy workplace is maintained as per workplace standard 2.4 PPE is maintained to keep them operational and compliant with OSH regulations
3. Report hazards and risks	3.1 **Hazards** and risks are identified, assessed and controlled 3.2 Incidents arising from hazards and risks are reported to designated authority
4. Respond to emergencies	4.1 Alarms and warning devices are responded 4.2 Workplace **emergency procedures** are followed 4.3 **Contingency measures** during workplace accidents, fire and other emergencies are recognized and followed in accordance with organization procedures 4.4 First aid procedures are applied during emergency situations
5. Maintain personal well-being	5.1 OSH policies and procedures are adhered to OSH awareness programs are participated in as per workplace guidelines and procedures.

	5.2 Corrective actions are implemented to correct unsafe condition in the workplace 5.3 **"Fit to work" records** are updated and maintained according to workplace requirements
Range of Variables	
Variables	**Range** (may include but not limited to):
1. OSH policies	1.1. Bangladesh standards for OSH 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 7.1 Decontamination
8. "Fit to Work" records	8.1 Medical Certificate every year 8.2 Accident reports, if any 8.3 Eye vision certificate
Evidence Guide 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: 1.1 stated OSH policies and safe operating procedures 1.2 followed safety signs and symbols 1.3 used personal protective equipment (PPE) 1.4 maintained workplace clear and tidy 1.5 assessed and Controlled hazards 1.6 followed emergency procedures 1.7 followed contingency measures 1.8 implemented corrective actions
2. Underpinning knowledge	2.1 Define OSH 2.2 OSH Workplace Policies and Procedures 2.3 Work safety procedures 2.4 Emergency procedures 2.5 Hazard control procedure 2.6 Different types of hazards 2.7 PPE and there uses 2.8 Personal hygiene practices 2.9 OSH awareness
3. Underpinning skills	3.1 Accessing OSH policies 3.2 Using of PPE 3.3 Handling cleaning tools and equipment 3.4 Writing report 3.5 Responding to emergency procedures
4. Required attitude	4.1 Commitment to occupational health and safety 4.2 Sincere and honest to duties 4.3 Promptness in carrying out activities 4.4 Environmental concerns 4.5 Eagerness to learn 4.6 Tidiness and timeliness 4.7 Respect of peers and seniors in workplace 4.8 Communicate with peers and seniors in workplace
5. Resource implications	5.1 Workplace

	5.2 Equipment and outfits appropriate in applying safety measures 5.3 Tools, equipment, materials and documentation required 5.4 OSH Policies and Procedures
6. Methods of assessment	Competency should be assessed by: 6.1 Written test 6.2 Demonstration 6.3 Oral questioning
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

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Sector Specific Units of Competencies

Unit Code and Title	**SU-LE-03-L1-V1: Identify Tools and Spare Parts for Motorcycle Servicing**
Nominal Hours	**20 Hours**
Unit Descriptor	This unit covers the knowledge, skills and attitudes required to identify tools and spares parts for motorcycle servicing. It specifically includes -follow OSH practices, identify tools and spare parts and service and maintain workplace tools and spare parts
Elements of Competency	**Performance Criteria** **Bold and Underlined** terms are elaborated in the Range of Variables.
1. Follow OSH practices	1.1 Personal protective equipment (PPE) is used during work as per job requirements. 1.2 **OSH standards** observed as set out by the workplace practices and legislation. 1.3 Equipment is used safely according to specifications and standard operating procedures.
2. Identify tools and spare parts	2.1 Tools are identified 2.2 Use of tools are demonstrated 2.3 Major motorcycle parts are identified 2.4 Common specialized **motorcycle** service tools identified 2.5 Use of specialized motorcycle service tools are demonstrated;
3. Service and maintain tools, spare parts and workplace	3.1. **Tools and equipment** are regularly checked against **service manuals** to ensure safe operating condition. 3.2. Damaged/worn tools and spare parts are tagged and removed from the workplace for repair or replacement and reported in accordance with workplace practices. 3.3. Tools/ spare parts are serviced, adjusted and maintained as per manufacturer schedule; 3.4. Servicing and maintenance operations are carried out in a safe work manner as per workplace practices. 3.5. Tools and spare parts are cleaned, checked and stored securely as per workplace practices.
Range of Variables	
Variables	**Range** (may include but not limited to):
1. OSH standards	1.1 Clean work area 1.2 Personal Protective Equipment 1.3 Risk assessment 1.4 Hazard identification 1.5 Manual handling techniques

