NATIONAL COMPETENCY STANDARDS
FOR
HEAVY VEHICLE MECHANIC
(NC2 & NC3)

Department of Occupational Standards
Ministry of Labour and Human Resources
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FOREWORD

The Department of Occupational Standards of the Ministry of Labour and Human Resources is pleased to present the National Competency Standards (NCSs) for Heavy Vehicle Mechanic. The standards represent the fruits of hard work and invaluable experiences gained by the department since its establishment in the latter half of 2003. The main aim of developing NCS is to set up a well-defined nationally recognized Vocational Qualification System that will help set a benchmark for the Technical Vocational Education and Training (TVET) System in our country aligned to international best practices.

NCS is one of the base pillars in the Bhutan Vocational Qualification Framework (BVQF) and is the first step in its implementation. The NCS are developed and revised to ensure that employees or vocational graduates possess and acquire the desired competencies required by industries and employers. In order to ensure this close match in supply and demand of competencies, NCS have been developed and revised in close consultation and partnership with industry experts and validated by the Technical Advisory Committees of the concerned economic sectors.

A vocational education and training system based on NCS shall ensure that delivered training is of a high quality and relevant to the needs of the labour market. As a result, future TVET graduates will be better equipped to meet the need and expectations of industries and employers. This positive impact on the employability of TVET graduates will enhance the reputation of vocational education and training and make it attractive to school leavers.

I gratefully acknowledge collaboration and the valuable contributions made by experts from industries during the consultation and validation processes of the standards. I look forward for continued engagement and participation of the industry and employers in the development of a quality assured demand driven TVET system and to build competent and productive national workforce that will contribute to the continued socio-economic progress of our country.

Director
Department of Occupational Standards
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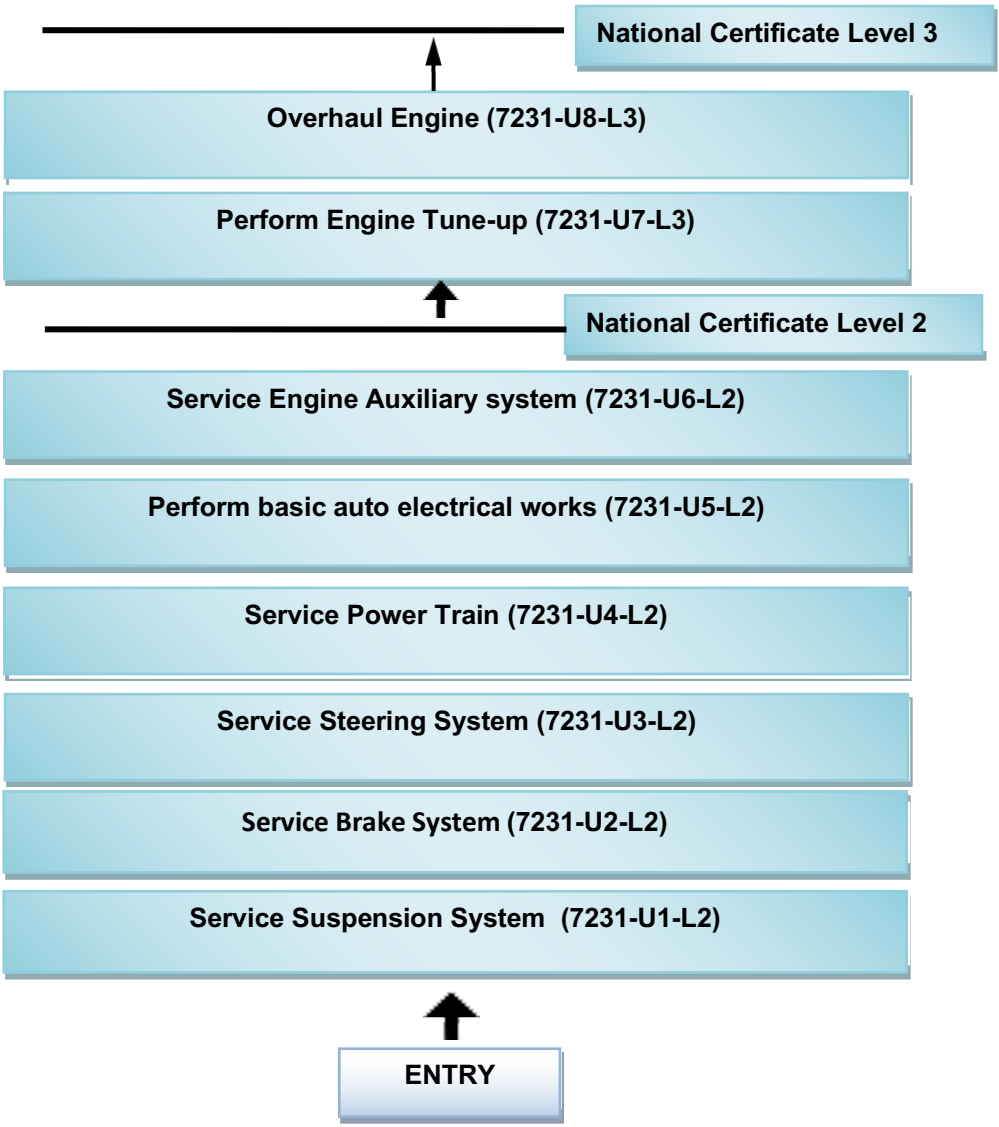
PACKAGING OF QUALIFICATIONS



