BANGLADESH TECHNICAL EDUCATION BOARD

NATIONAL COMPETENCY STANDARDS
For
Motorcycle Servicing: NTVQF Level-1
Transport Equipment Industry Skills Council
Bangladesh

BANGLADESH TECHNICAL EDUCATION BOARD
June, 2013

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BANGLADESH TECHNICAL EDUCATION BOARD
Standard Curriculum Development Committee
National Competency Standard
for
Motorcycle Servicing: NTVQF 1
Meeting held on 27.5.2013

Sl. No.	Name of members	Address Contact number	Designation	Signature	Remarks
1.	Brig.Gen.Aftabuddin Ahmed Executive Diretor	UCEP, Dhaka-1216 8017104, 8011014-6	Chair Person		CS Documents approved
2.	Mr.Md.Matiur Rahman Sr.Dy.General Manager S.A.	Uttara Motors Ltd. 124,Tejgnao Ind.Area.	Member	27/5/13	
3.	Mr.Md.Humayun Ahmed Senior Technical Advisor	HS Enterprise Ltd. Indira Road,Dhaka 01819223312	Member	27/5/13	
4.	Mr.Md.Golam Faruque Service Engineer	Walton Service Centre 7213293, 7215313	Member	27.05.13	
5.	Mr.Salah Uddin Ahmed Chief Instructor(Mech)	Dhaka Polytechnic Institute,01715120142	Member		
6.	Mr.Md.Shahadat Hossain Curriculum Specialist	BTEB, Dhaka 01558439769	Member		
7.	Mr.Khanda Abdul Bari Instructor	Bangla German TTC Dhaka, 01711185317	Member		
8.	Mr.Amol Kumar Bashu Chief Instructor	MAWTS, Pallabi, Dhaka. 01715834657	Member		

National Technical and Vocational Qualification Framework (NTVQF) for Bangladesh
Motorcycle Servicing: NTVQF Level-1
Unit of Competency

Sl. No.	Unit Code and Title		UoC Level	Nominal Duration (Hours)
Generic – Compulsory (2 UoCs required)				70
1.	GN1001A1	Use basic mathematical concepts	NTVQF 1	40
2	GN1002A1	Apply occupational safety and health (OSH) practices in the workplace	NTVQF 1	30
Sector Specific – Compulsory (3 UoCs Transport)				60
3.	TRSSS1003A1	Identify tools and spares parts for motorcycle servicing	NTVQF 1	20
4.	TRSSS1004A1	Use graduated measuring instruments	NTVQF 1	20
5.	TRSSS1005A1	Use motorcycle fasteners	NTVQF 1	20
Occupation Specific – Compulsory (9 UoCs required)				230
6.	TRSMSM1006A1	Disassemble and re-assemble of motor cycle component	NTVQF 1	20
7.	TRSMSM1007A1	Change wheels and tyres	NTVQF 1	20
8.	TRSMSM1008A1	Service motorcycle engine	NTVQF 1	60
9.	TRSMSM1009A1	Replace motorcycle seals, gaskets and bearings	NTVQF 1	20
10	TRSMS10010A1	Service motorcycle lubricating system	NTVQF 1	20
11.	TRSMS10011A1	Service motorcycle ignition system	NTVQF 1	25
12.	TRSMS10012A1	Service battery system	NTVQF 1	20
13.	TRSMS10013A1	Service motorcycle braking system	NTVQF 1	25
14.	TRSMS10014A1	Service motorcycle fuel system	NTVQF 1	20
			Total Nominal Learning Hours	360

GENERIC UNITS
(NTVQF Level-1)

National Technical and Vocational Qualification Framework (NTVQF) for Bangladesh
Motorcycle Servicing: NTVQF Level-1
Unit of Competency

Unit Code and Title	**GNMTH1001A1:** **Use basic mathematical concepts**
Nominal Hours	**40 hours**
Unit Descriptor	**This unit of competency requires the knowledge, skills and attitude to apply the basic mathematical methods such as addition, subtraction, multiplication and division in the motorcycle servicing workplace.**
Elements of Competency	**Performance Criteria** ***Italianized items are elaborated in the range of variable***
1. Identify calculation requirements in the workplace.	1.1 ***Calculation requirements*** are identified from ***workplace information***
2. Select appropriate mathematical methods for the calculation.	2.1 Appropriate method is selected to carry out the calculation.
3. Use basic mathematical concepts to calculate workplace calculation.	3.1 Calculations are completed using ***appropriate methods*** such as addition, subtraction, multiplication and division***.***
Range of Variables	
Variable	**Range**
1.Calculation requirements.	Calculation requirements may include but not limited to**:** 1.1.Total length calculation. 1.2. Area calculation. 1.3. Volume calculation.
2. Appropriate methods.	Appropriate methods may include but not limited to**:** 2.1.Addition 2.2.Subtraction 2.3.Division 2.4.Multiplication 2.5.Percentage and ratio
4. Workplace information.	Information may include but not limited to. 4.1. House area. 4.2. House height. 4.3. Specification of different items. 4.4. Sunlight exposure time.
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.	1.2.Use ofappropriate mathematical methods namely addition, subtraction, multiplication and division
2.Required 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.Required underpinning skills.	3.1. Ability to add numbers. 3.2. Ability to subtract numbers from another numbers. 3.3. Ability to multiply numbers. 3.4. Ability to divide numbers. 3.5. Ability to use of mathematical language, symbols, terminology and technology. 3.6. Ability to measure of different physical parameter. 3.7. Ability to calculate area and volume.
4.Required underpinning attitude.	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 implication.	The following resources must be provided. 5.1 Stationeries, consumables. 5.2 Calculators, computers, measuring tape.
6. Method of assessment.	***Methods of assessment may includes but not limited to:*** 6.1. Written test. 6.2. Oral questions. 6.3. Practical exercises of calculation. 6.4. Continuous assessment.
7. Context of assessment.	Competencies may be assessed in the work place or in a simulated work place.
Accreditation Requirements **Training Providers must be accredited by Bangladesh Technical Education Board (BTEB), 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 any national qualification.** **Accredited providers assessing against this unit of competency must meet the quality assurance requirements set by BTEB.**	

National Technical and Vocational Qualification Framework (NTVQF) for Bangladesh

Motorcycle Servicing: NTVQF Level-1

Unit of Competency

Unit Codeand Title	**GNOSH1002A1:** **Apply OSH practices in the workplace**
Nominal Hours	**20 hours**
Unit Descriptor	This unit of competency requires the knowledge, skills and attitude to apply OSH practice in the workplace.
Elements of Competency	**Performance Criteria** ***Italianized items are elaborated in the range of variable***
1. Follow OSH(Occupation Safety and Health) hazards at workplace. .	1.1. Personal Protective Equipment (***PPE***) is used. 1.2. ***Hazards*** at workplace explained. 1.3. ***Unsafe tools*** at workplace are listed. 1.4. ***Flammable*** materials are recognized. 1.5. Access and storable materials are preserved in designated place. 1.7. OSH equipment is used safely according to specifications, legislation and standard operating procedures.
2. Perform work in safe condition.	2.1. Safe OSH practices are performed. 2.2. Appropriate ***personal protective equipment*** (PPE) is used. 2.3. Safety signs, symbols and banners are displayed. 2.4. Location of the fire fighters is identified. 2.5. Clear and free emergency exit passage is maintained.
3. Use first aid kits.	3.1. Contents in the ***first aid kit*** are selected. 3.2. First aid kit in emergency is used.
4. Maintain healthy and hygiene workplace.	4.1. Aspect of good house keeping is explained. 4.2. Useable cleaning agents at workplace is selected. 4.3. Hands and parts of body are washed as per workplace regulation. 4.5. Safe drinking water is made available.
Range of Variables	
Variable	**Range**
1. Unsafe tools.	***Unsafe tools may includes but not limited to*:** 1.1.Broken tools. 1.2.Rusted tools. 1.3.Defective tools.

