



*This document, **Brunei Darussalam National Occupational Skills Standards Rigging Level 2**, has been formally endorsed as of the following date by the members of the council.*

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### **1. INTRODUCTION TO BRUNEI DARUSSALAM NATIONAL OCCUPATIONAL SKILLS STANDARDS (BNOSS)**

Brunei Darussalam National Occupational Skills Standards (BNOSS) is a document that underlines and specifies competencies needed by a skilled worker who is gainfully employed for an occupational area and level, and pathway to achieve the competencies.

A group of expert panels consisting of industrial experts and practitioners of a particular occupational sector need to be identified in developing the standard. With the involvement of these experts in the development of the BNOSS document, measurable benchmarks of skills and performance in the related area can be established in relation to the expectation of employers and the current requirements of the industry. These standards shall be aligned to the Brunei Darussalam Qualifications Framework (BDQF).

BNOSS is a set of standards of performance that an individual is required to achieve when carrying out effectively functions of a particular job. It is used as a reference for the industry, career path of a skilled worker, training purposes and benchmarks for best practices.

### **2. BENEFITS OF BNOSS**

#### **To the employers**

- Able to describe the Job description and determine the salary.
- Employers can use the skills standards to establish personnel qualification requirements.
- Assess employee skill levels based on industry standard.
- Match employee skills to the work needed.
- Training gap analysis.
- To advertise job requirement to standards specification.

#### **To the employees**

- Able to understand employers expectation of workers competencies in terms of knowledge, skills and attitude towards the specific job scope.
- Able to determine the skills and abilities needed for advancement or transfer industries and determine the right credential needed to upgrade skills.
- Can use BNOSS as guideline to identify the career development pathway in order to succeed in their occupation.

#### **To the training organisations**

- BNOSS as a guideline for training organisations to develop their own curriculum.
- Able to develop assessment mechanism and specifications to assess trainees competencies.
- Able to build a cohesive relationship though a like-minded expectation of trainee's competencies and work readiness.

- Enhances the ability and confidence to train consistent with the industry's current expectations and needs.
- Develop new and evaluate existing curriculum and programs based on industry needs.

### **3. RIGGING LEVEL 2**

For Rigging Level 2, a rigger will acquire the knowledge and skill to be able to do plan and prepare for rigging and lifting operations safely and in accordance with organisational requirements.

Other soft skill and leadership competent levels are also included as general requirements for all trades.

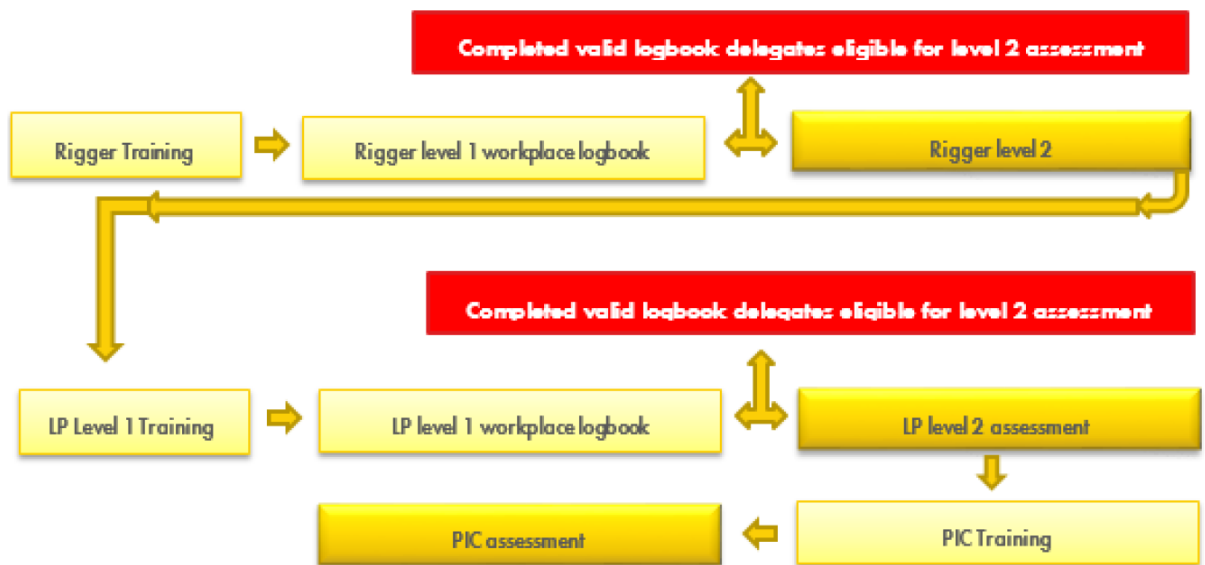
### **4. ENTRY REQUIREMENTS**

The specific of the qualifications are not limited to the list provided:

- Must be 17 years' old and above;
- Completion of secondary education;
- Able to communicate in English both oral and written;
- Physically and medically fit as certified by a Medical Officer;
- Pass the eyesight, hearing and colour-blindness test;
- Declaration of any disabilities.