	1.6 Housekeeping 1.7 Material safety data sheets (MSDS) 1.8 Reporting accidents and incidents 1.9 Environmental practices
2. Motorcycle	2.1 Common brand of motorcycles used in Bangladesh
3. Tools and equipment	3.1 Socket box (6-19 mm) 3.2 Combination Wrenches set (6-21 mm) 3.3 Ring Wrenches 3.4 Open end Wrenches 3.5 Diagonal cutters and pliers 3.6 Multi grips 3.7 Hammers (Soft) 3.8 Hammers (Hard) 3.9 Screwdrivers (variety of blade and Phillips) 3.10 Oil funnel 3.11 Oil measuring container 3.12 Waste Oil storage facilities 3.13 Oil spill equipment (mop, bucket, saw dust or similar) 3.14 Chisels and punches 3.15 Torque wrench 3.16 Test light 3.17 Air compressor 3.18 Air blow gun 3.19 Tyre lever 3.20 Lifting and support equipment 3.21 Battery 3.22 Bench and hand grinders 3.23 Electric hand drill machine 3.24 Scissors 3.25 Adjustable wrench 3.26 Allen key set (3-4mm) 3.27 Rotor puller 3.28 Rotor stoper 3.29 Cir-clip opener (External/ Internal) 3.30 Common special tools as required by manufacturer
4. Service manuals	4.1 Manufacturers service manuals 4.2 Owners handbook 4.3 Non manufacturer manuals and service data information
Evidence Guide 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 OSH practices 1.2 identified tools and spare parts 1.3 service and maintained workplace tools and spare parts
2. Underpinning knowledge	2.1 Rules and regulations of OSH 2.2 Servicing tools and their uses 2.3 Maintenance of servicing tools 2.4 List of common motorcycle spare parts 2.5 Technique of identify spare parts 2.6 Spares parts defects.
3. Underpinning skills	3.1 Handling tools and spares parts 3.2 Using hand tools and power tools 3.3 Listing common spare parts 3.4 Identifying spare parts 3.5 Servicing of spare parts
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	The following resources must be provided 5.1. Workplace (actual or simulated) 5.2. Tools, spares parts & physical facilities appropriate to perform activities. 5.3. Materials, consumable to perform activities.
6. Methods of assessment	6.1 Demonstration 6.2 Oral questioning 6.3 Written test
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

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Unit Code and Title	**SU-LE-04-L1-V1: Use measuring instruments**
Nominal Hours	**20 Hours**
Unit Descriptor	This unit covers the knowledge, skills and attitudes required to use measuring instruments It specifically includes – follow OSH practices, select measuring tools and equipment and use measuring tools and equipment
Elements of Competency	**Performance Criteria** **Bold and Underlined** terms are elaborated in the Range of Variables.
1. Follow OSH practices	1.1 Personal protective equipment used during work as per job requirements. 1.2 **OSH standards** observed as set out by the workplace practices and legislation. 1.3 Equipment is used safely according to specifications and standard operating procedures
2. Select measuring tools and equipment	2.1 Use of measuring tools are demonstrated. 2.2 **Measuring instruments** and equipment are selected as per job requirements.
3. Use measuring tools and equipment	3.1 Use of measuring tools and equipment are interpreted 3.2 Measuring tools and equipment are used 3.3 Measuring tools and equipment are cleaned, checked and stored securely as per **service manuals**
Range of Variables	
Variables	**Range** (may include but not limited to):
1. OSH standards	1.1 Clean work area 1.2 Personal Protective Equipment 1.3 Risk assessment 1.4 Hazard identification 1.5 Manual handling techniques 1.6 Housekeeping 1.7 Material safety data sheets (MSDS) 1.8 Reporting accidents and incidents 1.9 Environmental practices
2. Measuring tools and equipment	2.1 Feeler gauges 2.2 Ruler and tape measures 2.3 Vernier callipers 2.4 Torque wrench 2.5 MultiMate

3. Service manuals	3.1 Manufacturers service manuals 3.2 Owners' handbook 3.3 Non manufacturer manuals and service data information
Evidence Guide 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 selected measuring tools and equipment 1.2 used measuring tools and equipment
2. Underpinning knowledge	2.1 Knowledge about graduated measuring instrument. 2.2 Classification of graduated measuring instrument. 2.3 Measuring tools defects. 2.4 Principles and techniques in maintenance and care.
3. Underpinning skills	3.1 Handling of measuring instrument. 3.2 Selecting measuring tools. 3.3 Using of measuring tools.
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	The following resources must be provided: 5.1. Workplace (actual or simulated) 5.2. All tools, equipment and materials required 5.3. Materials, consumable to perform activities
6. Methods of assessment	6.1 Demonstration 6.2 Oral questioning 6.3 Written test
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 BNQF. Accredited providers assessing against this unit of competency must meet the quality assurance requirements set by NSDA.	