2. Hazard.	***Hazard may includes but not limited to:*** 1.1. Accumulation of waste materials. 1.2. Random storage of tools, equipment and furniture. 1.3. Storage of rejected wires, cables and structural materials. 1.4. Storage of flammable materials. 1.5. Congested emergency exit. 1.6. Oil splits floor at workplace.
3. Flammable.	***Flammable may includes but not limited to:*** 3.1. Fabrics. 3.2. PVC based materials. 3.3. Petroleum based materials. 3.4. Dry wood, bamboo.
3. Personal protective equipment.	***Personal protective equipment may includes but not limited to:*** 2.1. Hand gloves. 2.2. Mask. 2.3. Apron. 2.4. Cap. 2.5. Goggle. 2.6. Safety shoes. 2.7. Cautionary signs, symbols and banners. 2.8. Evacuation program. 2.9. Fire extinguisher. 2.10. Emergency lights. 2.11. Instructions. 2.12. Stretcher.
3. First aid kit,	***First aid kit may includes but not limited to:*** 3.1. Sterilized cotton. 3.2. Bandage. 3.3. Scissors. 3.4. Washing agent for injury. 3.5. Medicine for burn. 3.6. Medicine for sudden head-ache.
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	1.1. Identification of hazards. 1.2. Knowledge on hazard prevention.

	1.3. Use of personal Protective Equipment (PPE).
2.Required underpinning knowledge	2.1. Maintenance of good OSH condition in workplace. 2.2. Use of symbols and banners. 2.3. Evacuation instructions with pictures and words 2.4. Planning of floor layout of workplace. 2.5. Elimination of hazardous condition. 2.6. Use of PPE.
3.Required underpinning skills	3.1. Use of appropriate PPE. 3.2. Preparation of signs and banners. 3.4. Displaying of signs and banners. 3.5. Quick response in emergency.
4.Required underpinning attitude	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 implication	The following resources must be provided. 5.1. Drawing paper. 5.2. Drawing templates. 5.3. First aid box with required contents. 5.4. PPEq 5.5. Pens, pencils, markers, eraser. 5.6. Banners showing OSH practices. 5.7. Fire extinguisher
6. Methods of assessment	***Methods of assessment may includes but not limited to:*** 6.1 Written and oral questions 6.2 Practical demonstration 6.3 Observation 6.4 Interview 6.5 Assignment. 6.6. Practical display.
7. Context of assessment	Competencies may be assessed in the work place or in a simulated work place

Accreditation Requirements

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SECTOR SPECIFIC UNITS
NTVQF Level -1

National Technical and Vocational Qualification Framework (NTVQF) for Bangladesh
Motorcycle Servicing: NTVQF Level-1
Unit of Competency

Unit Code and Title	**TRSSS1003A1:** **Identify tools and spares parts for motorcycle servicing**
Nominal Hours	**20 hours**
Unit Descriptor	**This unit of competency requires the knowledge, skills and attitude to identify tools and spare parts for motorcycle servicing.**
Elements of Competency	**Performance Criteria** ***Italicized* 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 correct tools and spare parts for motor cycle service work	2.1 Metric system of tool measurements understood. 2.2. Tools and spare parts identified and selected to meet job requirements. 2.3. Common specialized motorcycle service tools and their use and identified.
3 Use tools and spare parts	3.1 .***Tools and spare parts*** are used in a safe manner to prevent injury to self and others. 3.2. Tooling and spare parts are used in a manner that does not cause damage to excessive wear on the tools and spare parts.
4. Service and maintain workplace tools and spare parts	4,1 . Tools and spare parts are regularly checked against ***service manuals***/component supplier recommendations to ensure safe operating condition. 4.2 Damaged/worn tools and spare parts are tagged and removed from the workplace for repair or replacement and reported in accordance with workplace practices. 4.3 Tools/ spare parts are serviced, adjusted and maintained as per

	manufacturer/component supplier schedule to ensure safe and correct operation, within the scope of responsibility. 4.4 Servicing and maintenance operations are carried out in a safe work manner as per workplace practices.
5. Store and secure tooling and spare parts	5.1 Tools and spare parts are cleaned, checked and stored securely as per workplace practices.
Range of Variables	
Variable	**Range**
1. Occupational Safety and Health.	***OSH may includes but not limited to:*** 1.1 Clean work area 1.2 Oil spill control 1.3 Personal Protective Equipment 1.4 Risk assessment 1.5 Hazard identification 1.6 Manual handling techniques 1.7Housekeeping 1.8 Material safety data sheets (MSDS) 1.9 Reporting accidents and incidents 1.10Environmental practices
2. Tools and equipment	***Tools and equipment may includes but not limited to:*** 2.1. Socket box (6-19 mm) 2.2. Combination spanners sets (6-21 mm) 2.3 Ring spanners 2.4 Open end spanners 2.5 Diagonal cutters and pliers 2.6 Multi grips 2.7 Hammers (Soft) 2.8 Hammers (Hard) 2.9 Screwdrivers (variety of blade and Phillips) 2.10 Oil funnel 2.11 Oil measuring container 2.12 Waste Oil storage facilities 2.13 Oil spill equipment (mop, bucket, saw dust or similar) 2.14 Chisels and punches 2.15 Torque wrench 2.16 Test light 2.17 Air compressor 2.18 Air blow gun 2.19 Tyre lever 2.20 Lifting and support equipment 2.21 Battery 2.22 Bench and hand grinders

	2.23 Electric hand drill machine 2.24 Scissors 2.25 Adjustable wrench 2.26 Allen key set (3-4mm) 2.27 Rotor puller 2.28 Rotor stoper 2.29 Cir-clip opener (External/ Internal) 2.30 Common special tools as required by manufacturer
3. Motorcycle	***Motor cycle may includes but not limited to:*** 3.1. 2 and 4 stoke patrol fuelled motorcycle or motor scooters commonly used in Bangladesh.
4. Service manuals	***Service manuals may includes but not limited to:*** 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	1.1 Select and use tools & spares parts to the task. 1.2 Perform routine maintenance and storage of tools & spares parts.
2. Required underpinning knowledge	2.1 Define tools & spares parts. 2.2 Classification and use of spares parts. 2.3 Tools and spares parts defects. 2.4 Principals and techniques in maintenance and care
3. Required underpinning skills	3.1 Handling tools and spares parts 3.2 Communicating with supervisors & co-workers 3.3 Interpreting instructions
4. Required underpinning attitude	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 implication	The following resources must be provided 5.1 Tools, spares parts & physical facilities appropriate to perform activities. 5.2 Materials, consumable to perform activities.
6. Methods of assessment.	***Methods of assessment may includes but not limited to:*** 6.1. Continuous assessment. 6.2. Oral questions. 6.3. Written test. 6.4. Observation.
7. Context of assessment.	Competency may be assessed in the workplace or in a simulated workplace.