## 5. COMPETENCY LEVEL, OCCUPATIONAL STRUCTURE AND CAREER PROGRESSION

<b>SECTOR</b>	Energy
<b>SUB-SECTOR</b>	Support services for petroleum and natural gas mining
<b>OCCUPATION</b>	Rigger
<b>LEVEL 5</b>	Person-in-Charge (PIC)
<b>LEVEL 4</b>	Lift Planner
<b>LEVEL 3</b>	Advanced Rigger
<b>LEVEL 2</b>	Rigger
<b>LEVEL 1</b>	Assistant Rigger



1. Rigger Classroom Training minimum 500 Hours
2. Rigger Level I (Or Rigger) minimum 6 months workplace logbook with supervised rigging activity
3. Rigger Level II (Or Advanced Rigger) Refreshment minimum 40 hours and assessment
4. Lift Planner Level I Classroom Training minimum 200 Hours
5. Lift Planner workplace logbook with supervised lift planning activity
6. Lift Planner Level II Refreshment minimum 40 hours and assessment
7. PIC Classroom Training minimum 200 Hours plus PIC assessment

## **6. AWARD OF CERTIFICATE**

This section will guide the process of awarding certificate for every training course conducted by an approved training organisation to ensure the consistency. The guidelines are as follows:

### **6.1 Certificate of Competence**

In order to award Certificate of Competence by an awarding body, Statement of Competence need to be issued by the training organisation after the completion of the course.

The statement of competence should include the following but is not limited to:

- Training organisation's name;
- Course title or competency assessment title;
- Candidate's name;
- Assessment date(s) and training date(s);
- Expiry date;
- Unique Certificate Number;
- Instructor's/Trainer's Name and Signature;
- Assessor's Name and Signature and
- Optional but not required
  - Training Organisation's managing director Name and Signature.

Training organisations are encouraged to inform all concerned including employers and candidates that such Certificates shall not be used as reference of a person's competency or aptitude.

Each certificate awarded to a successful candidate must indicate that the candidate has been assessed and has met the required Learning Outcomes.

## PART 2 COMPETENCE STANDARDS

### 1. COMPETENCY PROFILE CHART (CPC)

Unit of Competency Category	Competence Unit Title	Competence Unit Title
<b>Generic</b>	GEN-02-01	Use of Relevant Technology
	GEN-02-02	Apply Numeracy
	GEN-02-03	Communicate in Workplace
	GEN-02-04	Life Skills for Personal Development
	GEN-02-05	Understand Health, Safety, Environment and Quality Processes in The Oil and Gas Industry
	GEN-02-06	Understand Engineering Science (Understand Engineering Basics)
	GEN-02-07	Understand Oil and Gas Industry Operation (Brunei)
<b>Specialised</b>	RIG-02-01	Apply Health, Safety and Environment including Quality Practices for Rigging in The Oil and Gas Industry
	RIG-02-02	Introduction to Rigging and Lifting
	RIG-02-03	Preparation for Lifting Operations
	RIG-02-04	Conduct Rigging Operations Under Supervision

*\*It is mandatory to include Melayu Islam Beraja and Islamic Religious Knowledge in the qualification*



## 1.1 Generic

### DUTY: 1. Use of Relevant Technology

Skill Areas / Competence	Competence Elements
1.1 Understand the Elements of Computer Systems and Their Peripherals in The Workplace	1.1.1 Identify typical computer hardware systems in the workplace
	1.1.2 Identify computer system peripherals
1.2 Understand the Types of Operating Systems and GUI Applications	1.2.1 Describe the common types of operating system found on workplace computer systems
	1.2.2 Explain what a GUI application is
1.3 Be Able to Use Operating Systems to Perform System and File Tasks	1.3.1 Demonstrate correct procedures for operating a computer system
	1.3.2 Demonstrate appropriate use of input and output devices
	1.3.3 Complete system file and folder management operations
1.4 Be Able to Use an Internet Browser	1.4.1 Identify appropriate internet services
	1.4.2 Identify considerations for safe internet use
	1.4.3 Use an internet browser for required tasks
1.5 Be Able to Use Email to Exchange Information and Communicate	1.5.1 Identify terms used with email messaging
	1.5.2 Use email to send / receive messages and attachments
1.6 Be Able to Use Word Processing Software Applications	1.6.1 Identify software applications
	1.6.2 Identify software application file types
	1.6.3 Use word processing software applications to create and format documents
	1.6.4 Use printers to print documents
1.7 Be Able to Use Presentation Software Applications	1.7.1 Use presentation software applications to create and format presentations
	1.7.2 Use software application graphic interfaces