Occupation Specific Units of Competencies

Unit Code and Title	**OU-LE-MCS-01-L1-V1: Use motorcycle fasteners**
Nominal Hours	**20 Hours**
Unit Descriptor	This unit covers the knowledge, skills and attitudes required to use motorcycle fasteners It specifically includes – follow OSH Practices, identify common motorcycle fasteners and use/install correct fastener for job
Elements of Competency	**Performance Criteria** **Bold and Underlined** terms are elaborated in the Range of Variables.
1. Follow OSH practices	1.4 Personal protective equipment used during work as per job requirements. 1.5 **OSH standards** observed as set out by the workplace practices and legislation. 1.6 Equipment is used safely according to specifications and standard operating procedures
2. Identify common motorcycle fasteners	2.1 **Motorcycle fasteners** are identified. 2.2 Use of motorcycle fasteners are demonstrated. 2.3 **Tools and equipment** are selected for installation/removal of common motorcycle fasteners.
3. Use/install correct fastener	4.1 Select appropriate fastener for the job 4.2 Fasteners are installed and tightened as per **service manuals**.
Range of Variables	
Variables	**Range** (may include but not limited to):
1. OSH standards	1.1 Clean work area 1.2 Personal Protective Equipment 1.3 Risk assessment 1.4 Hazard identification 1.5 Manual handling techniques 1.6 Housekeeping 1.7 Material safety data sheets (MSDS) 1.8 Reporting accidents and incidents 1.9 Environmental practices
2. Motorcycle fasteners	2.1 Nuts, Bolts and studs 2.2 Different type screws 2.3 Different types of washers 2.4 Different types of keys **2.5** Special fasteners
3. Service manuals	3.1 Manufacturers service manuals 3.2 Owners' handbook 3.3 Non manufacturer manuals and service data information

4. Tools and equipment	4.1 Combination Wrenches (assortment ring/open end)/wrench 4.2 Socket box metric (6-19mm) 4.3 Screwdriver 4.4 Pliers 4.5 Hammers 4.6 Feeler gauges 4.7 Circlip opener 4.8 Thread cleaner 4.9 Vernier callipers 4.10 Tap and die set 4.11 Torque wrench 4.12 Special tools as required by manufacturer
Evidence Guide 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 identified common motorcycle fasteners 1.2 used/installed correct fastener
2. Underpinning knowledge	2.1 Common motorcycle fasteners 2.2 Installation technique motorcycle fasteners
3. Underpinning skills	3.1 Ability to applying relevant OSH practices 3.2 Identifying common motorcycle fasteners 3.3 Installing common motorcycle fasteners
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	The following resources must be provided: 5.1. Workplace (actual or simulated) 5.2. All tools, equipment and materials required 5.3. Materials, consumable to perform activities
6. Methods of assessment	6.1 Demonstration 6.2 Oral questioning 6.3 Written test
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 BNQF. Accredited providers assessing against this unit of competency must meet the quality assurance requirements set by NSDA.

Unit Code and Title	**OU-LE-MCS-02-L1-V1: Change Wheels and Tyres**
Nominal Hours	**40 Hours**
Unit Descriptor	This unit covers the knowledge, skills and attitudes required to change wheels and Tyres It specifically includes – follow OSH practices, remove wheel assembly for inspection, service rim, tyres and tubes, reassemble wheel assembly and clean work area and prepare motorcycle for pick up or storage
Elements of Competency	**Performance Criteria** **Bold and Underlined** terms are elaborated in the Range of Variables.
1. Follow OSH practices	1.1 Personal protective equipment used during work as per job requirements. 1.2 **OSH standards** observed as set out by the workplace practices and legislation. 1.3 Equipment is used safely according to specifications and standard operating procedures
2. Remove wheel assembly for inspection	3.1 Materials, tools, equipment and replaced parts required to perform work are identified and prepared as per workplace procedures 3.2 Work procedure is accessed from manufacturer service manual or service data are interpreted. 3.3 **Wheel** is removed in accordance with manufacturer procedures. 3.4 Removed wheel and associated components are inspected in accordance with manufacturers procedures
3. Service rim, tyres and tubes	4.1 Information and work procedure is accessed from manufacturer are interpreted. 4.2 Rim are inspected and replaced as per manufacturer's specifications. 4.3 **Tyres** and tubes are inspected and replaced according to manufacturer procedures. 4.4 Tyres pressures checked and adjusted according to manufacturer specifications.
4. Reassemble wheel assembly	5.1 Information and work procedure required for fitting/refitting and adjustment of wheel assemblies is accessed from manufacturer specifications are interpreted. 5.2 Wheel fitting and adjusting procedures are carried out in accordance with manufacturer specifications.