Overview of National Competency Standards

UNIT TITLE	ELEMENTS OF COMPETENCE
1. Service Suspension system	1. Diagnose suspension system 2. Service faulty suspension components
2. Service brake system	1. Overhaul and service brake system 2. Adjust brake system
3. Service steering system	1. Perform wheel alignment and balancing 2. Service steering system 3. Service kingpin
4. Overhaul power/drive train	1. Overhaul and service clutch system 2. Adjust clutch system 3. Service transmission components 4. Service propeller shaft components 5. Service final drive and differential components 6. Service wheel bearings and components 7. Service drive or axle shaft components
5. Perform basic auto electrical works	1. Inspect and replace basic electrical components 2. Service batteries and jump start vehicle
6. Service engine auxiliary system	1. Service cooling system 2. Service lubricating system 3. Service fuel system
7. Perform engine tune-up	1. Service air induction and exhaust system 2. Carry out diesel engine (CI) tune-up
8. Overhaul Engine	1. Diagnose problems and dismount engine 2. Service engine

UNIT TITLE : Service Suspension System

DESCRIPTOR : This unit covers the competencies required to diagnose and service suspension system following safety procedures at all times.

CODE : 7231- U1- L2

ELEMENTS OF COMPETENCE	PERFORMANCE CRITERIA
1. Diagnose suspension system	1.1 Check the suspension components through ***diagnostic techniques*** as per the standard procedures. 1.2 Identify the ***faults*** and recommend for necessary action as per the standard procedures.
2. Service faulty suspension components	2.1 Use ***PPEs*** as per the job requirement following the standard procedure. 2.2 Select and use required ***tools and equipment*** as per the job requirement following standard procedures 2.3 Dismount and mount ***suspension components*** as per the repair manual following standard procedures 2.4 ***Service*** suspension components as per the standard procedures.

RANGE STATEMENT	
Tools and equipment may include but not limited to:	
● Support stand ● Grease dispenser ● Socket wrench set	● Torque wrench ● Hydraulic jack ● Shock absorber testing

• Hand tool set • Wheel wedge	equipment • Bench Vice
Personal protective equipment (PPE) may include but not limited to:	
• Hand gloves • Workshop dress	• Safety shoes • Safety goggles
Diagnostic techniques may include but not limited to:	
• Drive test • Visual inspection	• Audio test Diagnostic equipment
Faults may include but not limited to:	
• Poor directional stability • Shimming of the front wheel while steering at high speed • Excessive Bouncing • Excessive Rolling • Excessive Pitching • Abnormal sound	• Pulling to one side while driving or braking • Irregular tire wear
Suspension components may include but not limited to:	
• Leaf springs • Anti-roll bar • Torsion bar • Lateral rod	• Shock absorbers • Suspension arms and bushes
Services may include but not limited to:	
• Cleaning • Greasing	• Replace
Critical Aspects:	

- Demonstration of occupational health and safety practices at workplace
- Diagnosis of suspension system defects.

UNDERPINNING KNOWLEDGE	UNDERPINNING SKILLS
• Ethics and Integrity • OHS • Estimation and costing • Working principles of suspension system • Types of suspension system • Functions of Suspension system • Suspension system Faults • Waste Management	• Team work • Communication • Negotiation • Creativity • Interpersonal relationship • Time management

UNIT TITLE : Service Brake System

DESCRIPTOR : This unit covers the competencies required to service and adjust brake system following safety procedures at all times.

CODE : 7231- U2- L2

ELEMENTS OF COMPETENCE	PERFORMANCE CRITERIA
1. Service brake system	1.1 Use ***PPEs*** as per the job requirement following standard procedures. 1.2 Diagnose the ***fault*** as per the standard procedures. 1.3 Remove ***brake system*** components as per the repair manual following standard procedures. 1.4 Service brake parts as per the job requirement following standard procedures. 1.5 Replace brake components as per the job requirement following the standard procedures. 1.6 Assemble the ***brake system components*** as per the repair manual following standard procedures.
2. Adjust brake system	2.1 Check the brake system components for proper functioning as per the standard procedures. 2.2 Adjust the brake including the parking brake as per the repair manual following standard procedures. 2.3 Adjust the brake pedals free play as per the repair manual following standard procedures. 2.4 Participate in road test following the standard procedures.