**DUTY: 2. Apply Numeracy**

<b>Skill Areas / Competence</b>	<b>Competence Elements</b>
2.1 Be Able to Use Numeric Expressions in Standard Form to Solve Work Related Problems	2.1.1 Carry out rounding of numbers and measures to an appropriate degree of accuracy
	2.1.2 Calculate values for sums, differences, products and quotients
	2.1.3 Carry out conversion of values in one form to another
	2.1.4 Assess calculation outcomes using approximation and estimation
2.2 Be Able to Use and Convert SI Units in The Workplace	2.2.1 State the fundamental SI units
	2.2.2 Apply appropriate SI unit prefixes to represent values
	2.2.3 Carry out conversion of one SI unit and prefix to another
2.3 Be Able to Use Algebra to Express and Solve Work Related Problems	2.3.1 Apply the laws and properties of indices
	2.3.2 Apply and interpret algebraic notation
	2.3.3 Simplify and manipulate algebraic expressions
	2.3.4 Carry out transposition of formulae to change the subject
	2.3.5 Apply the properties of logarithms in expressions
2.4 Be Able to Use Trigonometry to Solve Problems	2.4.1 Apply Pythagoras's theorem to calculate values in a triangle
	2.4.2 Apply trigonometric ratios to calculate values in shapes

**DUTY: 3. Communicate in Workplace**

<b>Skill Areas / Competence</b>	<b>Competence Elements</b>
3.1 Be Able to Effectively Read Workplace Information	3.1.1 Demonstrate reading of work-related texts, fluently and with good understanding
	3.1.2 Describe the difference between 'skimming' and 'scanning' documentation
	3.1.3 Demonstrate methods of extracting information from written workplace documentation
3.2 Be Able to Effectively Communicate with Others in The Working Environment	3.2.1 Explain the importance of effective communication skills in the workplace
	3.2.2 Describe the benefits of effective communication in relation to organisational performance
	3.2.3 Explain the effects that poor communication can have within a working environment
	3.2.4 Define the extent of when to act on your own initiative to find, clarify and evaluate information, and when to seek help and advice from others

	3.2.5 Demonstrate effective use of Spoken Standard English for the purposes of oral communication in the workplace
3.3 Be Able to Give and Respond to Workplace Instructions and Warnings	3.3.1 Describe the main types of workplace instructions and warnings
	3.3.2 Demonstrate effective interpretation and delivery of appropriate types of oral instructions and warnings relevant to the workplace
3.4 Be Able to Complete Documentation Relevant to The Work Environment and Tasks Required	3.4.1 Describe the types of reports found in the workplace and their purposes
	3.4.2 Produce workplace reports and logbooks to required industry and organisational standards
3.5 Be Able to Prepare and Deliver Presentations	3.5.1 Describe the main characteristics of effective oral presentations
	3.5.2 Describe the use of oral presentations in the workplace
	3.5.3 Carry out oral presentations related to workplace tasks / processes using appropriate supporting visual aids as required
3.6 Be Able to Seek and Apply for Relevant Career Opportunities	3.6.1 Identify appropriate career paths in industry
	3.6.2 Describe the stages of a typical job application process
	3.6.3 Identify resources to support career development with industrial certification
	3.6.4 Describe documents to support career development
	3.6.5 Demonstrate the appropriate completion of required job application documentation
	3.6.6 Undertake relevant job interviews demonstrating identified positive success traits

#### **DUTY: 4. Life Skills for Personal Development**

<b>Skill Areas / Competence</b>	<b>Competence Elements</b>
4.1 Be able to demonstrate effective self-management in the workplace	4.1.1 Recognise personal roles and responsibilities
	4.1.2 Carry out effective management of time
4.2. Be able to demonstrate effective planning and organising in the workplace	4.2.1 Demonstrate effective preparation for tasks
	4.2.2 Carry out effective organisation of resources

4.3 Be able to demonstrate effectively working with others in the workplace	4.3.1 Perform effective work as an individual/team
	4.3.2 Demonstrate the use of feedback for improvement
4.4 Be able to demonstrate problem-solving skills in the workplace	4.4.1 Demonstrate effective identification of problems
	4.4.2 Demonstrate effective problem solving
4.5 Be able to demonstrate initiative and enterprise in the workplace	4.5.1 Demonstrate proactive attitudes
	4.5.2 Produce a range of options for different situations
4.6 Be able to demonstrate progression in the ability to learn in the workplace	4.6.1 Demonstrate understanding of ongoing learning
	4.6.2 Demonstrate the ability to deal with current or changing environments

**DUTY: 5. Understand Health, Safety, Environment and Quality Processes in The Oil and Gas Industry**

<b>Skill Areas / Competence</b>	<b>Competence Elements</b>
5.1 Understand How Relevant Legislation and Procedures Apply in The Workplace	5.1.1 Identify roles and responsibilities related to current relevant Health and Safety legislation
	5.1.2 Identify roles and responsibilities related to current relevant environmental legislation
	5.1.3 Describe the use of workplace procedures
	5.1.4 Define the difference between 'policies' and 'rules'
5.2 Understand and Interpret Workplace Health and Safety Information	5.2.1 Describe sources of information relevant to workplace safety
	5.2.2 Interpret information relevant to workplace safety
5.3 Understand Procedures for Dealing with Health and Safety and Environmental	5.3.1 Differentiate between an 'accident' and an 'incident'
	5.3.2 Describe the possible consequences of an accident in the workplace
	5.3.3 State the procedures to be followed in the case of accidents involving injury (including first aid)
	5.3.4 Specify appropriate procedures to be followed when emergency situations occur in the workplace