	5.3 Tightening sequence and torque settings are completed in accordance with manufacturer specifications and workplace procedures. 5.4 Brakes are checked for correct operation and adjustment as per **service manuals.** 5.5 **Replacement parts and materials** are identified.
5. Clean work area and prepare motorcycle for pick up or storage	6.1 **Tools and equipment** and work area are cleaned and inspected for serviceable condition in accordance with workplace 6.2 Final inspection is made to ensure work is to workplace expectations. 6.3 Motorcycle cleaned and prepared for use or storage as per workplace procedures. 6.4 Workplace documents are completed in accordance with workplace procedures
Range of Variables	
Variables	**Range** (may include but not limited to):
1. OSH standards	1.1 Clean work area 1.2 Personal Protective Equipment 1.3 Risk assessment 1.4 Hazard identification 1.5 Manual handling techniques 1.6 Housekeeping 1.7 Material safety data sheets (MSDS) 1.8 Reporting accidents and incidents 1.9 Environmental practices
2. Wheels and tyres	2.1 Steel and alloy wheels as used on motorcycles and motor scooters in Bangladesh 2.2 Tubbed and tubeless type tyres
3. Service manuals	2.1 Manufacturers service manuals 2.2 Owners' handbook 2.3 Tyre manufacturer manuals and specifications 2.4 Non manufacturer manuals and service data information
4. Tools and equipment	4.1 Combination Wrenchs (Assortment ring/open end) 4.2 Socket box (6-19mm) 4.3 Screwdrivers (Flat and Phillips) 4.4 Tyre irons and levers 4.5 Rubber mallet 4.6 Tyre inflation equipment 4.7 Motorcycle lifting and support equipment 4.8 Special tools as required by manufacturer

5. Replacement parts and materials	5.1 Tubes 5.2 Tyres 5.3 Rims
Evidence Guide 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 removed wheel assembly for inspection 1.2 service rim, tyres and tubes 1.3 reassembled wheel assembly
2. Underpinning knowledge	2.1 Relevant OSH practices 2.2 Wheel assembly 2.3 Servicing technique of rim, tyres and tubes
3. Underpinning skills	3.1 Removing wheel assembly 3.2 Servicing of rim, tyres and tubes 3.3 Reassembling wheel assembly
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	The following resources must be provided: 5.1. Workplace (actual or simulated) 5.2. All tools, equipment and materials required 5.3. Materials, consumable to perform activities
6. Methods of assessment	6.1 Demonstration 6.2 Oral questioning 6.3 Written test
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 BNQF. Accredited providers assessing against this unit of competency must meet the quality assurance requirements set by NSDA.	

Unit Code and Title	**OU-LE-MCS-03-L1-V1: Service Motorcycle Basic Braking System**
Nominal Hours	**40 Hours**
Unit Descriptor	This unit covers the knowledge, skills and attitudes required to service motorcycle braking system It specifically includes – follow OSH Practices, inspect and service disc and drum type brake systems and clean work area and prepare motorcycle for pick up or storage
Elements of Competency	**Performance Criteria** **Bold and Underlined** terms are elaborated in the Range of Variables.
1. Follow OSH practices	1.1 Personal protective equipment used during work as per job requirements. 1.2 **OSH standards** observed as set out by the workplace practices and legislation. 1.3 Equipment is used safely according to specifications and standard operating procedures
2. Identify mechanical and hydraulic brake system	2.1 Components of mechanical and hydraulic brake system is identified; 2.2 Mechanical brake system is identified; 2.3 Hydraulic brake system is identified
3. Inspect and service disc and drum type brake systems	3.1 Tools, equipment, materials and replacement parts are identified and prepared as per job requirements. 3.2 Components of **brake systems** are identified. 3.3 Brake systems are inspected for component wear and serviceability as per manufacturers procedures. 3.4 Worn and unserviceable components serviced/replaced and adjusted as per manufacturers procedures. 3.5 Hydraulic brake fluid is checked and level adjusted as per manufacturer's procedures and specifications. 3.6 Functional tests are performed to determine brake performance as per **service manuals**.
4. Clean work area and prepare motorcycle for pick up or storage	4.1 **Tools and equipment** and work area are cleaned. 4.2 Final inspection is made to ensure job requirement. 4.3 Motorcycle cleaned and prepared for use or storage as per workplace procedures. 4.4 Workplace documents are completed in accordance with workplace procedures. 4.5 **Replaced parts and materials** are identified and documented.
Range of Variables	

Variables	**Range** (may include but not limited to):
1. OSH standards	1.1 Clean work area 1.2 Personal Protective Equipment 1.3 Risk assessment 1.4 Hazard identification 1.5 Manual handling techniques 1.6 Housekeeping 1.7 Material safety data sheets (MSDS) 1.8 Reporting accidents and incidents 1.9 Environmental practices
2. Brake systems	2.1 Mechanical and hydraulic brake 2.2 Disc and drum type brake systems
3. Tools and equipment	3.1 Combination Wrenches (assortment ring/open end) 3.2 3/8 or 1/2 in drive socket set 3.3 Feeler gauges 3.4 Screwdrivers (variety of blade and Phillips) 3.5 Oil spill equipment (mop, bucket, saw dust or similar) 3.6 Parts washing equipment 3.7 Motorcycle lifting and support equipment 3.8 Special tools as required by manufacturer
4. Service manuals	4.1 Manufacturers service manuals 4.2 Owners' handbook 4.3 Non manufacturer manuals and service data information
5. Replacement parts and materials	5.1 Replacement disc brake pads 5.2 Replacement drum brake shoes 5.3 Brake fluid 5.4 Suitable range of oils/lubricants
Evidence Guide 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 service appropriate braking system to the task. 1.2 maintained braking system 1.3 prepared motorcycle for pick up
2. Underpinning knowledge	2.1 OSH policies 2.2 Disc and drum type brake systems 2.1 Motorcycle storage system
3. Underpinning skills	3.1 Preparing braking system for servicing 3.2 Servicing of disc and drum type braking system 3.3 Preparing motorcycle for pickup