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National Technical and Vocational Qualification Framework (NTVQF) for Bangladesh
Motorcycle Servicing: NTVQF Level-1
Unit of Competency

Unit Code and Title	**TRSSS1004A1:** **Use graduated measuring instruments**
Nominal Hours	**20 hours**
Unit Descriptor	**This unit of competency requires the knowledge, skills and attitude to be able to use and maintain graduated measuring instruments in servicing of motorcycle.**
Elements of Competency	**Performance Criteria** ***Italicized*** **terms are elaborated in the range of variables**
1. F0llow 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 correct measuring tools and equipment for motor cycle service work	2.1 Use of metric steel rulers, steel tapes, feeler gauges and vernier callipers is demonstrated. 2.2 Correct ***measuring instruments*** and equipment are selected to meet job requirements.
3.Use measuring tools and equipment	3.1 ***Graduated Measuring instruments*** and equipment are used in a safe manner to prevent injury to self and others. 3.2 Measuring tools and equipment are used in a manner that does not cause damage to excessive wear on the tools and equipment.
4.Store and secure measuring tools and equipment	4.1 Tools and equipment are cleaned, checked and stored securely as per ***service manuals***.
Range of Variables	
Variable	**Range**
1. Occupational Safety and Health.	***OSH may includes but not limited to:*** 1.1 Clean work area 1.2 Oil spill control 1.3 Personal Protective Equipment 1.4 Risk assessment 1.5 Hazard identification 1.6 Manual handling techniques 1.7 Housekeeping

	1.8 Material safety data sheets (MSDS) 1.9 Reporting accidents and incidents 1.10 Environmental practices
2. Graduated measuring instruments	***Graduated measuring instruments may includes but not limited to:*** 2.1 Feeler gauges 2.2 Metric ruler and tape measures 2.3 Metric vernier callipers 2.4 Torque wrench
3. Service manuals	***Service manuals may includes but not limited to:*** 3.1 Manufacturers service manuals 3.2 Owners handbook 3.3 Non manufacturer manuals and service data information
4. Measuring Instrument	***Measuring Instruments may includes but not limited to:*** 4.1 Feeler gauges 4.2 Metric steel ruler and steel tape 4.3 Multi Meter (Analogue & Digital) 4.4 Vernier callipers 4.5 Range of suitable materials for measurement 4.6 Tyres pressure gauge & gun 4.7 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	1.1 Select and use graduated measuring instrument appropriate to the task. 1.2 Perform routine maintenance and storage of measuring instrument.
2. Required 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. Required Underpinning Skills	3.1 Handling of graduated measuring instrument. 3.2 Interpreting instruction. 3.1 Communicating with supervisors and co-worker.
4.Required underpinning attitude.	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 implication	The following resources must be provided 5.1 Tools, spares parts & physical facilities appropriate to perform activities. 5.2 Materials, consumable to perform activities.
6. Methods of assessment.	***Methods of assessment may includes but not limited to:*** 6.1. Continuous assessment. 6.2. Oral questions. 6.3. Written test. 6.4. Observation.

7. Context of assessment.	Competency may be assessed in the workplace or in a simulated workplace.

Accreditation Requirement

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National Technical and Vocational Qualification Framework (NTVQF) for Bangladesh
Motorcycle Servicing: NTVQF Level-1
Unit of Competency

Unit Code and Title	**TRSSS1005A1:** **Use motorcycle fasteners**
Nominal Hours	**20 hours**
Unit Descriptor	**This unit of competency requires the knowledge, skills and attitude to use fasteners of motorcycle.**
Elements of Competency	**Performance Criteria** ***Italicized* 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 common motorcycle fasteners	2.1 Different types of ***motorcycle fasteners*** and their applications are identified. 2.2 Knowledge of metric bolt identification in relation to diameter, head size and thread pitch as used in the motor cycle industry is demonstrated. 2.4 Correct ***tool*** selected for installation/removal of common motorcycle ***fasteners.***
3 Perform thread repair	3.1 Internal and external thread faults identified. 3.2 Common causes of thread damage identified. 3.3 Correct thread repair tools selected for specific faults. 3.4 Internal and external threads repaired using taps, die's and replacement threads (helicoil) as per workplace standards.
4 Use/install correct fastener for job	4.1 Suitable replacement ***parts and materials***, fastener for the job selected. 4.2 Common motor cycle fasteners correctly installed and tensioned as per ***service manuals***.
Range of Variables	
Variable	**Range**
1. Occupational Safety and Health.	***OSH may includes but not limited to:*** 1.1 Clean work area 1.2 Oil spill control 1.3 Personal Protective Equipment 1.4 Risk assessment

	1.5 Hazard identification 1.6 Manual handling techniques 1.7 Housekeeping 1.8 Material safety data sheets (MSDS) 1.9 Reporting accidents and incidents 1.10Environmental practices
2. Motorcycle fasteners	***Motorcycle fasteners may includes but not limited to:*** 2.1 Metric bolts and machine screws with hexagon and Allen key heads 2.2 Blade and Phillips type screws 2.3 Specialty fasteners used on motor cycles service components
3. Service manuals	***Service manuals may includes but not limited to:*** 3.1 Manufacturers service manuals 3.2 Owners handbook 3.3 Non manufacturer manuals and service data information
4. Tools and equipment	***Tools and equipmentmay includes but not limited to:*** 4.1 Combination spanners (assortment ring/open end) 4.2 Socket box metric (6-19mm) 4.3 Feeler gauges 4.4 Screwdrivers (variety of blade and Phillips) 4.5 Thread cleaner 4.6 Thread pitch gauge 4.7 Vernier callipers 4.8 Cutting oil 4.9 Metric tap and die set 4.10 Metric helical coil (replacement thread) kits 4.11 Torque wrench 4.12Special tools as required by manufacturer
5.Replacement parts and materials	***Replacement parts may includes but not limited to:*** 5.1 Suitable range of replacement fasteners.

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	1.1 Select and use common motorcycle fasteners appropriate to the task 1.2 Perform routine maintenance and storage of common motorcycle fasteners
2. Required underpinning knowledge	2.1 Relevant OSH practices 2.2 Identification of common motorcycle fasteners

3. Required underpinning skills	3.1 Ability to apply relevant OSH practices 3.2 Use common motorcycle fasteners 3.3 Follow written or verbal instructions
4. Required underpinning attitude	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 implication	The following resources must be provided 5.1 Tools, spares parts & physical facilities appropriate to perform activities. 5.2 Materials, consumable to perform activities.
6. Methods of assessment.	***Methods of assessment may includes but not limited to:*** 6.1. Continuous assessment. 6.2. Oral questions. 6.3. Written test. 6.4. Observation.
7. Context of assessment.	Competency may be assessed in the workplace or in a simulated workplace.

Accreditation Requirements

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OCCUPATION SPECIFIC UNITS
Pre-voc 2

National Technical and Vocational Qualification Framework (NTVQF) for Bangladesh
Motorcycle Servicing: NTVQF Level-1
Unit of Competency

Unit Code and Title	**TRSMS1006A1:** **Disassemble and reassemble of motorcycle component**
Nominal Hours	**20 hours**
Unit descriptor	**This unit of competency requires the knowledge, skills and attitude to dis-assemble and re-assemble of motor cycle components.**
Elements of competency	**Performance Criteria** ***Italicized* 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 motorcycle for component removal	2.1 Job card prepared as per workplace practice and customer requirements. 2.2 Work instructions are used to determine the job requirements including method, process and equipment. 2.3 Tools, equipment and replacement parts prepared as per work to be performed. 2.4 Motorcycle positioned as per workplace practices.
3. Disassemble and reassemble components	3.1 OSH requirements, including personal safety needs, are observed throughout the work. 3.2 Written notes/diagrams prior to dis-assembleof complex components are produced/developed to aid re-assemblyas per workplace procedures. 3.3 ***Motorcycle components*** are correctly dis-assemble, tagged and stored to prevent damage as per workplace procedures. 3.4 Components re-assemblyin logical sequence and relevant/functional tests performed to ensure correct operation as per ***service manuals***. 3.5 ***Replacement parts and materials*** are identified.
4. Clean work area and prepare motorcycle for pick up or storage	4.1 ***Tools and equipment*** and work area are cleaned and inspected for serviceable condition in accordance with workplace procedures.