Situations in The Workplace	5.3.5	State the actions to be taken where situations exceed and individual's level of responsibility for Health and Safety in the workplace
	5.3.6	Specify appropriate responsible persons who Health and Safety matters should be reported to
	5.3.7	Describe the ways in which the environment may be affected by work activities
	5.3.8	Specify the requirements for processing waste from the workplace
	5.3.9	Explain why it is important to report any hazards to the environment that arise from work procedures
5.4 Understand the Procedures for Establishing a Safe Working Environment	5.4.1	Define what is meant by the term 'risk' in relation to Health and Safety in the workplace
	5.4.2	State the procedure for producing risk assessments and method statements
	5.4.3	State the purpose of Personal Protective Equipment (PPE)
	5.4.4	Describe the procedures to remove or minimise risks
	5.4.5	Specify the use and maintenance of PPE (including full body harness) for work operations
	5.4.6	State the first aid facilities that must be available in the work area in accordance with Health and Safety regulations
	5.4.7	Explain why it is important not to misuse first aid equipment / supplies and to replace first aid supplies once used
	5.4.8	Describe safe practices and procedures for the use of equipment and materials in the working environment
	5.4.9	Explain the importance of behavioural safety and a positive safety culture
	5.4.10	Describe conditions linked to common occupational health problems
5.5 Understand the Requirements for Identifying and Dealing with Hazards in The Work Environment	5.5.1	Identify warning signs for the main groups of hazardous substances
	5.5.2	Define what is meant by the term 'hazard' in relation to Health and Safety in the workplace
	5.5.3	Identify main hazard groups associated with work tasks
	5.5.4	Describe general situations which can constitute a hazard in the workplace
	5.5.5	Describe oil, gas and petrochemical specific hazards
	5.5.6	Explain practices and procedures for addressing hazards in the workplace
	5.5.7	Identify the correct type of fire extinguisher for each particular type of fire
	5.5.8	Explain situations where chemical hazards may be encountered
5.6 Understand the Management of Asset Safety	5.6.1	Define asset integrity and process safety
	5.6.2	List the types of asset integrity in oil and gas/petrochemical operations
	5.6.3	Define safety critical elements of equipment and systems

in Oil and Gas / Petrochemical Operations	5.6.4	Define models and system approaches for risk management and control for safety critical elements
	5.6.5	Describe safe procedures for the isolation of live / charged equipment and overrides including electrical hazard
	5.6.6	Define the responsibilities of employers and employees in maintaining asset integrity
5.7 Understand the Hazards Associated with Mechanical Lifting Operations	5.7.1	Define mechanical lifting
	5.7.2	Identify health and safety considerations prior to conducting lifting activities
	5.7.3	Describe types of mechanical lifting equipment
	5.7.4	Describe hazards associated with mechanical lifting
	5.7.5	Define key personnel roles involved with lifting operations
	5.7.6	Define the term Safe Working Load (SWL)
5.8 Understand How to Complete Health and Safety Reporting in The Workplace	5.8.1	Describe Health and Safety-related monitoring and reporting
5.9 Understand How to Complete Quality Defect Reporting in The Workplace	5.9.1	Describe Quality Defect on materials related monitoring and reporting

**DUTY: 6. Understand Engineering Science (Understand Engineering Basics)**

<b>Skill Areas / Competence</b>	<b>Competence Elements</b>	
6.1 Understand the Fundamental States of Matter and Measures Relating to Them	6.1.1	Define the three states of matter
	6.1.2	Define typical properties / measures relating to matter
6.2 Be Able to Undertake Engineering Measurement and Work with Derived Units	6.2.1	Describe appropriate measuring systems used for work tasks
	6.2.2	Select appropriate measurement instruments / tools used for work tasks
	6.2.3	Perform accurate measurement and readings of engineering objects / materials and processes
	6.2.4	Calculate derived units of measurement
6.3 Understand the Principles of	6.3.1	Define the main terms in the relationship between motion and force

Fundamental Mechanics to Solve Engineering Tasks / Problems	6.3.2	Describe the principles of linear motion
	6.3.3	Explain the relationship between force, mass and acceleration
	6.3.4	Solve problems on distance-time and velocity-time graphs
	6.3.5	Define the terms work, energy, efficiency and power and the relationship between them
	6.3.6	Define types of energy
	6.3.7	Describe the transformation of energy and conservation of energy
6.4 Understand the Function and Operation of Simple Machines	6.3.8	Solve problems related to work, energy and power
	6.4.1	Describe the function and application of simple machines
6.5 Understand the Principles and Effects of Heat Energy and Temperature	6.4.2	Describe the principle and application of friction to machines
	6.5.1	Explain the concept of temperature and heat energy
	6.5.2	Describe the principle of operation of liquid expansion in a glass thermometer
	6.5.3	Undertake accurate temperature measurements using a thermometer
	6.5.4	Describe the concept of linear expansion
	6.5.5	Describe types of heat transfer
6.6 Understand the Principles of Magnetism and Electricity	6.5.6	Interpret temperature-time graphs for substances to define values
	6.6.1	Describe the principles of magnetism
	6.6.2	Define electrical terms
	6.6.3	Describe electrical circuits and their characteristics
	6.6.4	Sketch electric circuits using standard electrical symbols
6.7 Understand the Difference Between Metals and Non-Metals	6.6.5	Undertake accurate measurements of current and voltage in D.C. circuits
	6.7.1	Describe the properties of metals and their uses
	6.7.2	Describe the properties of non-metals and their uses