4. Underpinning attitudes	4.1 Commitment to occupational safety and health. 4.2 Communication with peers, sub-ordinates and seniors in workplace. 4.3 Promptness in carrying out activities. 4.4 Tidiness and timeliness. 4.5 Respect for rights of peers, sub-ordinates and seniors in workplace. 4.6 Environmental concern. 4.7 Sincere and honest to duties.
5. Resource implications	The following resources must be provided: 5.1. Workplace (actual or simulated) 5.2. All tools, equipment and materials required 5.3. Materials, consumable to perform activities
6. Methods of assessment	6.1 Demonstration 6.2 Oral questioning 6.3 Written test
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

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Unit Code and Title	**OU-LE-MCS-04-L1-V1: Replace Motorcycle Seals, Gaskets and Bearings**
Nominal Hours	**20 Hours**
Unit Descriptor	This unit covers the knowledge, skills and attitudes required to replace motorcycle seals, gaskets and bearings It specifically includes – follow OSH Practices, inspect seals and gaskets, replace seals, gaskets and bearings, and clean work area and prepare motorcycle for pick up or storage
Elements of Competency	**Performance Criteria** **Bold and Underlined** terms are elaborated in the Range of Variables.
1. Follow OSH practices	1.1 Personal protective equipment used during work as per job requirements. 1.2 **OSH standards** observed as set out by the workplace practices and legislation. 1.3 Equipment is used safely according to specifications and standard operating procedures
2. Inspect seals and gaskets	2.1 Visual inspection performed to check for evidence of oil/fluid leakage from **gasket and seals**. 2.2 Faults are identified and reported to supervisor
3. Replace seals and gaskets	3.1 Relevant service procedures are identified from manufacturer's manuals 3.2 Gaskets, sealants and adhesives are selected appropriate for the work requirement. 3.3 Sealants and adhesives are used in accordance with manufacturer instructions. 3.4 Replacement paper type gaskets are produced using suitable hand tools and equipment as per workplace procedures 3.5 Gaskets and seals are used in accordance with manufacturer instructions
4. Replace bearings	4.1 **Bearings** checked in accordance with manufacturer instructions. 4.2 Faults are identified and reported to supervisor 4.3 Bearings are serviced/replaced in accordance with workplace procedures and manufacturer specifications. 4.4 **Replaced parts and materials** are identified and documented;
5. Clean work area and prepare motorcycle for pick up or storage	5.1 **Tools, equipment** and work area are cleaned 5.2 Final inspection is made to ensure job requirement; 5.3 Motorcycle cleaned and prepared for use or storage as per workplace procedures.

	5.4 Workplace documents are completed in accordance with workplace procedures
Range of Variables	
Variables	**Range** (may include but not limited to):
1. OSH standards	1.1 Clean work area 1.2 Personal Protective Equipment 1.3 Risk assessment 1.4 Hazard identification 1.5 Manual handling techniques 1.6 Housekeeping 1.7 Material safety data sheets (MSDS) 1.8 Reporting accidents and incidents 1.9 Environmental practices
2. Gaskets and seals	2.1 Oil filter/strainer and housing gaskets 2.2 Sump plugs gaskets 2.3 Clutch and engine side cover gaskets 2.4 Valve cover gaskets 2.5 Transmission selector seals
3. Bearings	3.1 Wheel and hub bearings. 3.2 Steering head bearings. 3.3 Swing arm bearing/ bush.
4. Tools and equipment	4.1 Combination Wrenches. 4.2 Socket wrench. 4.3 Filler gauge 4.4 Vernier callipers. 4.5 Punch set. 4.6 Screwdrivers (Flat and Phillips) 4.7 Manufacture's special tools. 4.8 Trox 4.9 Allen key
5. Replacement parts and materials	5.1 Paper type gasket. 5.2 Gasket / sealants. 5.3 Grease, brake fluid, hydraulic oil and lubricants.
Evidence Guide 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 inspected seals and gaskets 1.2 removed wheel assembly for inspection 1.3 replaced bearings

2. Underpinning knowledge	2.1 Function of seals and gasket 2.2 Function of sealant 2.3 Function of bearing
3. Underpinning skills	3.1 Ability to applying relevant OSH practices 3.2 Inspecting seals and gaskets 3.3 Removing wheel assembly for inspection 3.4 Replacing bearings
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	The following resources must be provided: 5.1. Workplace (actual or simulated) 5.2. All tools, equipment and materials required 5.3. Materials, consumable to perform activities
6. Methods of assessment	6.1 Demonstration 6.2 Oral questioning 6.3 Written test
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