RANGE STATEMENT	
Tools and equipment may include but not limited to:	
• Support stand • Grease dispenser • Socket wrench set • Hand tool set • Wheel wedge	• Torque wrench • Hydraulic jack • Shock absorber testing equipment • Bench Vice
Personal protective equipment (PPE) may include but not limited to:	
• Hand gloves • Workshop dress	• Safety shoes • Safety goggles
Faults may include but not limited to:	
• Air leakage • Brake jam	• Pulling to one side
Brake System may include but not limited to:	
• Different types of brakes – service brake, parking brake. • Different brake systems – drum brakes, and antilock braking system (ABS)	• Different brake operation – pneumatic, mechanical
Brake System components may include but not limited to:	
• Brake drum • Brake shoe • Spring brake • Brake chamber • Air reservoir • Brake hoses	• Air compressor • Air dryer • Dual brake valve
Materials may include but not limited to:	

• Grease • Emery paper • Kerosene • Brake shoes • Spring brake • Brake hose • Brake chamber	• Markin cloth • Dual brake valve

Critical Aspects:

- Demonstration of occupational health and safety practices at workplace
- Follow occupational health and safety procedures
- Adjustment of brake
- Identifying the defects of brake system

UNDERPINNING KNOWLEDGE	UNDERPINNING SKILLS
• Ethics and Integrity • OHS • Estimation and costing • Working principles of Air/Pneumatic brake system • Types of brake system • Brake components and its functions • Causes and remedies of brake system problems • ABS system	• Team work • Communication • Negotiation • Creativity • Interpersonal relationship • Time management

UNIT TITLE : Service Steering System

DESCRIPTOR : This unit covers the competencies required to perform wheel alignment, service steering system and service kingpin following safety procedures at all times.

CODE : 7231- U3- L2

ELEMENTS OF COMPETENCE	PERFORMANCE CRITERIA
1. Perform wheel alignment	1.1 Use ***PPES*** as per the job requirement following the standard procedure. 1.2 1.2 Check tire conditions and inflation as per the standard procedures. 1.3 Replace ***steering linkages*** as per the standard procedures 1.4 Adjust wheel alignment as per the manufacturer's specification following the standard procedure.
2. Service steering system	2.1 Check ***steering system*** following the standard procedure. 2.2 Replace ***defective steering components*** as per the standard procedures. 2.3 Assemble and install the steering components following the standard procedures.
3. Service kingpin	3.1 Dismantle kingpin as per the repair manual following the standard procedure 3.2 Check kingpin conditions and recommend for corrective action as per the job requirements following the standard procedure.

	3.3 Replace ***kingpin parts*** as per repair manual following the standard procedure.

RANGE STATEMENT	
Steering linkages may include but not limited to:	
● Tie -rod end ● Tie -rod	● Drag link ● Drop arm
Personal protective equipment (PPE) may include but not limited to:	
● Hand gloves ● Workshop dress	● Safety shoes ● Safety goggles
Defective steering components may include but not limited to:	
● Non-functional integral power steering ● Non-functional power steering pump ● Leaking hoses ● Broken power steering belt	● Worn out cross bearing ● Steering cross bearing ● Steering shaft
Steering System may include but not limited to:	
● Re-circulating ball bearing type ● Worm and gear	● Power assisted steering (hydraulic) ● Steering linkages
Wear and tear may include but not limited to:	
● Cracks ● Loose	● Worn out ● Broken parts
Kingpin Parts may include but not limited to:	
● Bearing ● Shim	● Kingpin Kingpin bush

Services may include but not limited to:	
● Replacement ● Adjustment	● Cleaning ● Greasing
Critical Aspects:	
● Demonstration of occupational health and safety practices at workplace ● Identify the defects of steering system ● Rectify the faults of steering system	

UNDERPINNING KNOWLEDGE	**UNDERPINNING SKILLS**
● Ethics and Integrity ● OHS ● Estimation and costing ● Working principles of steering system ● Working principles of integral power steering gearbox ● Types of steering system ● Causes of defects in steering system ● Components and its functions ● Wheel alignment ● Steering geometry ● Types of steering gear box ● Tire wear pattern	● Team work ● Communication ● Negotiation ● Creativity ● Interpersonal relationship ● Time management

UNIT TITLE : Service Power Train

DESCRIPTOR : This unit covers the competencies required to service power train following safety procedures at all times.