#### **DUTY: 7. Understand Oil and Gas Industry Operation (Brunei)**

<b>Skill Areas / Competence</b>	<b>Competence Elements</b>
7.1 Understand the Background to Oil and Gas Production in Brunei	7.1.1 Outline the history of oil and gas discovery in Brunei including oil and gas milestones
	7.1.2 Identify the roles (including joint ventures) of key stakeholders in the oil and gas industry in Brunei
	7.1.3 Identify the key challenges faced by the Brunei energy sector

7.2 Understand the Formation of Oil and Gas and Oil and Gas Exploration	7.2.1	Describe with the aid of diagrams the formation of oil and gas
	7.2.2	Describe the composition of crude oil and gas
7.3 Understand the Lifecycles of Oil and Gas Fields	7.3.1	Explain the difference between 'upstream' and 'downstream' in oil and gas extraction and processing
	7.3.2	Explain with the aid of diagrams the phases of oil and gas field lifecycles
	7.3.3	Identify the roles of key personnel involved with oil and gas field operations
	7.3.4	Describe with the aid of diagrams the geology elements of a petroleum system
	7.3.5	Describe with the aid of diagrams oil and gas drilling processes
	7.3.6	Describe the elements of a 'field development plan'
	7.3.7	Explain the considerations for operation and maintenance of an oil and gas production process



## 1.2 Specialised

### DUTY: 1. Apply Health, Safety and Environment including Quality Practice for Rigging in The Oil and Gas Industry

Skill Areas / Competence	Competence Elements
1.1 Be Able to Apply Relevant Health and Safety Legislation and Procedures That Relate to The Workplace	1.1.1 Comply with relevant workplace Health and Safety including quality procedures and obligations
	1.1.2 Work within Health and Safety, quality requirements
	1.1.3 Apply procedures to ensure the safe use, maintenance and storage of materials (including chemicals), tools, plant / machinery and equipment as defined by relevant documentation including material preservation requirements
	1.1.4 Comply with relevant signage
	1.1.5 Apply procedures to ensure safety in the workplace by the correct use of PPE, guards, interlocks, barriers and notices
	1.1.6 Use access equipment correctly
	1.1.7 Demonstrate the use of PPE and full body harness
	1.1.8 Demonstrate safe manual and ergonomic handling techniques
1.2 Be Able to Assess the Workplace for Hazards and Identify Remedial Actions in Accordance with Health and Safety Legislation and Policy	1.2.1 Identify unsafe situations / conditions and take remedial actions
	1.2.2 Assess the workplace and revise work practices to account for hazards that could cause harm
	1.2.3 Undertake health and safety monitoring and reporting
1.3 Be Able Apply Relevant Environmental Legislation and Procedures That Relate to The Workplace	1.3.1 Comply with relevant workplace Environmental procedures and obligations as defined by current legislation and procedures
1.4 Be Able to Assess the Materials for Defect and identify Remedial Actions	1.4.1 Undertake Quality Defect monitoring and reporting

## DUTY: 2. Introduction to Rigging and Lifting

Skill Areas / Competence	Competencies Elements
2.1 Understand the Roles and Responsibilities of Rigging and Lifting Personnel	2.1.1 Explain the roles and responsibilities of personnel involved in rigging and lifting operations
	2.1.2 Describe typical reporting structures for rigging and lifting operations
2.2 Understand Legislation and Regulations That Apply to Rigging and Lifting Operations	2.2.1 Describe the main Health and Safety legislation that applies to rigging and lifting operations
	2.2.2 Describe relevant international legislation that relates to lifting operations
2.3 Understand Terminology and Equipment Used in Rigging and Lifting Operations	2.3.1 Explain the meaning and usage of common rigging and lifting terminology
	2.3.2 Describe the application and use of plant and appliances for lifting operations
	2.3.3 Describe the use of common lift accessories and the factors affecting their selection
	2.3.4 Describe fall safety systems used in rigging and lifting operations
2.4 Understand Fundamental Practices and Principles of Lifting and Rigging	2.4.1 Describe methods used to move loads
	2.4.2 Describe slinging methods in relation to their use for different loads
	2.4.3 Explain sling angles and arrangements when lifting suspended loads
	2.4.4 Calculate lifting operational values for loads and equipment load weights and sling angle factors
	2.4.5 Describe the use of rigging and lifting points for loads
	2.4.6 Describe the common types of knots, hitches and lashings used in rigging and their applications
	2.4.7 Demonstrate the correct tying of knots, hitches and lashings
	2.4.8 Describe communication methods and protocols used in rigging and lifting operations
	2.4.9 Explain load characteristics that can affect the complexity of lifting operations
	2.4.10 Describe factors that can change during lifting operations
2.5 Understand Inspection and Maintenance Requirements for Lifting Equipment	2.5.1 Explain the purpose of inspection and examination of lifting equipment, tools and accessories before use
	2.5.2 Describe the types of inspection and examination used for lifting equipment, tools and accessories
	2.5.3 Describe maintenance and storage requirements for lifting equipment, tools and accessories to ensure ongoing safe usage