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Unit Code and Title	**OU-LE-MCS-05-L1-V1: Service Motorcycle Lubricating System**
Nominal Hours	**20 Hours**
Unit Descriptor	This unit covers the knowledge, skills and attitudes required to service motorcycle lubricating system. It specifically includes – follow OSH Practices, check motorcycle lubrication points and select motorcycle lubricant
Elements of Competency	**Performance Criteria** **Bold and Underlined** terms are elaborated in the Range of Variables.
1. Follow OSH practices	1.1 Personal protective equipment used during work as per job requirements. 1.2 **OSH standards** observed as set out by the workplace practices and legislation. 1.3 **Tools and equipment** are used safely according to specifications and standard operating procedures.
2. Check motorcycle lubrication points	2.1 **Lubricants and fluid** levels are checked and topped-up; 2.2 Grease points are identified and correct lubricant are applied as per manufacturers specifications. 2.3 Brake fluid reservoirs are checked and topped-up as per manufacturers specifications. 2.4 Drive chain is inspected and adjusted applied as per manufacturers specifications. 2.5 Drive chain lubricant is applied as per manufacturers specifications. 2.6 General purpose lubricants and penetrating fluids are applied to cables, levers and pivot points as per workplace procedures.
3. Select motorcycle lubricant	3.1 Correct grade of engine oil selected from manufacturers and lubricant specification manuals: 3.2 Lubricant properties and typical application points are selected; 3.3 Common types of service greases are demonstrated. 3.4 Correct lubricant and application points for Motorcycle are identified as per manufacturers procedures. 3.5 Correct lubricants are applied during schedule as per workplace procedures and manufacturers specifications. 3.6 **Replaced parts and materials** are identified and prepared as per **service manuals.**
Range of Variables	
Variables	**Range** (may include but not limited to):
1. OSH standards	1.1 Clean work area

	1.2 Personal Protective Equipment 1.3 Risk assessment 1.4 Hazard identification 1.5 Manual handling techniques 1.6 Housekeeping 1.7 Material safety data sheets (MSDS) 1.8 Reporting accidents and incidents 1.9 Environmental practices
2. Tools and equipment	2.1 Combination Wrenches (assortment ring/open end) 2.2 Socket box metric (6-19mm) 2.3 Screwdrivers (flat of blade and Phillips) 2.4 Oil funnel 2.5 Oil measuring container 2.6 Oil pan (container to hold waste oil) 2.7 Waste Oil storage facilities 2.8 Oil spill equipment (mop, bucket, saw dust or similar) 2.9 Motorcycle lifting and support equipment 2.10 Special tools required for motorcycle lubricating system
3. Lubricants and fluids	3.1 Engine oils 3.2 Brake fluid 3.3 Fork oil 3.4 Drive chain lubricants
4. Replacement parts and materials	4.1 Suitable range of engine and gear oils 4.2 Brake fluid 4.3 Lubricating oil 4.4 Distilled water
5. Service manuals	5.1 Manufacturers service manuals 5.2 Owners' handbook 5.3 Non manufacturer manuals and service data information
Evidence Guide 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 checked motorcycle lubrication points 1.2 selected motorcycle lubricant
2. Underpinning knowledge	2.1 Function of lubricants 2.2 Points of lubricants 2.3 Selection of lubricants 2.4 Correct grade of engine oil 2.5 Typical application of penetrating, solid and powdered type lubricants

3. Underpinning skills	3.1 Identifying points of lubricants 3.2 Selecting lubricants 3.3 Using penetrating, solid and powdered type lubricants 3.4 Applying correct lubricants
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	The following resources must be provided: 5.1. Workplace (actual or simulated) 5.2. All tools, equipment and materials required 5.3. Materials, consumable to perform activities
6. Methods of assessment	6.1 Demonstration 6.2 Oral questioning 6.3 Written test
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

