



**NATIONAL COMPETENCY STANDARDS
FOR
LIGHTING TECHNICIAN
(NC2)**

**Department of Occupational Standards
Ministry of Labour and Human Resources
Thimphu, Bhutan**

First Publication 2022

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FOREWORD

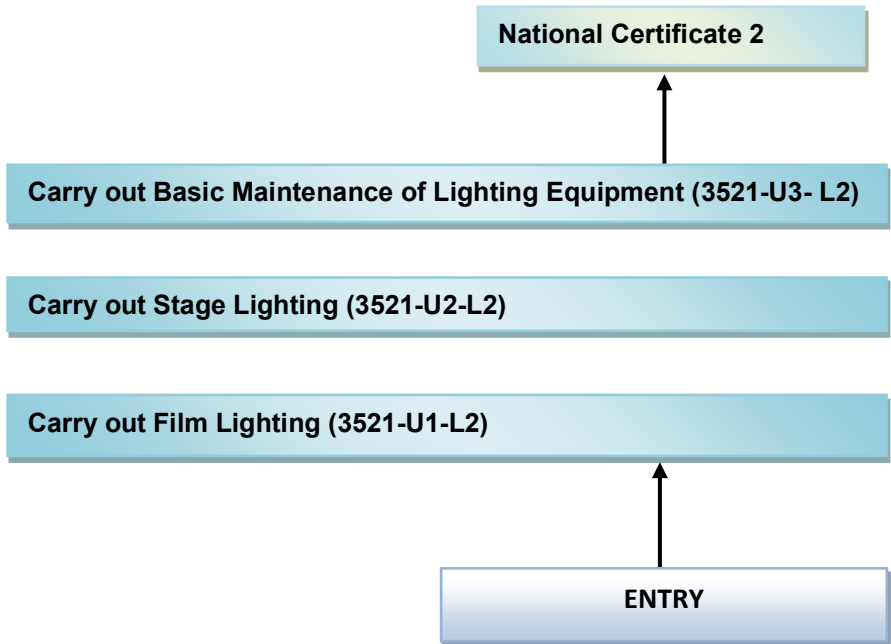
The Department of Occupational Standards is pleased to release the Diploma level National Competency Standards (NCS) for Lighting Technician. This NCS is developed in close consultation with industry or field experts to capture the competencies required at workplaces. The National Competency Standards contains the knowledge, skills and attitude required by competent workers to perform best at workplace.

The development of National Competency Standards was initiated with the implementation of Bhutan Vocational Qualifications Framework (BVQF) as part of Technical Vocational Education and Training (TVET) reform process in our country. The Qualifications set through the NCS will be the accredited and recognized nationally. The Training providers are required to develop curriculums based on NCS to get their courses accredited and to avail National Certification for their trainees.

This department would like to acknowledge the active participation of industry or field experts from private, corporate and public sectors. The industry participation is very crucial to shift our TVET system from supply based to demand driven. The trainings delivered based on the NCS is expected to make our workforce competent and productive thereby enhancing the productivity of our industries. The competent workforce is the key to socio economic development of our country.

Director
Department of Occupational Standards

PACKAGING OF QUALIFICATIONS



Acknowledgement

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OVERVIEW OF NATIONAL COMPETENCY STANDARDS

SI .	UNIT TITLE	ELEMENTS OF COMPETENCE
1.	Carry out Film Lighting	1.1. Set up lighting equipment 1.2. Operate lighting equipment 1.3. Dismantle lighting equipment
2.	Carry out Stage Lighting	2.1. Set up lighting equipment 2.2. Operate lighting equipment 2.3. Dismantle equipment
3	Carry out Basic Maintenance of Lighting Equipment	3.1. Perform troubleshooting of lighting equipment 3.2. Perform basic maintenance of lighting equipment

UNIT TITLE	Carry out Film Lighting
DESCRIPTOR	This unit describes the competencies required for setting up equipment, operate and dismantle them
CODE	3521-U1-L2
ELEMENTS OF COMPETENCE	PERFORMANCE CRITERIA
1. Set up Lighting Equipment	<p>1.1 Use PPE as per the job requirement following standard procedure</p> <p>1.2 Obtain the lighting requirement as per the job requirement following standard procedures</p> <p>1.3 Unpack the lighting equipment following standard procedure</p> <p>1.4 Set up the lighting equipment as per the required position following standard procedure</p>
2. Operate Lighting Equipment	<p>2.1 Create artificial lights as per the story demand following standard procedure</p> <p>2.2 Check the light using devices following standard procedure</p> <p>2.3 Adjust lights as per the job requirement following standard procedure</p>
3. Dismantle Lighting Equipment	<p>3.1 Allow equipment to cool down following standard procedure</p> <p>3.2 Disconnect from the main power source following standard procedure</p> <p>3.3 Pack the equipment following standard procedures</p>