	2.5.4 Describe the methods of identification for lift equipment suitability for use
	2.5.5 Describe classification and segregation systems for tools and equipment

### DUTY: 3. Preparation for Lifting Operations

Skill Areas / Competence	Competencies Elements
3.1 Understand the Processes and Procedures That Support Lift Planning Preparation for Lifting Operations	3.1.1 Identify typical hazards associated with lifting operations
	3.1.2 Describe what control-of-work documents are and how they apply to lifting operations
	3.1.3 Describe common categories of lift and their purpose in lift planning
	3.1.4 Explain methods for determining the CoG and total hook load
	3.1.5 Describe methods to establish load-bearing capabilities of areas involved with lifting operations
	3.1.6 Explain considerations for personnel during lifting operations
	3.1.7 Explain the benefit of 'trial lifts'
	3.1.8 Describe emergency response procedures for lifting operations
	3.1.9 Describe hazards affecting crane lifting operations and their associated safety considerations
	3.1.10 Describe safety procedures associated with lifting operations using cranes
3.2 Understand the Purpose and Content of a Lift Plan for Lifting Operations	3.2.1 Explain the purpose of a lift plan
	3.2.2 Define personnel responsible for lift planning
	3.2.3 Define common elements considered and included in a lift plan

### DUTY: 4. Conduct Rigging Operations Under Supervision

Skill Areas / Competence	Competencies Elements
4.1 Understand How to Access and Interpret Information Related to Safe Lifting Operations	4.1.1 Access and extract information associated with completing rigging / lifting operations
	4.1.2 Describe workplace procedures for reporting incorrect / unsuitable information related to lifting operations
	4.1.3 Describe workplace procedures for the security of lifting / rigging tools and equipment
	4.1.4 Describe how to protect lifting / rigging tools and equipment from damage and associated hazards
4.2 Be Able to Conduct Rigging Activities for Lifting	4.2.1 Undertake rigging activities for lifting operations conforming to defined lift plans
	4.2.2 Select appropriate lifting equipment and accessories in accordance with the defined lift planning

Operations Under Full Competent Person Supervision	4.2.3	Carryout pre-use visual inspection of rigging equipment and location for lifting operations	
	4.2.4	Complete operational checks and functionality tests of communication equipment	
	4.2.5	Complete appropriate installation and positioning of lifting equipment prior to lift operations	
	4.2.6	Demonstrate appropriate communication methods with personnel involved in lifting operations	
	4.2.7	Demonstrate correct procedures for cross-hauling of loads	
	4.2.8	Demonstrate correct moving of loads following identified load paths	
	4.2.9	Demonstrate safe methods for disconnection of lifting equipment from loads upon completion of lifting operations	
	4.2.10	Carry out post-lift inspection of rigging equipment upon completion of lifting operations	
	4.3 Be Able to Complete Post-Lifting Operation Activities and Documentation Under Full Competent Person Supervision	4.3.1	Explain appropriate procedures and documentation required where the load is damaged
		4.3.2	Complete appropriate lifting operation hand-over procedures and documentation
4.3.3		Carry out reinstatement of the work area after lifting operation are complete in accordance with company and environmental policies	
4.3.4		Complete equipment and tool post-use maintenance and locate equipment in an appropriate defined storage location in accordance with company policies	

## 2. COMPETENCY STANDARDS

### 2.1 Generic

Duty	1. Use of Relevant Technology	
Competence	Performance Criteria	
1.1 UNDERSTAND THE ELEMENTS OF COMPUTER SYSTEMS AND THEIR PERIPHERALS IN THE WORKPLACE	<ol style="list-style-type: none"> <li>1. Identify typical <b>computer hardware systems</b> in the workplace</li> <li>2. Identify computer system <b>peripherals</b></li> </ol> <p><b>Range</b></p> <p><b>1.1.1 Computer hardware systems:</b></p> <ul style="list-style-type: none"> <li>▪ Desktop computers               <ul style="list-style-type: none"> <li>○ Standalone</li> <li>○ Network</li> </ul> </li> <li>▪ Laptop computers</li> <li>▪ Tablets</li> <li>▪ Plant integrated</li> </ul> <p><b>1.1.2 Peripherals:</b></p> <ul style="list-style-type: none"> <li>▪ Monitors</li> <li>▪ Scanners</li> <li>▪ Printers</li> <li>▪ Mouse</li> <li>▪ Keyboard</li> <li>▪ Projectors</li> </ul>	
1.2 UNDERSTAND THE TYPES OF OPERATING SYSTEMS AND GUI APPLICATIONS	<ol style="list-style-type: none"> <li>1. Describe the common types of <b>operating system</b> found on workplace computer systems</li> <li>2. Explain what a GUI application is</li> </ol> <p><b>Range</b></p> <p><b>1.2.1 Operating systems:</b></p> <ul style="list-style-type: none"> <li>▪ Windows</li> <li>▪ Linux</li> <li>▪ Macintosh</li> </ul>	
1.3 BE ABLE TO USE OPERATING SYSTEMS TO PERFORM SYSTEM AND FILE TASKS	<ol style="list-style-type: none"> <li>1. Demonstrate correct <b>procedures</b> for operating a computer system</li> <li>2. Demonstrate appropriate use of <b>input and output devices</b></li> <li>3. Complete system file and folder <b>management operations</b></li> </ol> <p><b>Range</b></p> <p><b>1.3.1 Procedures:</b></p> <ul style="list-style-type: none"> <li>▪ Powering a computer system up</li> <li>▪ Logging into an operating system</li> </ul>	