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Unit Code and Title	**OU-LE-MCS-06-L1-V1: Service battery system**
Nominal Hours	**20 Hours**
Unit Descriptor	This unit covers the knowledge, skills and attitudes required to service battery system It specifically includes – follow OSH Practices, prepare for battery servicing, replace battery, test battery, charge battery, jump start motorcycle and clean work area and prepare motorcycle for pick up or storage
Elements of Competency	**Performance Criteria** **Bold and Underlined** terms are elaborated in the Range of Variables.
1. Follow OSH practices	1.1 Personal protective equipment used during work as per job requirements. 1.2 **OSH standards** observed as set out by the workplace practices and legislation. 1.3 Equipment is used safely according to specifications and standard operating procedures
2. Prepare for battery servicing	2.1 Types of motorcycle batteries are identified; 2.2 Tools and equipment are prepared 2.3 Materials are identified and prepared as per workplace procedures
3. Replace batteries	3.1 Information required for battery servicing is accessed from appropriate manufacturers specifications and correctly interpreted. 3.2 Tools, equipment and materials are identified and prepared as per workplace procedures. 3.3 Battery voltages are checked; 3.4 Electrolyte levels are checked and topping up in accordance with workplace procedures. 3.5 **Batteries** and terminals are cleaned in accordance with workplace procedures. 3.6 Batteries are removed and replaced safely according to workplace procedures.
4. Charge batteries	4.1 Information for charging is accessed from manufacturer/ component supplier specifications and correctly interpreted. 4.2 Tools, equipment and materials are identified and prepared as per workplace procedures. 4.3 Electrolyte levels are checked and topping up in accordance with workplace procedures. 4.4 Batteries are charged as per safe method;
5. Perform jump start	5.1 Jump start of motorcycle is interpreted;

	5.2 Information is accessed from manufacturer/component supplier specifications and correctly interpreted. 5.3 Leads are connected/disconnected in correct sequence and polarity. 5.4 All work is carried out without causing damage to component or system.
6. Clean work area and prepare motorcycle for pick up or storage	6.1 **Tools and equipment** and work area are cleaned 6.2 Motorcycle cleaned and prepared for use or storage as per workplace procedures. 6.3 Replaced parts and materials are identified 6.4 Workplace documents are completed in accordance with workplace procedures.
Range of Variables	
Variables	**Range** (may include but not limited to):
1. OSH standards	1.1 Clean work area 1.2 Personal Protective Equipment 1.3 Risk assessment 1.4 Hazard identification 1.5 Manual handling techniques 1.6 Housekeeping 1.7 Material safety data sheets (MSDS) 1.8 Reporting accidents and incidents 1.9 Environmental practices
2. Batteries	2.1 All conventional type of motorcycle batteries
3. Tools and equipment	3.1 Combination Wrenches (assortment ring/open end) 3.2 Socket box metric (6-19mm) 3.3 Feeler/spark plug gauge 3.4 Small file contact fails 3.5 Bench vice 3.6 Range of spark plug sockets and plug wrench 3.7 Screwdrivers (flat and Phillips) 3.8 Special tools as required by manufacturer
4. Service manuals	4.1 Manufacturers service manuals 4.2 Owners' handbook 4.3 Non manufacturer manuals and service data information
Evidence Guide 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 prepared for battery servicing 1.2 replaced batteries

	1.3 charged batteries 1.4 jumped start motorcycle
2. Underpinning knowledge	2.1 Function of battery in motorcycle 2.2 Testing procedure of battery 2.3 Maintenance of battery 2.4 Storage procedure of battery
3. Underpinning skills	3.1 Preparing for battery servicing 3.2 Replacing of batteries 3.3 Charging of batteries 3.4 Jump starting of motorcycle
4. Underpinning attitudes	4.1 Commitment to occupational safety and health. 4.2 Communication with peers, sub-ordinates and seniors in workplace. 4.3 Promptness in carrying out activities. 4.4 Tidiness and timeliness. 4.5 Respect for rights of peers, sub-ordinates and seniors in workplace. 4.6 Environmental concern. 4.7 Sincere and honest to duties.
5. Resource implications	The following resources must be provided: 5.1. Workplace (actual or simulated) 5.2. All tools, equipment and materials required 5.3. Materials, consumable to perform activities
6. Methods of assessment	6.1 Demonstration 6.2 Oral questioning 6.3 Written test
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

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Unit Code and Title	**OU-LE-MCS-07-L1-V1: Service Motorcycle Basic Ignition System**
Nominal Hours	**30 Hours**
Unit Descriptor	This unit covers the knowledge, skills and attitudes required to service motorcycle ignition system It specifically includes – follow OSH practices, inspect and service spark plugs and high-tension leads and clean work area and prepare motorcycle for pick up or storage
Elements of Competency	**Performance Criteria** **Bold and Underlined** terms are elaborated in the Range of Variables.
1. Follow OSH practices	1.1 Personal protective equipment used during work as per job requirements. 1.2 **OSH standards** observed as set out by the workplace practices and legislation. 1.3 Equipment is used safely according to specifications and standard operating procedures
2. Inspect and service basic ignition system	2.1. Tools, equipment, materials and replaced parts are identified and prepared as per workplace procedures. 2.2. spark plug and its insulator/boots are inspected for visual damage. 2.3. Spark plug is cleaned and adjusted or replaced as per manufacturers procedures 2.4. Ignition coil and high-tension lead are inspected 2.5. CDI system is interpreted 2.6. Faults are identified and reported to supervisor
3. Clean work area and prepare motorcycle for pick up or storage	3.1 Equipment and work area are cleaned and inspected 3.2 **Tools and equipment** are cleaned and prepared for use or storage as per **service manuals.** 3.3 Workplace documents are completed in accordance with workplace procedures. 3.4 Replaced parts and materials are identified.
Range of Variables	
Variables	**Range** (may include but not limited to):
1. OSH standards	1.1 Clean work area 1.2 Personal Protective Equipment 1.3 Risk assessment 1.4 Hazard identification 1.5 Manual handling techniques 1.6 Housekeeping 1.7 Material safety data sheets (MSDS)