RANGE STATEMENT	
Lighting equipment may include but not limited to:	
<ul style="list-style-type: none"> • Stand • LED lights • Filter 	<ul style="list-style-type: none"> • Cable • Light modifiers
PPE may include but not limited to:	
<ul style="list-style-type: none"> • Insulation Gloves • Safety boots • Work dress 	<ul style="list-style-type: none"> • Helmet • Safety belt
Critical Aspects: <ul style="list-style-type: none"> • Use PPE as per the job requirement following standard procedure • Create artificial lights as per the story demand following standard procedures 	

UNDERPINNING KNOWLEDGE	UNDERPINNING SKILLS
<ul style="list-style-type: none"> • Ethics and integrity • Occupational health and safety • Basic First Aid • Source of light (natural and artificial) • Types of lights • Basic electrical knowledge • Apps and devices to control lights • Basic light theory 	<ul style="list-style-type: none"> • Team work • Communication • Time Management • Problem Solving • Innovative thinking • Negotiation • Critical Thinking

UNIT TITLE	Carry out Stage Lighting
DESCRIPTOR	This unit deals with the competencies required to set up lighting equipment, operate and dismantle lighting equipment for stage lighting
CODE	3521-U2-L2
ELEMENTS OF COMPETENCE	PERFORMANCE CRITERIA
1. Set up Lighting Equipment	<p>1.1 Use PPE as per the job requirement following standard procedure</p> <p>1.2 Obtain the stage lighting requirement as per the job requirement following standard procedure</p> <p>1.3 Unpack the lighting equipment following standard procedure</p> <p>1.4 Perform rigging as per the job requirement following standard procedure</p> <p>1.5 Set up the lighting equipment as per the required position following standard procedure</p>
2. Operate Lighting Equipment	<p>2.1 Set program for lighting in the lighting consoles as per the job requirement following standard procedure</p> <p>2.2 Check and adjust the lighting as per the job requirement following standard procedure</p> <p>2.3 Perform final lighting test with full program following standard procedure</p>

3. Dismantle Equipment	<p>3.1 Allow the equipment to cool down following standard procedure</p> <p>3.2 Disconnect from the main power source following standard procedure</p> <p>3.3 Perform de-rigging following standard procedure</p> <p>3.4 Pack the equipment following standard procedure</p>
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RANGE STATEMENT	
PPE may include but not limited to:	
<ul style="list-style-type: none"> Insulation Gloves Safety boots Work dress 	<ul style="list-style-type: none"> Helmet Safety belt
Lighting equipment may include but not limited to:	
<ul style="list-style-type: none"> Stand LED lights Filter 	<ul style="list-style-type: none"> Cable Light modifiers
Critical Aspects: <ul style="list-style-type: none"> Use PPE as per the job requirement following standard procedure Set program for lighting in the lighting consoles as per the job requirement following standard procedure 	

UNDERPINNING KNOWLEDGE	UNDERPINNING SKILLS
<ul style="list-style-type: none"> Ethics and integrity Occupational Health and Safety Basic first Aid Basic electrical knowledge Console Programming Related Rules and Regulations 	<ul style="list-style-type: none"> Team work Communication skills Time Management Problem Solving Innovative thinking Negotiation

<ul style="list-style-type: none"> • Apps and devices to control lights • Functions of lighting • Theory of lights 	<ul style="list-style-type: none"> • Critical Thinking
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UNIT TITLE	Carry out Basic Maintenance of Lighting Equipment
DESCRIPTOR	This unit deals with competencies required for performing troubleshooting and basic maintenance of lighting equipment
CODE	3521-U3-L2
ELEMENTS OF COMPETENCE	PERFORMANCE CRITERIA
1. Perform Troubleshooting of Lighting Equipment	1.1 Use PPE as per the job requirement following standard procedure 1.2 Determine electric faults following standard procedure
2. Perform Basic Maintenance of Lighting Equipment	2.1 Use tools and equipment as per the job requirement following standard procedures 2.2 Perform period maintenance of lighting equipment following standard procedures 2.3 Repair/replace faulty equipment following standard procedures 2.4 Test the lighting equipment following standard procedures

RANGE STATEMENT
Critical Aspects: <ul style="list-style-type: none"> • Use PPE as per the job requirement following standard procedures • Determine electric faults following standard procedures
Electric faults may include but not limited to:

<ul style="list-style-type: none"> ● Burnt bulb ● Blown fuses ● Burnt switches 	<ul style="list-style-type: none"> ● Cable breakage, ● Worn-out console carbon
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UNDERPINNING KNOWLEDGE	UNDERPINNING SKILLS
<ul style="list-style-type: none"> ● Ethics and Integrity ● Occupational Health and Safety ● Basic First Aid ● Basic Electrical Knowledge ● Related rules and regulations 	<ul style="list-style-type: none"> ● Team work ● Communication skills ● Time Management ● Problem Solving ● Innovative thinking ● Negotiation ● Critical Thinking