	<ul style="list-style-type: none"> <li>▪ Logging out from an operating system</li> <li>▪ Shutting a computer system down</li> </ul> <p><b>1.3.2 Input and output devices:</b></p> <ul style="list-style-type: none"> <li>▪ QUERTY keyboard</li> <li>▪ Mouse</li> <li>▪ Touch screen</li> <li>▪ Digital camera</li> <li>▪ Scanners</li> <li>▪ Printers</li> </ul> <p><b>1.3.3 Management operations:</b></p> <ul style="list-style-type: none"> <li>▪ Folders <ul style="list-style-type: none"> <li>○ Create</li> <li>○ Rename</li> <li>○ Delete</li> </ul> </li> <li>▪ Files <ul style="list-style-type: none"> <li>○ Create</li> <li>○ Copy</li> <li>○ Move</li> <li>○ Rename</li> <li>○ Delete</li> </ul> </li> <li>▪ View files/directories</li> <li>▪ Complete file search</li> </ul>
<p>1.4 BE ABLE TO USE AN INTERNET BROWSER</p>	<ol style="list-style-type: none"> <li>1. Identify appropriate <b>internet services</b></li> <li>2. Identify <b>considerations</b> for safe internet use</li> <li>3. Use an internet browser for required <b>tasks</b></li> </ol> <p><b><u>Range</u></b></p> <p><b>1.4.1 Internet services:</b></p> <ul style="list-style-type: none"> <li>▪ Internet Service Providers (ISPs)</li> <li>▪ Webmail accounts (IMAP, POP3 and Microsoft Exchange)</li> </ul> <p><b>1.4.2 Considerations:</b></p> <ul style="list-style-type: none"> <li>▪ Viruses</li> <li>▪ Phishing</li> <li>▪ Fraud</li> <li>▪ Legal</li> </ul> <p><b>1.4.3 Tasks:</b></p> <ul style="list-style-type: none"> <li>▪ Search for defined topics</li> <li>▪ Use hyperlinks</li> <li>▪ Create favourites</li> </ul>

	<ul style="list-style-type: none"> <li>▪ Use browsing history</li> <li>▪ Use Uniform Resource Locators (URLs)</li> </ul>
<p>1.5 BE ABLE TO USE EMAIL TO EXCHANGE INFORMATION AND COMMUNICATE</p>	<ol style="list-style-type: none"> <li>1. Identify <b>terms</b> used with email messaging</li> <li>2. Use email to <b>send / receive messages</b> and attachments</li> </ol> <p><b><u>Range</u></b></p> <p><b>1.5.1 Terms:</b></p> <ul style="list-style-type: none"> <li>▪ Inbox, Outbox, Sent, Drafts</li> <li>▪ Attachments</li> <li>▪ Forward, Reply</li> <li>▪ Cc, Bcc</li> </ul> <p><b>1.5.2 Send/receive messages:</b></p> <ul style="list-style-type: none"> <li>▪ Subject/title inclusion</li> <li>▪ Recipients</li> <li>▪ Manage emails (folders)</li> </ul>
<p>1.6 BE ABLE TO USE WORD PROCESSING SOFTWARE APPLICATIONS</p>	<ol style="list-style-type: none"> <li>1. Identify <b>software applications</b></li> <li>2. Identify software application <b>file types</b></li> <li>3. Use word processing software applications to <b>create and format documents</b></li> <li>4. Use printers to <b>print</b> documents</li> </ol> <p><b><u>Range</u></b></p> <p><b>1.6.1 Software applications:</b></p> <ul style="list-style-type: none"> <li>▪ Word processing</li> <li>▪ Presentation</li> </ul> <p><b>1.6.2 File types:</b></p> <ul style="list-style-type: none"> <li>▪ .doc, .xls, .pdf, .jpg, .ppt</li> </ul> <p><b>1.6.3 Create and format documents:</b></p> <p>Using:</p> <ul style="list-style-type: none"> <li>▪ Text <ul style="list-style-type: none"> <li>○ Font style, font size, text enhancement, copy/cut, move</li> </ul> </li> <li>▪ Paragraph <ul style="list-style-type: none"> <li>○ Alignment, spacing, indenting</li> </ul> </li> <li>▪ Page <ul style="list-style-type: none"> <li>○ Size, orientation, margins, header/footer, numbering, headings (with different levels)</li> </ul> </li> <li>▪ Document <ul style="list-style-type: none"> <li>○ New page</li> <li>○ Section break</li> </ul> </li> </ul>