	4.2 Final inspection is made to ensure work is to workplace expectations. 4.3 Motorcycle cleaned and prepared for use or vehicle storage as per workplace procedures. 4.4 Workplace documents are completed in accordance with workplace procedures.
Range of Variables	
Variable	**Range**
1. Occupational Safety and Health	***OSH may includes but not limited to:*** 1.1 Clean work area 1.2 Oil spill control 1.3 Personal Protective Equipment 1.4 Risk assessment 1.5 Hazard identification 1.6 Manual handling techniques 1.7 Housekeeping 1.8 Material safety data sheets (MSDS) 1.9 Reporting accidents and incidents 1.10 Environmental practices
2. Motorcycle components	***Motorcycle components may includes but not limited to:*** 2.1 Fuel tanks, side covers and seats 2.2 Brake and clutch levers/pedals and cables 2.3 Indicator and brake light assemblies and lenses 2.4 Mudguards and engine guards 2.5 Fairings and body covers 2.6 Foot pegs
3. Service manuals	***Service manuals may includes but not limited to:*** 3.1 Manufacturers service manuals 3.2 Owners handbook 3.3 Non manufacturer manuals and service data information
4. Tools and equipment	***Tools and equipmentmay includes but not limited to:*** 4.1 Combination spanners (assortment ring/open end) 4.2 Socket box metric (6-19mm) 4.3 Screwdrivers (flat and Phillips) 4.4 Combination pliers 4.5 Component tags 4.6 Special tools as required by manufacturer
5. Replacement parts and materials	***Replacement parts may includes but not limited to:*** 5.1 Suitable range of replacement fasteners

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.	1.1 Select dis-assemble and re-assemble of motorcycle component to the task 1.2 Perform routine maintenance and storage of the component
2. Required underpinning knowledge	2.1 Relevant OSH practices 2.2 Identification of basic trade tools and equipment 2.3 Ability to measure liquid volumes 2.4 Motor cycle main systems and components 2.5 Motor cycle controls
3 .Required underpinning skills	3.1 Ability to apply relevant OSH practices 3.2 Ability to maneuver motor cycles in confined spaces 3.3 Use hand tools 3.4 Follow written or verbal instructions
4. Required underpinning attitude	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 implication	The following resources must be provided 5.1 Tools, spares parts & physical facilities appropriate to perform activities. 5.2 Materials, consumable to perform activities.
6. Methods of assessment.	***Methods of assessment may includes but not limited to:*** 6.1. Continuous assessment. 6.2. Oral questions. 6.3. Written test. 6.4. Observation.
7. Context of assessment.	Competency may be assessed in the workplace or in a simulated workplace.
Accreditation Requirements Training Providers must be accredited by Bangladesh Technical Education Board (BTEB), 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 any national qualification.

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National Technical and Vocational Qualification Framework (NTVQF) for Bangladesh
Motorcycle Servicing: NTVQF Level-1
Unit of Competency

Unit Code and Title	**TRSMS1007A1:** **Change wheels and tyres**
Nominal Hours	**20 hours**
Unit Descriptor	**This unit of competency requires the knowledge, skills and attitude to change wheels and tyres of motor cycle.**
Elements of Competency	**Performance Criteria** ***Italicized*** **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 change wheels and tyres	2.1 Job card prepared as per workplace practice and customer requirements 2.2 Work instructions are used to determine the job requirements including method, process and equipment. 2.4 Materials, tools, equipment and replacement parts required to perform work are identified and prepared as per workplace procedures.
3.Remove wheel assembly for inspection	3.1 Work procedure is accessed from manufacturer service manual or service data and correctly interpreted. 3.2 ***Whee***l is removed in accordance with manufacturer procedures. 3.3 Removed wheel and associated components are inspected in accordance with manufacturers procedures and workplace practices.
4.Service, alloy rim/ replace spokes, tyres and tubes	4.1 Information and work procedure is accessed from manufacturer/component supplier specifications and interpreted. 4.2 Alloy rim/Spokes are inspected, replaced or re-tensioned as per manufacturer's specifications. 4.3 ***Tyres*** and or tubes are repaired according to manufacturer/component supplier procedures. 4.4 Tyres and or tubes are replaced according to manufacturer/component supplier procedures. 4.5 Tyres pressures checked and adjusted according to manufacturer/component supplier specifications.

5 Reassemble wheel assembly	5.1 Information and work procedure required for fitting/refitting and adjustment of wheel assemblies is accessed from manufacturer/ component supplier specifications and correctly interpreted. 5.2 Wheel fitting and adjusting procedures are carried out in accordance with manufacturer/component supplier specifications. 5.3 Tightening sequence, torque settings and spoke re-tensioning are completed in accordance with manufacturer/component supplier 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.
6 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	
Variable	**Range**
1. OccupationalSafety and Health.	***OSH may includes but not limited to:*** 1.1 Clean work area 1.2 Oil spill control 1.3 Personal Protective Equipment 1.4 Risk assessment 1.5 Hazard identification 1.6 Manual handling techniques 1.7 Housekeeping 1.8 Material safety data sheets (MSDS) 1.9 Reporting accidents and incidents 1.10Environmental practices
2. Wheels and tyres	***Wheels and tyres may includes but not limited to:*** 2.1 Steel, alloy and wire sprocket wheels as used on motor cycles and motor scooters in Bangladesh 2.2 Tubbed and tubeless type tyres

3.Service manuals	***Service manuals may includes but not limited to:*** 3.1 Manufacturers service manuals 3.2 Owners handbook 3.3 Tyre manufacturer manuals and specifications 3.4 Non manufacturer manuals and service data information
4.Tools and equipment	***Tools and equipment may includes but not limited to:*** 4.1 Combination spanners (Assortment ring/open end) 4.2 Socket box (6-19mm) 4.3 Screwdrivers (Flat and Phillips) 4.4 Puncture repair equipment 4.5 Spoke tools 4.6 Tyre irons and levers 4.7 Rubber mallet 4.8 Tire inflation equipment 4.9 Motor cycle lifting and support equipment 4.10 Special tools as required by manufacturer
5. Replacement parts and materials	***Replacement parts and materials may includes but not limited to:*** 5.1 Tubes 5.2 Tyres 5.3 Spokes 5.4 Puncture repair equipment
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	1.1 Select appropriate tools for change wheel and tyres 1.2 Perform routine maintenance and storage of wheel and tyres changing tools
2.Underpinning Knowledge	2.1 Relevant OSH practices 2.2 Identification of basic trade tools and equipment 2.3 Motor cycle main systems and components 2.4 Motor cycle controls
3.Underpinning Skills	3.1 Ability to apply relevant OSH practices 3.2 Ability to maneuver motor cycles in confined spaces 3.3 Use hand tools 3.4 Follow written or verbal instructions

4.Underpinning Attitude	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 implication	The following resources must be provided 5.1 Tools, spares parts & physical facilities appropriate to perform activities. 5.2 Materials, consumable to perform activities.
6. Methods of assessment.	***Methods of assessment may includes but not limited to:*** 6.1. Continuous assessment. 6.2. Oral questions. 6.3. Written test. 6.4. Observation.
7. Context of assessment.	Competency may be assessed in the workplace or in a simulated workplace.