ANNEXURE

A. National Competency Standards (NCS)

Competency Standards specify the skill, knowledge and attitude applied to a particular occupation. Standards also specify the requirements 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

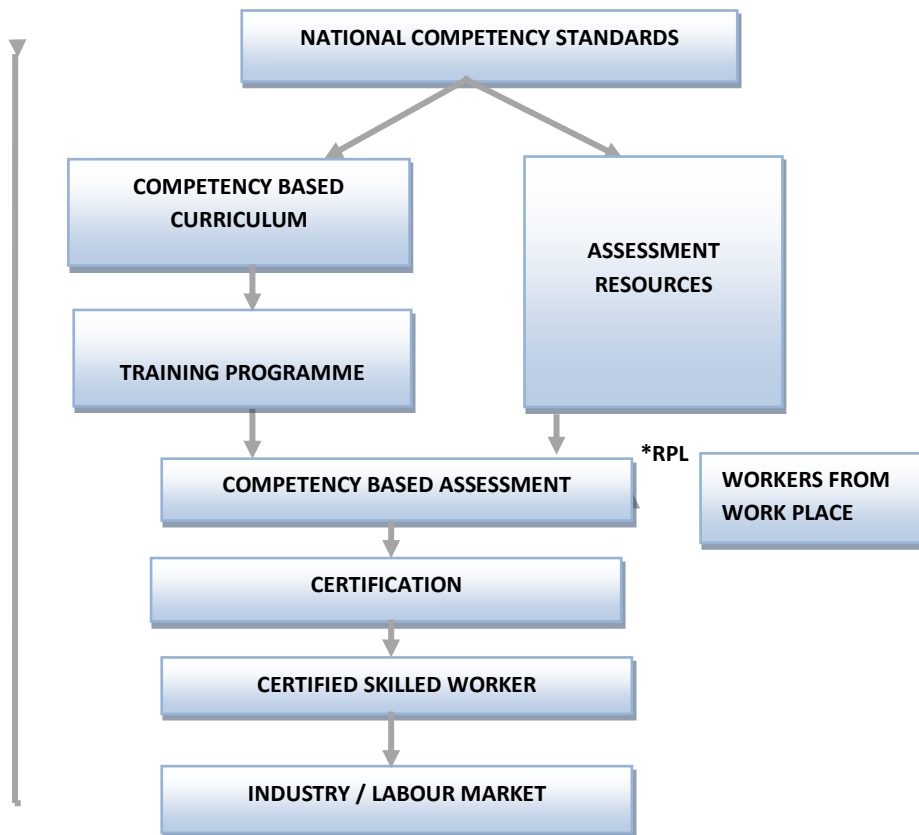
National Competency Standards serve a number of purposes including:

- Providing advice to curriculum developers about the skill and knowledge to be included in curriculum.
- Providing specifications to assessment resource developers about the skill, knowledge and attitudes 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 Qualification 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 standards, in training institutions, in the workplace, in schools or anywhere where learning takes place.

Components of the Bhutan Vocational Qualification Framework (BVQF)



* RPL = Recognition of Prior Learning

BVQF Levels

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

- National Diploma 2 (ND2)
- National Diploma1 (ND1)
- 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:
<ul style="list-style-type: none"> • Are narrow in range. • Are established and familiar. • Offer a clear choice of routine responses. • Involve some prioritizing of tasks from known solutions. 	<ul style="list-style-type: none"> • Basic operational knowledge and skill. • Utilization of basic available information. • Known solutions to familiar problems. • Little generation of new ideas. 	<ul style="list-style-type: none"> • 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:
<ul style="list-style-type: none"> • Require a range of well developed skills. • Offer a significant choice of procedures requiring prioritization. • Are employed within a range of familiar context. 	<ul style="list-style-type: none"> • Some relevant theoretical knowledge. • Interpretation of available information. • Discretion and judgments. • A range of known responses to familiar problems 	<ul style="list-style-type: none"> • In directed activity with some autonomy. • Under general supervision and quality checking. • With significant responsibility for the quantity and quality of output.

		<ul style="list-style-type: none"> ● With some possible responsibility for the output of others.
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National Certificate Level 3

Carry out processes that:	Learning demand:	Responsibilities which are applied:
<ul style="list-style-type: none"> ● 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. 	<ul style="list-style-type: none"> ● 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. 	<ul style="list-style-type: none"> ● 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.