	1.8 Reporting accidents and incidents 1.9 Environmental practices
2. Tools and equipment	3.1 Combination wrenches (assortment ring/open end) 3.2 Socket box metric (6-19mm) 3.3 Feeler/spark plug gauge 3.4 Small file contact fails 3.5 Bench vice 3.6 Range of spark plug sockets and plug wrench 3.7 Screwdrivers (flat and Phillips) 3.8 Special tools as required by manufacturer
3. Service manuals	4.1 Manufacturers service manuals 4.2 Owners' handbook 4.3 Non manufacturer manuals and service data information
Evidence Guide 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 inspected spark plugs and high-tension leads 1.2 service spark plugs and high-tension leads 1.3 performed routine maintenance for ignition system.
2. Underpinning knowledge	2.1 Function of spark plug 2.2 Function of high-tension lead 2.3 Servicing procedure of spark plug and high-tension lead
3. Underpinning skills	3.1 Inspecting spark plugs and high-tension leads 3.2 Servicing of spark plugs and high-tension leads
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	The following resources must be provided: 5.1. Workplace (actual or simulated) 5.2. All tools, equipment and materials required 5.3. Materials, consumable to perform activities
6. Methods of assessment	6.1 Demonstration 6.2 Oral questioning 6.3 Written test
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

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Unit Code and Title	**OU-LE-MCS-08-L1-V1: Service motorcycle engine**
Nominal Hours	**80 Hours**
Unit Descriptor	This unit covers the knowledge, skills and attitudes required to Service motorcycle engine. It specifically includes – follow OSH Practices, identify different types of engines and perform engine servicing
Elements of Competency	**Performance Criteria** **Bold and Underlined** terms are elaborated in the Range of Variables.
1. Follow OSH practices	1.1 **Personal protective equipment** used during work as per job requirements. 1.2 **OSH standards** observed as set out by the workplace practices and legislation. 1.3 Equipment is used safely according to specifications and **Service manuals**.
2. Identify different types of engines	2.1 Motorcycle engine construction is interpreted; 2.2 Engine components are identified 2.3 Engine operation is demonstrated
3. Perform engine servicing	3.1 Engine oil grade is interpreted; 3.2 Engine oil level checks is demonstrated 3.3 Change of engine oil and oil filter is demonstrated 3.4 Clean/ change of air filter is demonstrated 3.5 Adjust valve/tappets clearances is demonstrated
Range of Variables	
Variables	**Range** (may include but not limited to):
1. Personal protective equipment	1.1 Gas Mask 1.2 Gloves 1.3 Safety boots 1.4 Face mask 1.5 Overalls 1.6 Goggles and safety glasses
2. OSH standards	2.1 Clean work area 2.2 Personal Protective Equipment 2.3 Risk assessment 2.4 Hazard identification 2.5 Manual handling techniques 2.6 Housekeeping 2.7 Material safety data sheets (MSDS) 2.8 Reporting accidents and incidents 2.9 Environmental practices

3. Service manuals	3.1 Manufacturers service manuals 3.2 Owners' handbook 3.3 Non manufacturer manuals and service data information
4. Tools and equipment	4.1 Combination Wrenches/Wrench (assortment ring/open end) 4.2 Socket box metric (6-19) 4.3 Screwdrivers (variety of blade and Phillips) 4.4 Special tools as required by manufacturer
Evidence Guide 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 identified different types of engines 1.2 performed engine servicing
2. Underpinning knowledge	2.1 Types of motorcycle engine 2.2 Motorcycle engine construction 2.3 Motorcycle engine components 2.4 Motorcycle engine operation 2.5 Servicing procedure of motorcycle
3. Underpinning skills	3.1 Identifying different types of engines 3.2 Preparing list of engine components 3.3 Changing procedure of engine oil and filter 3.4 Cleaning/ changing procedure of air filter 3.5 Adjusting procedure of valve/tappets clearances 3.6 Adjusting procedure of timing chain
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	The following resources must be provided: 5.1. Workplace (actual or simulated) 5.2. All tools, equipment and materials required 5.3. Materials, consumable to perform activities
6. Methods of assessment	6.1 Demonstration 6.2 Oral questioning 6.3 Written test
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 BNQF. Accredited providers assessing against this unit of competency must meet the quality assurance requirements set by NSDA.

Development of Competency Standard

The Competency Standards for National Skills Certificate in Motorcycle Servicing, Level-1 is developed by NSDA on 22 August 2024.

List of Members

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