Accreditation Requirements

Training Providers must be accredited by Bangladesh Technical Education Board (BTEB), 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 any national qualification.

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National Technical and Vocational Qualification Framework (NTVQF) for Bangladesh
Motorcycle Servicing: NTVQF Level-1
Unit of Competency

Unit Code and Title	**TRSMS1008A1:** **Service motorcycle engine**
Nominal Hours	**60 hours**
Unit Descriptor	**This unit of competency requires the knowledge, skills and attitude to be able to perform engine servicing of different types of motor cycle.**
Elements of Competency	**Performance Criteria** ***Italicized* terms are elaborated in the range of variables**
1.Follow OSH Practices	1.1. Personal protective ***tools and 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 2 & 4 stroke are identified. 2. 2. Demonstrated to identify engine component- 2& 4 stroke 2.3. Difference between 2 & 4 stroke engine explained 2.4. Engine operation – 2 stroke & 4 stroke cycle demonstrated
3. Perform engine servicing	3.1 Demonstrated to change engine oil & filter 3. 2 Demonstrated to clean/ change air filter 3. 3 Engine oil level checks in different models demonstrated 3..4 Demonstrate to adjust valve clearances (tappets) 3.5 Demonstrated to adjustment timing chain
Range of Variables	
Variable	**Range**
1. Occupational Safety Health.	***OSH may includes but not limited to:*** 1.1 Clean work area 1.2 Oil spill control 1.3 Personal Protective Equipment 1.4 Risk assessment 1.5 Hazard identification 1.6 Manual handling techniques 1.7 Housekeeping 1.8 Material safety data sheets (MSDS) 1.9 Reporting accidents and incidents

	1.10Environmental practices
2.Service manuals	***Service manuals may includes but not limited to:*** 2.1 Manufacturers service manuals 2.2 Owners handbook 2.3 Non manufacturer manuals and service data information
3. Tools and equipment	***Tools and equipmentmay includes but not limited to:*** 3.1 Combination spanners (assortment ring/open end) 3.2 Socket box metric(6-19) 3.3 Screwdrivers (variety of blade and Phillips) 3.4 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	1.1 Select appropriate motorcycle engine for servicing to the task 1.2 Perform routine servicing to motorcycle engine
2.Required underpinning knowledge	2.1 Relevant OSH practices 2.2 Identification of basic trade tools and equipment 2.3 Motor cycle main systems and components
3. Required underpinning skills	3.1 Ability to apply relevant OSH practices 3.2 Ability to maneuver motor cycles in confined spaces 3.3 Use hand tools 3.4 Follow written or verbal instructions
4. Required underpinning attitude	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 implication.	The following resources must be provided 5.1 Tools, spares parts & physical facilities appropriate to perform activities. 5.2 Materials, consumable to perform activities.
6. Methods of assessment.	***Methods of assessment may includes but not limited to***: 6.1. Continuous assessment. 6.2. Oral questions. 6.3. Written test. 6.4. Observation.
7. Context of assessment.	Competency may be assessed in the workplace or in a simulated workplace.

Accreditation Requirements

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National Technical and Vocational Qualification Framework (NTVQF) for Bangladesh
Motorcycle Servicing: NTVQF Level-1
Unit of Competency

Unit Code and Title	**TRSMS1009A1:** **Replace motorcycle seals, gaskets and bearings**
Nominal Hours	**20 hours**
Unit Descriptor	**This unit of competency requires the knowledge, skills and attitude to service seals, gaskets and bearings of motorcycle.**
Elements of Competency	**Performance Criteria** ***Italicized* 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 and preferred action determined
3. Replace seals and gaskets	3.1 Relevant service procedures are identified from manufacturer's manuals or service publications. 3.2 Gaskets, sealants and adhesives selected are those most appropriate for the work requirement. 3.3 Sealants and adhesives are used in accordance with manufacturer/component supplier 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/component supplier instructions.
4. Replace bearings	4.1 ***Bearings*** checked in accordance with manufacturer/component supplier instructions. 4.2 Faults are identified and reported to supervisor and preferred action determined 4.3 Bearings serviced/replaced in accordance with workplace procedures and manufacturer/ component supplier specifications. 4.5 ***Replacement parts and materials*** are identified.
5. Clean work area and prepare motorcycle for use or storage	5.1 Equipment and work area are cleaned and inspected for serviceable condition in accordance with workplace procedures.

	5.2 Final inspection is made to ensure work is to workplace expectations. 5.3 Motorcycle cleaned and prepared for use or storage as per workplace procedures. Workplace documents are completed in accordance with workplace procedures.
Range of Variables	
Variable	**Range**
1 Occupational Safety Health.	***OSH may includes but not limited to:*** 1.1 Clean work area 1.2 Oil spill control 1.3 Personal Protective Equipment 1.4 Risk assessment 1.5 Hazard identification 1.6 Manual handling techniques 1.7 Housekeeping 1.8 Material safety data sheets (MSDS) 1.9 Reporting accidents and incidents 1.10Environmental practices
2 Gaskets and seals	***Gaskets and seals may includes but not limited to:*** 2.1 Oil filter and housing gaskets 2.2 Sump plug gaskets 2.3 Clutch and engine side cover gaskets 2.4 Valve cover gaskets 2.5 Transmission selector seals.
3 Bearings	***Bearings may includes but not limited to:*** 3.1 Wheel and hub bearings. 3.2 Steering head bearings. 3.3 Swing arm bearing/ bush.
4 Tools and equipment	***Tools and equipmentmay includes but not limited to:*** 4.1 Combination spanners. 4.2 Socket wrench. 4.3 Filler gauge Vernier callipers. 4.4 Punch set. 4.5 Screwdrivers (Flat and Phillips) 4.6 Manufacture's special tools. 4.7 Torx 4.8 Allen key
5 Replacement parts and materials	***Replacement parts and materials may includes but not limited to:*** 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	1.1 Select the appropriate seals, gasket and bearing to the task. 1.2 Perform routine maintenance and storage of seals. Gaskets and bearings
2. Underpinning knowledge	2.1 Relevant OSH practices 2.2 Identification of basic trade tools and equipment 2.3 Motor cycle main systems and components 2.4 Motor cycle controls
3. Underpinning skills	3.1 Ability to apply relevant OSH practices 3.2 Use hand tools 3.3 Follow written or verbal instructions
4. Underpinning attitude	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 implication.	The following resources must be provided 5.1 Tools, spares parts & physical facilities appropriate to perform activities. 5.2 Materials, consumable to perform activities.
6. Methods of assessment.	***Methods of assessment may includes but not limited to:*** 6.1. Continuous assessment. 6.2. Oral questions. 6.3. Written test. 6.4. Observation.
7. Context of assessment.	Competency may be assessed in the workplace or in a simulated workplace.