National Diploma 1 (ND1)

Carry out processes that:	Learning demand:	Responsibilities which are applied:
<ul style="list-style-type: none"> ● Require wide range of specialized technical or scholastic skills. ● Involve a wide choice of standard procedures ● Are employed in a variety of routine & non-routine contexts 	<ul style="list-style-type: none"> ● A broad knowledge based with substantial depth in some areas ● Analytical interpretation of wide range of data ● Determination of appropriate methods & procedures in response to a range 	<ul style="list-style-type: none"> ● Self directed and sometimes directed activity ● Under broad general guidelines for functions ● With full responsibility for the nature, quantity & quality of outcomes ● With possible responsibility for the

	of concrete problems with same theoretical elements	achievement of team output
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National Diploma 2 (ND2)

Carry out processes that:	Learning demand:	Responsibilities which are applied:
<ul style="list-style-type: none"> Require a wide range of technical or scholastic skills. Offer a wide choice of standard and non- standard procedures Are employed in a variety of routine and non- routine contexts 	<ul style="list-style-type: none"> Specialist knowledge with depth in more than one area Analysis reformatting and evaluation of a wide range of information Formulation of appropriate responses to resolve both concrete and abstract problems 	<ul style="list-style-type: none"> In self-directed activity. Under broad guidance and evaluation. With complete responsibility for quantity and quality of output. With possible responsibility for the quality and quantity of 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.

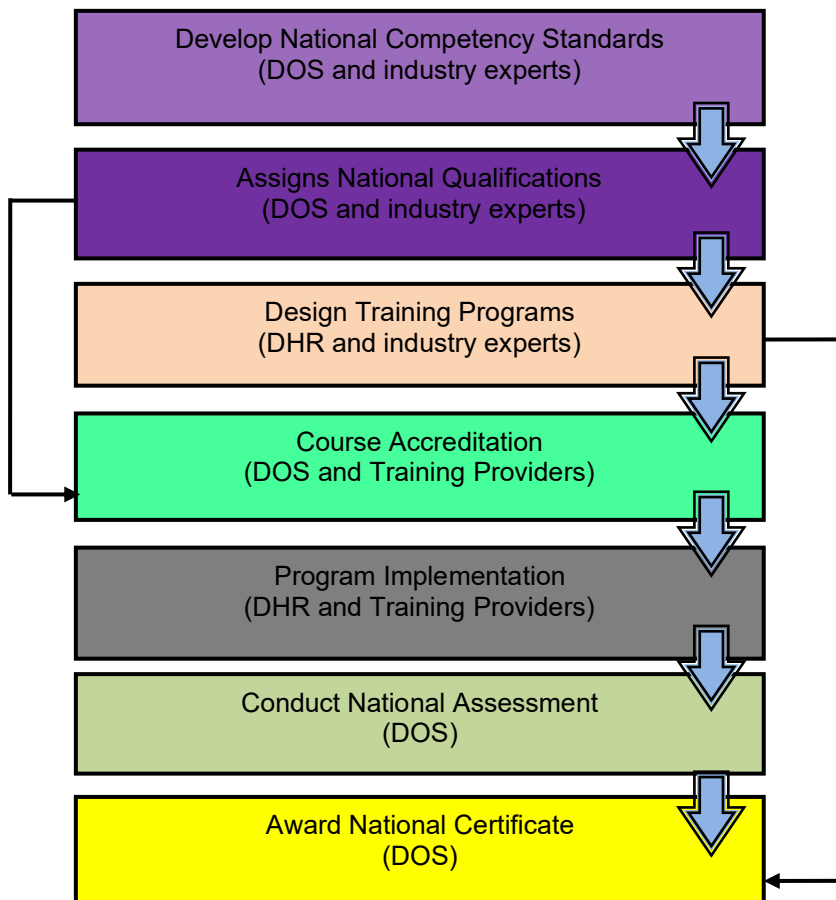
Coding the individual unit of National Competency Standard

Coding the individual units of Competency Standard is to identify the level where that particular unit belongs. While packaging, in order to follow a logical order,

only national 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 package.

The ILO assigns the code 3123 to the occupation, Construction Supervisor and related trades. Therefore, in Bhutan, the occupation Construction supervisor has been assigned the code 3123 in the national coding system. The units are assigned the code 'U' while the levels are assigned the code 'ND'. Therefore, the code for the National Diploma1 will be 3123-U1-ND1

Implementation and operational procedures for National Competency Standards (NCS)

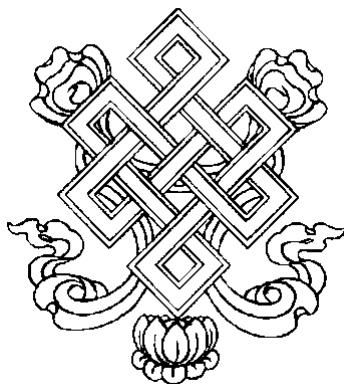


Key:

MoLHR – Ministry of Labour and Human Resources

DHR – Department of Human Resources

DOS – Department of Occupational Standards



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