CODE : 7231- U4- L2

ELEMENTS OF COMPETENCE	PERFORMANCE CRITERIA
1. Service clutch system	1.1 Use PPEs as per the job requirement following the standard procedure. 1.2 Diagnose the ***faults*** (power transfer loss) as per the job requirement following standard procedures 1.3 Dismount clutch assembly as per service manual following standard procedures. 1.4 Check and replace ***faulty components*** (worn out clutch plate, worn out pressure plate, worn out release bearing, worn out fork, worn out master cylinder, leaking hoses, leaking slave cylinder) as per the standard procedures. 1.5 Overhaul hydraulic and pneumatic clutch mechanism following the standard procedures. 1.6 Mount clutch assembly as per service manual following standard procedures. 1.7 Adjust clutch pedal free play in accordance with the service manual following standard procedures.
2. Service transmission components	2.1 Diagnose ***transmission faults*** (hard shifting, noisy operation, slipping gear) following standard procedures 2.2 Drain ***transmission*** oil following standard procedures. 2.3 Dismount ***transmission*** oil following standard procedures. 2.4 Service ***transmission components (gears,***

	synchronizer unit, counter shaft, main shaft, input shaft, bearings) following standard procedures. 2.5 Mount transmission following standard procedures 2.6 Participate in road test following standard procedures
3. Service propeller shaft components	3.1 Diagnose ***propeller shaft faults (worn out cross bearing, bent/twist propeller shaft)*** following the standard procedures. 3.2 Dismount propeller shaft as per service manual following standard procedures. 3.3 Replace ***faulty parts*** (cross bearing, slip joint, center bearing) following the standard procedures 3.4 Mount propeller shaft as per service manual following standard procedures. 3.5 Participate in test drive following the standard procedures.
4. Service final drive and differential components	4.1 Diagnose final drive and ***differential faults*** following standard procedures. 4.2 Dismount the differential as per service manual following standard procedures. 4.3 Disassemble differential parts as per the service manual following standard procedures. 4.4 Check ***defective parts*** (defective gears, defective bearings, oil seal, drive pinion) and recommend for necessary action following the standard procedures. 4.5 Assemble the parts as per service manual and specifications using special service tools (SST) following standard procedures. 4.6 Replace differential oil in accordance with service manual following standard procedures. 4.7 Adjust backlash following the standard

	procedures. 4.8 Mount the differential as per service manual following standard procedures. 4.9 Participate in test drive following standard procedures
5. Service wheel bearings and components	5.1 Diagnose ***wheel bearing fault*** (worn out bearing, leaking oil seal, shimmy steering, wobbling wheel) following the standard procedures. 5.2 Disassemble wheel hub and bearing as per the service manual following standard procedures. 5.3 Check and replace the faulty parts as per the job requirement following standard procedures. 5.4 Assemble and adjust the wheel bearings as per the service manual and specifications following standard procedures. 5.5 Participate in test drive as per the job requirement following standard procedures.
6. Service drive shaft components	6.1 Diagnose ***drive shaft fault*** (broken drive shaft, worn out spline)following the standard procedures. 6.2 Replace the defective parts as per the job requirement following standard procedures. 6.3 Refit the drive shaft following the standard procedures 6.4 Participate in test drive as per the job requirement following standard procedures

RANGE STATEMENT	
Clutch system components may include but not limited to:	
• Pressure plate • Clutch plate • Clutch linkage • Release spring • Release fork	• Pilot bearing • Clutch release bearing • Clutch master cylinder • Slave cylinder • Cylinder kit
Personal protective equipment (PPE) may include but not limited to:	
• Hand gloves • Workshop dress	• Safety shoes • Safety goggles
Power train may include but not limited to:	
• Transmission • Drive shaft • Propeller shaft • Centre bearing • Gear linkages	• Cross bearing • Differential • Ring gear • Drive pinion • Oil seal • Bearing • Synchronizer unit
Tools and equipment may include but not limited to:	
• Lift/support stand • Transmission jack • Snap ring expander (in/out) • Bearing puller • Drift punch • Mechanic hand tools set • Pre-load gauge	• Bench vice • Special service tools (SST) • Dial gauge • Grease gun • Oil gun • Axle puller

• Vernier caliper	• Hydraulic press • Torque wrench
Critical Aspects:	
• Demonstration of occupational health and safety practices at workplace • Troubleshooting and servicing of power train components. • Bleeding / adjusting clutch system • Adjustment of backlash • Adjustment of linkages	

UNDERPINNING KNOWLEDGE	UNDERPINNING SKILLS
• Ethics and Integrity • OHS • Estimation and costing • Working principle of clutch system • Types of clutch system • Types of Transmission • Clutch components and its functions • Causes and symptoms of clutch system failures • Types of clutch plate materials • Problems and causes of drive train • Types of lubricants or fluids	• Team work • Communication • Negotiation • Creativity • Interpersonal relationship • Time management

• Working principles of drive train • Sealant and adhesives • Gear ratio • Types of gears and its functions	

UNIT TITLE : Perform Basic Auto Electrical Works

DESCRIPTOR : This unit covers the competencies required to service basic electrical components, batteries and jump start vehicles following safety procedures at all times.