Accreditation Requirements

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National Technical and Vocational Qualification Framework (NTVQF) for Bangladesh
Motorcycle Servicing: NTVQF Level-1
Unit of Competency

Unit Code and Title	**TRSMS10010A1:** **Service motorcycle lubricating system**
Nominal Hours	**20 hours**
Unit Descriptor	**This unit of competency requires the knowledge, skills and attitude to identify lubricants and fluids and there application during motor cycle servicing.**
Elements of Competency	**Performance Criteria** ***Italicized* terms are elaborated in the range of variables**
1. Follow OSH Practices	1.1 Personal protective equipment used during work as per job requirement 1.2 ***OSH*** standards observed as set out by the workplace practices and legislation. 1.3 ***Tools and quipment*** is used safely according to specifications and standard operating procedures.
2.Check motorcycle lubrication points	2.1 Lubrication points and ***fluid*** level checks required for motor cycle service are identified from manufacturer manuals and component service specifications. 2.2 Engine and transmission fluid levels checked and adjusted as required as per manufacturers specifications. 2.3 Grease points identified and correct lubricant applied as per manufacturers specifications. 2.4 Hyrdraulic brake/clutch fluid resevoir's checked and adjusted as per manufacturers specifications. 2.5 Battery fluid level checked and adjusted as per manufacturers/component specifications. 2.6 Drive chain inspected and lubricant applied as per manufacturers specifications. 2.7 General purpose lubricants and/or penetrating fluid applied to cables, levers and pivot points as per workplace procedures.
2. Select motorcycle lubricant	3.1 Correct grade/type of engine oil selected from manufacturers and lubricant specification manuals. 3.2 Correct grade/type of transmission fluid selected from manufacturers and lubrication specification manuals. 3.3 Correct grade/type of brake and clutch fluid selected from manufacturers and lubricant specification manuals.

	3.4 Knowledge of lubricant properties and typical application points of common types of service greases demonstrated. 3.5 Correct lubricant and application points for motor cycle service identified as per manufacturers procedures. 3.6 Knowledge of and typical application of penetrating, solid and powdered type lubricants demonstrated. 3.7 Correct ***lubricants*** applied during schedule service as per workplace procedures and manufacturers specifications. 3.8 Lubricants, tools and equipment, ***replacement parts andmaterials*** required to perform work are identified and prepared as per ***service manuals***.
Range of Variables	
Variable	**Range**
1. Occupational Safety&Health.	***OSH may includes but not limited to:*** 1.1 Clean work area 1.2 Oil spill control 1.3 Personal Protective Equipment 1.4 Risk assessment 1.5 Hazard identification 1.6 Manual handling techniques 1.7 Housekeeping 1.8 Material safety data sheets (MSDS) 1.9 Reporting accidents and incidents 1.10Environmental practices
2. Lubricants and fluids	***Lubricants and fluids may includes but not limited to:*** 2.1 Engine oils 2.2 Transmission oils and fluids 2.3 Brake/clutch fluid 2.4 Battery electrolyte 2.5 Drive chain lubricants 2.6 Solid and powdered lubricants 2.7 Penetrating/dewatering fluids
3. Service manuals	***Service manuals may includes but not limited to:*** 3.1 Manufacturers service manuals 3.2 Owners handbook 3.3 Lubrication charts and specifications 3.4 Non manufacturer manuals and service data information
4. Tools and equipment	***Tools and equipment may includes but not limited to:*** 4.1 Combination spanners (assortment ring/open end) 4.2 Socket box metric (6-19mm) 4.3 Screwdrivers (flat of blade and Phillips)

	4.4 Oil funnel 4.5 Oil measuring container 4.6 Oil pan (container to hold waste oil) 4.7 Waste Oil storage facilities 4.8 Oil spill equipment (mop, bucket, saw dust or similar) 4.9 Motor cycle lifting and support equipment 4.10 Special tools as required by manufacturer
5. Replacement parts and materials	***Replacement parts and materials may includes but not limited to:*** 5.1 Suitable range of engine and gear oils 5.2 Brake and clutch fluid 5.3 Lubricating oil 5.4 Battery electrolyte 5.5 Solid and powdered 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	1.1 Select proper oils and fluids for lubricating system. 1.2 Perform routine maintenance lubricating system
2. Underpinning Knowledge	2.1 Relevant OSH practices 2.2 Identification of basic trade tools and equipment 2.3 Ability to measure liquid volumes 2.4 Motor cycle main systems and components
3. Underpinning Skills	3.1 Ability to apply relevant OSH practices 3.2 Use hand tools 3.3 Follow written or verbal instructions
4. Underpinning Attitude	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 implication.	The following resources must be provided 5.1 Tools, spares parts & physical facilities appropriate to perform activities. 5.2 Materials, consumable to perform activities.

6. Methods of assessment.	***Methods of assessment may includes but not limited to:*** 6.1. Continuous assessment. 6.2. Oral questions. 6.3. Written test. 6.4. Observation. 6.5 Assignment.
7. Context of assessment.	Competency may be assessed in the workplace or in a simulated workplace.

Accreditation Requirement

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National Technical and Vocational Qualification Framework (NTVQF) for Bangladesh
Motorcycle Servicing: NTVQF Level-1
Unit of Competency

Unit Code and Title	**TRSMS10011A1:** **Service motorcycle ignition system**
Nominal Hours	**25 hours**
Unit Descriptor	**This unit of competency requires the skills, knowledge and attitude to perform servicing of motor cycle ignition system.**
Elements of Competency	**Performance Criteria** ***Italicized*** **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 ignition system servicing	2.1 Job card prepared as per workplace practice and customer requirements 2.2 Work instructions are used to determine the job requirements including method, process and equipment. 2.4 Materials, tools, equipment and replacement parts required to perform work are identified and prepared as per workplace procedures.
3.Inspect and service spark plugs and high tension leads	3.1 Service procedures and specifications are identified from manufacturer's manuals or service publications. 3.2 Ignition high tension lead and spark plug insulator/boot inspected for visual damage. 3.3 High tension leads are tested 3.4 Spark plug cleaned, serviced or replaced as per manufacturers service procedures. 3.5 Faults are identified and reported to supervisor and preferred action determined.
4.Inspect and service ignition triggering system	4.1 Service procedures and specifications are identified from manufacturer's manuals or service publications. 4..2 Ignition triggering system is serviced as per manufacturers procedures. 4.3 ***Ignition system*** timing checked and adjusted (where adjustable) as per manufacturers procedures. 4.4 ignition coil circuit (CDI) tested 4.5Faults are identified and reported to supervisor and preferred action determined.
5.Clean work area and prepare motorcycle for use or storage	5.1 Equipment and work area are cleaned and inspected for serviceable condition in accordance with workplace procedures.

	5.2 Final inspection is made to ensure work is to workplace expectations. 5.3 Motorcycle, ***tools and equipment***are cleaned and prepared for use or storage as per***service manuals***. 5.4 Workplace documents are completed in accordance with workplace procedures. 5.5 ***Replacement parts and materials are identified.***
Range of Variables	
Variable	**Range**
1 Occupational Safety Health.	***OSH may includes but not limited to:*** 1.1 Clean work area 1.2 Oil spill control 1.3 Personal Protective Equipment 1.4 Risk assessment 1.5 Hazard identification 1.6 Manual handling techniques 1.7 Housekeeping 1.8 Material safety data sheets (MSDS) 1.9 Reporting accidents and incidents 1.10Environmental practices
2 Ignition systems	***Ignition systems may includes but not limited to:*** 2.1 Contact breaker (points) type ignition systems as used on older type motor cycles in Bangladesh 2.2 Capacitor discharge (CDI) type ignition systems 2.3 Electronic type ignitions systems
3 Service manuals	***Service manuals may includes but not limited to:*** 3.1 Manufacturers service manuals 3.2 Owners handbook 3.3 Non manufacturer manuals and service data information
4 Tools and equipment	***Tools and equipmentmay includes but not limited to:*** 4.1 Combination spanners (assortment ring/open end) 4.2 Socket box metric (6-19mm) 4.3 Feeler/spark plug gauge 4.4 Small file contact fails 4.5 Bench vice 4.6 Range of spark plug sockets and plug wrench 4.7Screwdrivers (flat and Phillips) 4.8Special tools as required by manufacturer
5 Replacement parts and	***Replacement parts may includes but not limited to:***

materials	5.1 Suitable range of new and used replacement spark plugs 5.2 Suitable range of contact breaker points 5.3 Suitable range of spark plug boots, plug lead ends/resistors and high tension leads
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	1.1 Select appropriate tools for ignition systems to the task. 1.2 Perform routine maintenance for ignition system.
2 Underpinning knowledge	2.1 Relevant OSH practices. 2.2 Identification of basic trade tools and equipment. 2.3 Ability to measure liquid volumes. 2.4 Motor cycle main systems and components. 2.5 Motor cycle controls.
3. Underpinning skills	3.1 Ability to apply relevant OSH practices 3.2 Ability to maneuver motor cycles in confined spaces 3.3 Use hand tools 3.4 Follow written or verbal instructions
4 Underpinning attitude	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 senioin workplace. 4.6. Environmental concern. 4.7. Sincere and honest to duties.
5. Resource implication.	The following resources must be provided 5.1 Tools, spares parts & physical facilities appropriate to perform activities. 5.2 Materials, consumable to perform activities.
6. Methods of assessment.	***Methods of assessment may includes but not limited to:*** 6.1. Continuous assessment. 6.2. Oral questions. 6.3. Written test. 6.4. Observation. 6.5. Assignment.

7. Methods of delivery.	***Methods of delivery may includes but not limited to:*** 7.1. Lessons. 7.2. Lectures. 7.3. Individual presentation. 7.4. Group discussion.
Accreditation Requirements Training Providers must be accredited by Bangladesh Technical Education Board (BTEB), 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 any national qualification. Accredited providers assessing against this unit of competency must meet the quality assurance requirements set by BTEB.	

National Technical and Vocational Qualification Framework (NTVQF) for Bangladesh
Motorcycle Servicing: NTVQF Level-1
Unit of Competency

Unit Code and Title	**TRSMS10012A1:** **Service battery system**
Nominal Hours	**20 hours**
Unit Descriptor	**This unit of competency requires the knowledge, skills and attitude to service, test and charge batteries of motorcycle.**
Elements of Competency	**Performance Criteria** ***Italicized* 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 motorcycle for battery servicing	2.1 Job card prepared as per workplace practice and customer requirements. 2.2 Work instructions are used to determine the job requirements including method, process and equipment. 2.3 OSH requirements, including personal safety needs, are observed throughout the work. 2.4 Materials, tools, equipment and replacement parts required to perform work are identified and prepared as per workplace procedures.
3 Service replace batteries	3.1 Various types of battery are identified 3.2 Information required for battery servicing is accessed from appropriate manufacturers/component specifications and correctly interpreted. 3.3 Materials, tools, equipment and replacement parts required to perform work are identified and prepared as per workplace procedures. 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 Test Batteries	4.1 Information for battery testing is accessed from vehicle manufacturer/component supplier specifications and correctly interpreted. 4.2 Materials, tools and equipment required to perform work are identified and prepared as per workplace procedures. 4.3 Battery tests are performed and results analysed in accordance with manufacturer/component supplier

	specifications and workplace procedures.
5 Charge batteries	5.1 Information for charging is accessed from manufacturer/ component supplier specifications and correctly interpreted. 5.2 Materials, tools, equipment and replacement parts required to perform work are identified and prepared as per workplace procedures. 5.3 Electrolyte levels are checked and topping up in accordance with workplace procedures. 5.4 Batteries are charged in accordance with ***service manuals***and component manufacturer/component supplier recommendations.
6 Jump start motorcycle	6.1 Information is accessed from manufacturer/component supplier specifications and correctly interpreted. 6.2 Leads are connected/disconnected in correct sequence and polarity. 6.3 All work is carried out without causing damage to component or system.
7 Clean work area and prepare motorcycle for use or storage	7.1 ***Tools and equipment*** and work area are cleaned and inspected for serviceable condition in accordance with workplace procedures. 7.2 Final inspection is made to ensure work is to workplace expectations. 7.3 Motorcycle cleaned and prepared for use or storage as per workplace procedures. 7.4 Workplace documents are completed in accordance with workplace procedures. 7.5 ***Replacement parts and materials*** are identified.
Range of Variables	
Variable	**Range**
1 Occupational Safety Health.	***OSH may includes but not limited to:*** • Clean work area • Oil spill control • Personal Protective Equipment • Risk assessment • Hazard identification • Manual handling techniques • Housekeeping • Material safety data sheets (MSDS) • Reporting accidents and incidents • Environmental practices
2 Batteries	***Batteries may includes but not limited to:*** • 6 volt and 12 volt conventional wet cell type automotive batteries
3 Service manuals	***Service manuals may includes but not limited to:*** • Manufacturers service manuals • Owners handbook • Non manufacturer manuals and service data information

4 Tools and equipment	***Tools and equipment may includes but not limited to:*** • Combination spanners (assortment ring/open end) • Socket box metric (6-19mm) • Feeler/spark plug gauge • Contact file • Bench vice • Range of spark plug sockets and plug wrench • Screwdrivers (variety of blade and Phillips) • Special tools as required by manufacturer
5 Replacement parts and materials	***Replacement parts may includes but not limited to:*** • Suitable range of new and used replacement spark plugs, pick up coil generating and lighting coil, CDI unit and CB point • Suitable range of contact breaker points • Suitable range of spark plug boots, plug lead ends/resistors and high tension leads
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	1.1 Select appropriate battery to the task. 1.2 Perform routine maintenance of batteries.
2 Underpinning knowledge	2.1 Relevant OSH practices 2.2 Identification of basic trade tools and equipment 2.3 Motor cycle main systems and components 2.4 Motor cycle controls
3 Underpinning skills	3.1 Ability to apply relevant OSH practices 3.2 Ability to maneuver motor cycles in confined spaces 3.3 Use hand tools 3.4 Follow written or verbal instructions
4 Underpinning attitude	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 implication.	The following resources must be provided 5.1 Tools, spares parts & physical facilities appropriate to perform activities. 5.2 Materials, consumable to perform activities.
6. Methods of assessment.	***Methods of assessment may includes but not limited to:*** 6.1. Continuous assessment. 6.2. Oral questions. 6.3. Written test. 6.4. Observation.
7. Context of assessment.	Competency may be assessed in the workplace or in a simulated workplace.
Accreditation Requirements Training Providers must be accredited by Bangladesh Technical Education Board (BTEB), 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 any national qualification. Accredited providers assessing against this unit of competency must meet the quality assurance requirements set by BTEB.	

National Technical and Vocational Qualification Framework (NTVQF) for BangladeshMotorcycle Servicing: NTVQF Level-1

Unit of Competency

Unit Code and Title	**TRSMS10013A1:** **Service motorcycle braking system**
Nominal Hours	**25 hours**
Unit Descriptor	**This unit of competency requires the knowledge, skills and attitude to perform maintenance and servicing procedures of motor cycles brake system.**
Elements of Competency	**Performance Criteria** ***Italicized*** **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 used safely according to specifications and standard operating procedures.
2 Prepare motorcycle for brake system servicing	2.1 Job card prepared as per workplace practice and customer requirements. 2.2 Work instructions are used to determine the job requirements including method, process and equipment. 2.4 Materials, tools, equipment and replacement parts required to perform work are identified and prepared as per workplace procedures.
3 Inspect and service disc and drum type brake systems	3.1 Various types of brakes (Hydraulic disk and dram) identified 3.2 ***Brake systems*** inspected for component wear and serviceability as per manufacturers procedures. 3.3 Worn and unserviceable components serviced/replaced and adjusted as per manufacturers procedures. 3.4 Hydraulic brake fluid is checked/changed and level adjusted as per manufacturer's procedures and specifications. 3.5 Functional tests performed to determine brake performance is as per ***service manuals***.