CODE : 7231- U5- L2

ELEMENTS OF COMPETENCE	PERFORMANCE CRITERIA
1. Check and replace basic electrical components	1.1 Diagnose the ***electrical faults*** (defective lighting, defective starting, defective charging) following the standard procedure. 1.2 Service basic ***auto electrical components*** for defects following standard procedures. 1.3 Test the electrical system following standard procedures.
2. Service batteries and jump start vehicles	2.1 Select and use required tools and equipment as per the job requirement following the standard procedures. 2.2 Service battery as per the job requirement following standard procedures. 2.3 Charge battery as per the job requirement following standard procedures. 2.4 Jump start vehicle as per the job

	requirement following standard procedures.

RANGE STATEMENT	
Basic electrical components may include but not limited to:	
● Fusible linkages ● Terminals and connectors ● Fuse ● Bulbs ● Switches	● Wires ● Wire jointing ● Battery ● Horn
Personal protective equipment (PPE) may include but not limited to:	
● Hand gloves ● Workshop dress	● Safety shoes ● Safety goggles
Tools and equipment may include but not limited to:	
● Multi meter ● Test lamp	● Jumper Cables ● Hydro meter ● Cell tester
Critical Aspects:	
● Demonstration of occupational health and safety practices at workplace ● Identify basic electrical faults ● Replace basic electrical components ● Service batteries	

UNDERPINNING KNOWLEDGE	UNDERPINNING SKILLS
• Ethics and Integrity • OHS • Estimation and costing • Safe handling of battery • Function of battery • Types of batteries • Function of fuse, terminals and connectors • Servicing and jump-starting procedures • Basic electricity • Basic auto electrical circuits	• Team work • Communication • Negotiation • Creativity • Interpersonal relationship • Time management

UNIT TITLE : Service Engine Auxiliary System

DESCRIPTOR : This unit covers the competencies required to troubleshoot and service engine auxiliary system following safety procedures at all times.

CODE : 7231- U6- L2

ELEMENTS OF COMPETENCE	PERFORMANCE CRITERIA
1. Service cooling system	1.1 Diagnose ***faulty components*** of cooling system as per the job requirement following the standard procedures. 1.2 Service ***cooling system components*** as per the service manual following standard procedures. 1.3 Adjust the fan belt tension to the specified tension as per the service manual following standard procedures..
2. Service Lubricating system	2.1 Check the ***condition of engine oil (Level, Pressure, and viscosity)*** as per the owner's manual following standard procedures. 2.2 Perform oil flushing as per manufacturer's specification following standard procedures. 2.3 Change engine oil and filter following standard procedures. 2.4 Run the engine and check for leakages following standard procedures.
3. Service Diesel fuel System	3.1 Diagnose ***diesel fuel system faults*** (*starting problem, air in fuel system, miss firing, fuel leakage*) following the standard procedure. 3.2 Check and replace fuel filter as per the job requirement following standard procedures. 3.3 Check and replace fuel pipes as per the job requirement following standard procedures. 3.4 Check and replace fuel feed pump

	according to service manual following standard procedures. 3.5 Service fuel tank as per job requirement following the standard procedures. 3.6 Check and service fuel injector and components as per the service manual following standard procedures.

RANGE STATEMENT	
Cooling system may include but not limited to:	
● Coolant ● Radiator/inter cooler ● Thermostat ● Fan ● Reservoir tank	● Hoses ● Fan belt ● Temperature switch ● Radiator cap ● Water pump
Personal protective equipment (PPE) may include but not limited to:	
● Hand gloves ● Workshop dress	● Safety shoes ● Safety goggles
Faulty components may include but not limited to:	
● Worn out water pump ● Defective radiator ● Damage hose ● Defective thermostat valve	● Defective pressure cap ● Defective fan ● Worn out fan belt
Fuel system components may include but not limited:	
● Fuel Filter ● Fuel Injection Pumps ● Fuel cut off switch	● Fuel Injectors ● High Pressure pipe ● Low pressure pipe

• Fuel return pipe	
Critical Aspects:	
• Demonstration of occupational health and safety practices at workplace • Troubleshooting and servicing of engine auxiliary system	

UNDERPINNING KNOWLEDGE	UNDERPINNING SKILLS
• Ethics and Integrity • OHS • Estimation and costing • Working principle of cooling system • Working principle of lubricating system • Type of fuels and its specifications (cetane number & other properties) • Types of lubricants and its specification • Working principle of diesel fuel system • Properties of engine oil and coolant • Sealant and adhesives	• Team work • Communication • Negotiation • Creativity • Interpersonal relationship • Time management

UNIT TITLE : Perform Engine Tune-Up

DESCRIPTOR : This unit covers the competencies required to perform engine tune-up following safety procedures at all times.