4 Clean work area and prepare vehicle for use or storage	4.1 ***Tools and equipment*** and work area are cleaned and inspected for serviceable condition in accordance with workplace procedures. 4,2 Final inspection is made to ensure work is to workplace expectations. 4.3 Vehicle cleaned and prepared for use or storage as per workplace procedures. 4.4 Workplace documents are completed in accordance with workplace procedures. 4.5***. Replacement parts*** and materials are identified.
Range of Variables	
Variable	Range
1. Occupational Safety&Health.	***OSH may includes but not limited to***: 1.1 Clean work area 1.2 Oil spill control 1.3 Personal Protective Equipment 1.4 Risk assessment 1.5 Hazard identification 1.6 Manual handling techniques 1.7 Housekeeping 1.8 Material safety data sheets (MSDS) 1.9 Reporting accidents and incidents 1.10Environmental practices
2. Brake systems	***Brake systems may includes but not limited to:*** 2.1 Disc and drum and hydraulic type brake systems
3. Service manuals	***Service manuals may includes but not limited to:*** 3.1 Manufacturers service manuals 3.2 Owners handbook 3.3 Non manufacturer manuals and service data information
4. Tools and equipment	***Tools and equipmentmay includes but not limited to:*** 4.1 Combination spanners (assortment ring/open end) 4.2 3/8 or 1/2 in drive socket set 4.3 Feeler gauges 4.4 Screwdrivers (variety of blade and Phillips) 4.5 Oil spill equipment (mop, bucket, saw dust or similar) 4.6 Parts washing equipment 4.7 Motor cycle lifting and support equipment 4.8 Special tools as required by manufacturer
5. Replacement parts and materials	***Replacement parts may includs but not limited to:*** 5.1 Replacement disc brake pads 5.2 Replacement drum brake shoes 5.3 Brake fluid 5.4Suitable 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	1.1 Select appropriate braking system to the task. 1.2 Perform routine maintenance of braking system.
2. Underpinning knowledge	2.1 Relevant OSH practices 2.2 Identification of basic trade tools and equipment 2.3 Ability to measure liquid volumes 2.4 Motor cycle main systems and components
3. Underpinning skills	3.1 Ability to apply relevant OSH practices 3.2 Use hand tools 3.4 Follow written or verbal instructions
4. Underpinning attitude	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 seniorin workplace. 4.6. Environmental concern. 4.7. Sincere and honest to duties.
5. Resource implication.	The following resources must be provided 5.1 Tools, spares parts & physical facilities appropriate to perform activities. 5.2 Materials, consumable to perform activities.
6. Methods of assessment.	***Methods of assessment may includes but not limited to:*** 6.1. Continuous assessment. 6.2. Oral questions. 6.3. Written test. 6.4. Observation.
7. Context of assessment.	Competency may be assessed in the workplace or in a simulated workplace.

Accreditation Requirements

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National Technical and Vocational Qualification Framework (NTVQF) for Bangladesh
Motorcycle Servicing: NTVQF Level-1
Unit of Competency

Unit Code and Title	**TRSMS10014A1:** **Service motorcycle fuel system**
Nominal Hours	**20 hours**
Unit Descriptor	**This unit of competency requires the knowledge, skills and attitude to service carburetted type motor cycle fuel systems.**
Elements of Competency	**Performance Criteria** ***Italicized* 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 g procedures.
2. Prepare motorcycle for fuel system servicing	1.1 Job card prepared as per workplace practice and customer requirements. 1.2 Work instructions are used to determine the job requirements including method, process and equipment. 1.4 Materials, tools, equipment and replacement parts required to perform work are identified and prepared as per workplace procedures.
3. Inspect fuel system	3.1 Relevant service procedures are identified from ***servicemanuals*** or service publications. 3.2 Fuel tank, fuel lines, fuel filters, fuel strainers , fuel fit cock and air filter inspected as per manufacturer's procedures. 3.3 Fuel sample taken and inspected from carburettor fuel bowl as per workplace procedures and specifications.
4 Service fuel system	4.1 ***Fuel system*** service procedures are identified from manufacturer's manuals or service publications. 4.2 Fuel strainers, fuel lines, fuel filters and air filter are checked and replaced as per manufacturer recommendations and procedures. 4.3 Carburettor idle speed and mixture adjustments performed to manufacturer's procedures and specifications.
5 Clean work area and	5.1 ***Tools and equipment*** and work area are cleaned and

prepare vehicle for use or storage	inspected for serviceable condition in accordance with workplace procedures. 5.2 Final inspection is made to ensure work is to workplace expectations. 5.3 Vehicle cleaned and prepared for use or vehicle storage as per workplace procedures. 5.4 Workplace documents are completed in accordance with workplace procedures. 5.5 ***Replacement parts and materials*** are identified.
Range of Variables	
Variable	**Range**
1 Occupational Safety &Health.	***OSH may includes but not limited to:*** 1.1 Clean work area 1.2 Oil spill control 1.3 Personal Protective Equipment 1.4 Risk assessment 1.5 Hazard identification 1.6 Manual handling techniques 1.7 Housekeeping 1.8 Material safety data sheets (MSDS) 1.9 Reporting accidents and incidents 1.10Environmental practices
2 Fuel systems	***Fuel systems may includes but not limited to:*** 2.1 Fuel systems used on 2 and 4 stroke petrol engines as used in common motor cycles in Bangladesh
3 Service manuals	***Service manuals may includes but not limited to:*** 3.1 Manufacturers service manuals 3.2 Owners handbook 3.3 Non manufacturer manuals and service data information
4 Tools and equipment	***Tools and equipmentmay includes but not limited to:*** 4.1 Combination spanners (assortment ring/open end) 4.2 3/8 or 1/2 in drive socket set 4.3 Range of Phillips and blade type screwdrivers 4.4 Graduated measuring containers 4.5 Special tools as required by manufacturer
5 Replacement parts and materials	***Replacement parts may includes but not limited to:*** 5.1 air filters 5.2 fuel filters 5.3 fuel hose/line 5.4 range of hose clamps 5.5 stroke oil 5.6 Petrol fuel

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	1.1 Select appropriate tools for servicing engine fuel system. 1.2 Perform routine maintenance to the engine fuel system.
2. Underpinning knowledge	2.1 Relevant OSH practices 2.2 Identification of basic trade tools and equipment 2.3 Ability to measure liquid volumes 2.5 Motor cycle main systems and components
3. Underpinning skills	3.1 Ability to apply relevant OSH practices 3.2 Use hand tools 3.4 Follow written or verbal instructions
4. Underpinning attitude	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 inworkplace. 4.6. Environmental concern. 4.7. Sincere and honest to duties.
5. Resource implication.	The following resources must be provided 5.1 Tools, spares parts & physical facilities appropriate to perform activities. 5.2 Materials, consumable to perform activities.
6. Methods of assessment.	***Methods of assessment may includes but not limited to***: 6.1. Continuous assessment. 6.2. Oral questions. 6.3. Written test. 6.4. Observation. 6.5. Assignment.
7. Context of assessment.	Competency may be assessed in the workplace or in a simulated workplace.

Accreditation Requirements

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