CODE : 7231- U7- L3

ELEMENTS OF COMPETENCE	PERFORMANCE CRITERIA
1. Service air induction and exhaust system	1.1 Diagnose the ***air induction and exhaust system faults*** (defective turbo charger, choked air cleaner, choked/damaged exhaust system) following standard procedure. 1.2 Service air filter as per the job requirement following standard procedures 1.3 Service turbo charger as per the job requirement following standard procedures 1.4 Service ***exhaust system components*** following standard procedures
2. Carry out diesel engine (CI) tune-up	2.1 Replace drive belt as per job requirement following standard procedures. 2.2 Adjust drive belt to a required tension following standard procedures. 2.3 Conduct compression test and recommend for necessary action as per the standard procedures. 2.4 Set injection timing in accordance with service manuals following standard procedure. 2.5 Adjust valve clearance following the standard procedures.

RANGE STATEMENT	
Air Induction System may include but not limited:	
● Air Filter ● Intake manifold	● Turbo charger
Personal protective equipment (PPE) may include but not limited to:	
● Hand gloves ● Workshop dress	● Safety shoes ● Safety goggles
Fuel system components may include but not limited to:	
● Fuel injection pumps (FIP) ● Electrical pump ● Mechanical pump ● Fuel injector	● Fuel filter ● Feed pump ● Electronic injector (CRDI)
Exhaust system components may include but not limited to:	
● Exhaust manifold ● Exhaust pipe	● Silencer box ● Exhaust manifold gasket and packing
Critical Aspects:	
● Demonstration of occupational health and safety practices at workplace ● Compression injection (CI) engine tune up	

UNDERPINNING KNOWLEDGE	UNDERPINNING SKILLS
• Ethics and Integrity • OHS • Estimation and costing • Engine tune up • Working principle of engine operation • Air induction system • Exhaust system • Compression ratio • Turbo charger • Emission requirement • Harmful effects of emission	• Team work • Communication • Negotiation • Creativity • Interpersonal relationship • Time management

UNIT TITLE : Overhaul Engine

DESCRIPTOR : This unit covers the competencies required to overhaul engine following safety procedures at all times.

CODE : 7231- U8- L3

ELEMENTS OF COMPETENCE	PERFORMANCE CRITERIA
1. Diagnose problems and dismount engine	1.1 Troubleshoot the engine as per job requirementfollowing standard procedures 1.2 Service air filter as per the job requirement following standard procedures 1.3 Tag ***removable connections*** using specific codes following standard procedures 1.4 Dismount engine and its components as per service manual following standard procedures.
2. Service Engine	2.1 Disassemble engine as per the service manual following standard procedures. 2.2 Check ***engine components*** as per the job requirement following standard procedures 2.3 Repair or replace engine components as per the job requirement following standard procedures. 2.4 Refer the engine components to machine shops for machining operations as per the job requirement following standard procedures 2.5 Assemble the engine components as per the service manual following standard procedures. 2.6 Tests run the engine following standard procedures. 2.7 Mount engine and its components as per service manual following standard procedures.

RANGE STATEMENT	
Removable connections may include but not limited to:	
● Wires and cables ● Hoses	● Tubing and controls
Personal protective equipment (PPE) may include but not limited to:	
● Hand gloves ● Workshop dress	● Safety shoes ● Safety goggles
Engine components may include but not limited to:	
● Engine block ● Piston ● Head Gasket ● Connecting rods ● Main bearings ● Connecting bearing ● Crank shaft ● Oil pump ● Oil pressure ● Relieve valve ● Exhaust or intake valve	● Cylinder head ● Valve guide ● Valve seats ● Valve lifter ● Valve shims ● Rocker arms ● Rocker shims ● Valve Springs ● Oil nozzle ● Cylinder liner
Critical Aspects:	
● Demonstration of occupational health and safety practices at workplace ● Diagnose engine faults	

• Service engine

UNDERPINNING KNOWLEDGE	UNDERPINNING SKILLS
• Ethics and Integrity • OHS • Estimation and costing • Working principle of engine and its components • Types of engines • Measuring instruments and equipment • Procedures of engine overhauling • Functions of engine components • Valve timing diagram • Hybrid engine • Waste management	• Team work • Communication • Negotiation • Creativity • Interpersonal relationship • Time management

ANNEXURE

A. National Competency Standards (NCS)

The National Competency Standards specify the skill, knowledge and attitudes applied to a particular occupation. Standards also specify the standards or criteria of performance of a competent worker and the various contexts in which work may take place. Standards provide explicit advice to assessors regarding the skill and knowledge to be demonstrated by candidates seeking formal recognition either following training or through work experience.

Purpose of National Competency Standards

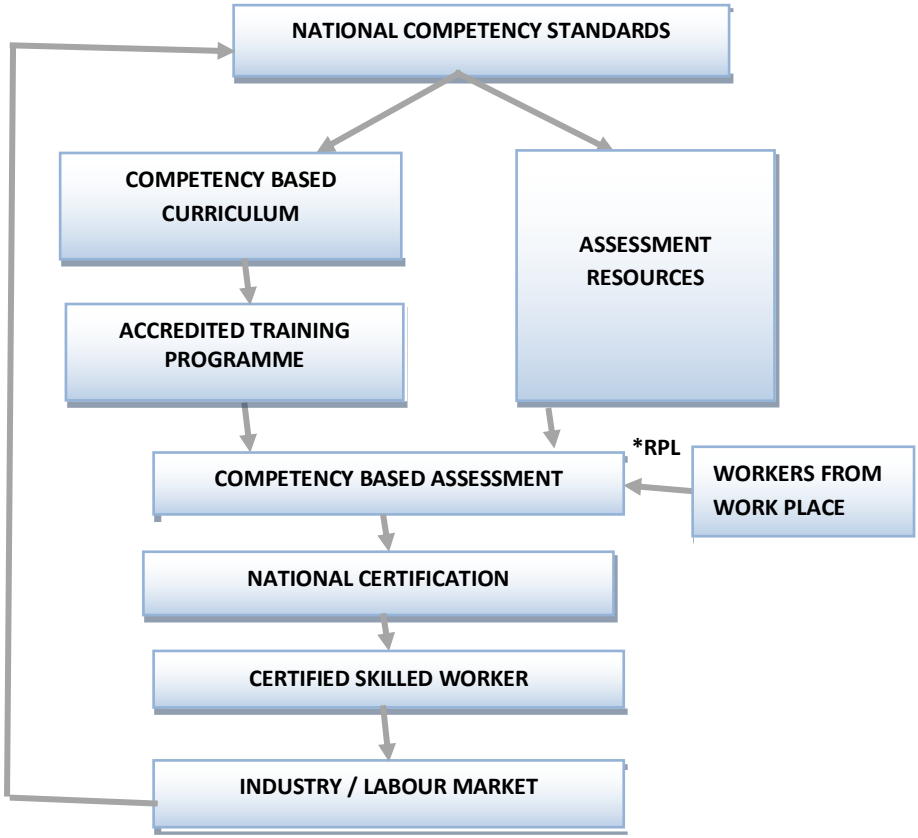
National Competency Standards serve a number of purposes including:

- Providing advice to curriculum developers about the competencies to be included in curriculum.
- Providing specifications to assessment resource developers about the competencies within an occupation to be demonstrated by candidates.
- Providing advice to industry/employers about job functions, which in turn can be used for the development of job descriptions, performance appraisal systems and work flow analysis.

B. Bhutan Vocational Qualifications Framework (BVQF)

Bhutan Vocational Qualifications Framework is an agreed system of Assessing, Certifying and Monitoring nationally recognized qualifications for all learning in the TVET sector against national competency standards, in training institutions, in the workplace, in schools or anywhere where learning takes place.

Components of the Bhutan Vocational Qualifications Framework (BVQF)



*** RPL = Recognition of Prior Learning**

BVQF Levels

The Bhutan Vocational Qualifications Framework has three levels classified based on the competency of the skilled workers. The three levels are:

- National Certificate Level 3 (NC III)
- National Certificate Level 2 (NC II)
- National Certificate Level 1 (NC I)

BVQF Level Descriptors

The qualification levels are decided based on level descriptors. The detail of the qualification level descriptor is as follows:

National Certificate Level 1

Carry out processes that:	**Learning demand:**	**Responsibilities which are applied:**
● Are narrow in range. ● Are established and familiar. ● Offer a clear choice of routine responses. ● Involve some prioritizing of tasks from known solutions.	● Basic operational knowledge and skill. ● Utilization of basic available information. ● Known solutions to familiar problems. ● Little generation of new ideas.	● In directed activity. ● Under general supervision and quality control. ● With some responsibility for quantity and quality. ● With no responsibility for guiding others.

National Certificate Level 2

Carry out processes that:	Learning demand:	Responsibilities which are applied:
● Require a range of well-developed skills. ● Offer a significant choice of procedures requiring prioritization. ● Are employed within a range of familiar context.	● Some relevant theoretical knowledge. ● Interpretation of available information. ● Discretion and judgments. ● A range of known responses to familiar problems	● In directed activity with some autonomy. ● Under general supervision and quality checking. ● With significant responsibility for the quantity and quality of output. ● With some possible responsibility for the output of others.

National Certificate Level 3

Carry out processes that:	Learning demand:	Responsibilities which are applied:
● Requires a wide range of technical or scholastic skills. ● Offer a considerable choice of procedures requiring prioritization to achieve optimum outcomes. ● Are employed in a variety of familiar and unfamiliar contexts.	● A broad knowledge base which incorporates some theoretical concepts. ● Analytical interpretation of information. ● Informed judgment. ● A range of sometimes innovative responses to concrete but often unfamiliar problems.	● In self–directed activity. ● Under broad guidance and evaluation. ● With complete responsibility for quantity and quality of output. ● With possible responsibility for the output of others.

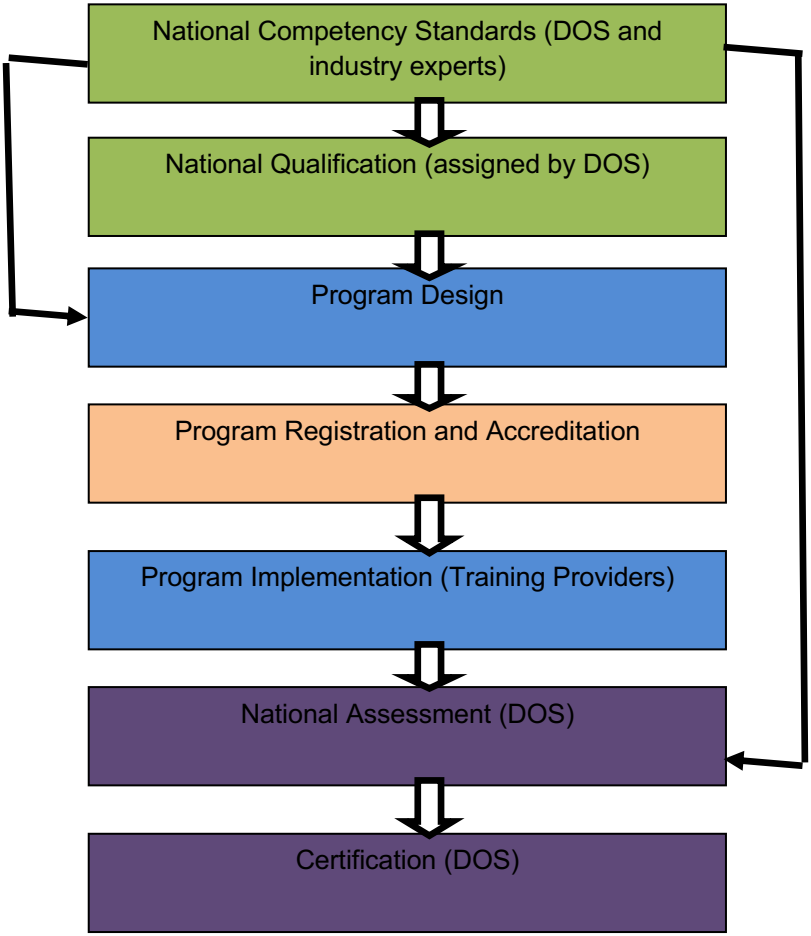
CODING USED FOR NATIONAL COMPETENCY STANDARDS

The coding and classification system developed in Bhutan is logical, easy to use, and also aligned with international best practises. The Bhutanese coding and classification system is based on the International Standard Classification of Occupations, 2008 (ISCO-08) developed by the International Labour Organisation (ILO).

The coding of the national competency standards forms the basis of the identification code for the Vocational Education and Training Management Information System (VET – MIS) both in terms of economic sector identification and that of the individual standard.
Coding the individual units of competency standard is to identify the level in qualification packages to which it belongs.

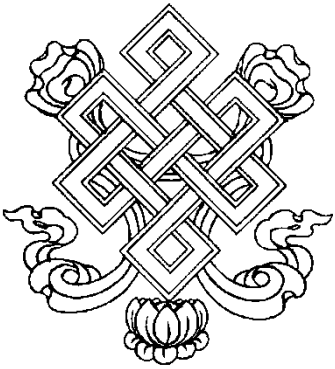
While packaging, in order to follow a logical order, only competency standards related to each other and following a logical sequence in terms of training delivery, from the simple to the complex, are clustered into a qualification packages.

Implementation and Operational Procedures for National Competency Standards



Key:

MoLHR – Ministry of Labour and Human Resources
DOS – Department of Occupational Standards



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