	<ul style="list-style-type: none"> <li>○ Footnotes</li> <li>○ Tables</li> <li>○ Spell checking/grammar</li> <li>○ Printing</li> <li>○ Saving</li> </ul> <p><b>1.6.4 Print:</b></p> <ul style="list-style-type: none"> <li>▪ To a dedicated printer</li> <li>▪ Print sections and/or specified pages</li> </ul>
<p>1.7 BE ABLE TO USE PRESENTATION SOFTWARE APPLICATIONS</p>	<ol style="list-style-type: none"> <li>1. Use presentation software applications to <b>create and format presentations</b></li> <li>2. Use software application <b>graphic interfaces</b></li> </ol> <p><b>Range</b></p> <p><b>1.7.1 Create and format presentations:</b></p> <p>Using:</p> <ul style="list-style-type: none"> <li>▪ Text <ul style="list-style-type: none"> <li>○ Font style, font size, text enhancement,</li> </ul> </li> <li>▪ Slide <ul style="list-style-type: none"> <li>○ Animation</li> <li>○ Sequencing</li> <li>○ Video/sound</li> <li>○ Style/format</li> </ul> </li> <li>▪ Presentation <ul style="list-style-type: none"> <li>○ Retrieve</li> <li>○ Edit</li> <li>○ Save</li> <li>○ Sequence</li> </ul> </li> </ul> <p><b>1.7.2 Graphic interface:</b></p> <ul style="list-style-type: none"> <li>▪ Ribbon</li> <li>▪ Mini-toolbar</li> <li>▪ Quick access buttons</li> <li>▪ Short-cuts</li> </ul>

Duty	2. Apply Numeracy
Competence	Performance Criteria
<p>2.1 BE ABLE TO USE NUMERIC EXPRESSIONS IN STANDARD FORM TO SOLVE WORK RELATED PROBLEMS</p>	<ol style="list-style-type: none"> <li>1. Carry out rounding of numbers and measures to an appropriate <b>degree of accuracy</b></li> <li>2. Calculate <b>values</b> for sums, differences, products and quotients</li> <li>3. Carry out <b>conversion</b> of values in one form to another</li> <li>4. Assess calculation outcomes using approximation and estimation</li> </ol>



	<p><b><u>Range</u></b></p> <p><b>2.1.1 Degree of accuracy:</b></p> <ul style="list-style-type: none"> <li>▪ Significant figures</li> <li>▪ Decimal places</li> </ul> <p><b>2.1.2 Values:</b></p> <ul style="list-style-type: none"> <li>▪ Integers</li> <li>▪ Decimals</li> <li>▪ Simple fractions (proper and improper)</li> <li>▪ Mixed numbers – both positive and negative</li> <li>▪ Ratio</li> <li>▪ Proportion (direct and indirect)</li> <li>▪ Percentage (error, efficiency, increase, decrease)</li> </ul> <p><b>2.1.3 Conversion:</b></p> <ul style="list-style-type: none"> <li>▪ Fraction</li> <li>▪ Decimal</li> <li>▪ Percentage</li> </ul>
<p>2.2 BE ABLE TO USE AND CONVERT SI UNITS IN THE WORKPLACE</p>	<ol style="list-style-type: none"> <li>1. State the fundamental <b><i>SI units</i></b></li> <li>2. Apply appropriate SI unit <b><i>prefixes</i></b> to represent values</li> <li>3. Carry out conversion of one SI unit and prefix to another</li> </ol> <p><b><u>Range</u></b></p> <p><b>2.2.1 SI units:</b></p> <ul style="list-style-type: none"> <li>▪ Length (metres - m)</li> <li>▪ Time (seconds - s)</li> <li>▪ Temperature (kelvin – k)</li> <li>▪ Mass (kilograms – kg)</li> </ul> <p><b>2.2.2 Prefixes:</b></p> <ul style="list-style-type: none"> <li>▪ milli</li> <li>▪ centi</li> <li>▪ kilo</li> </ul>
<p>2.3 BE ABLE TO USE ALGEBRA TO EXPRESS AND SOLVE WORK RELATED PROBLEMS</p>	<ol style="list-style-type: none"> <li>1. Apply the laws and properties of <b><i>indices</i></b></li> <li>2. Apply and interpret algebraic notation</li> <li>3. <b><i>Simplify and manipulate</i></b> algebraic expressions</li> <li>4. Carry out <b><i>transposition</i></b> of formulae to change the subject</li> <li>5. Apply the properties of logarithms in <b><i>expressions</i></b></li> </ol> <p><b><u>Range</u></b></p>

	<p><b>2.3.1 Indices:</b></p> <ul style="list-style-type: none"> <li>▪ Simplify algebraic expressions</li> <li>▪ Solve numeric expressions</li> </ul> <p><b>2.3.3 Simplify and manipulate:</b></p> <ul style="list-style-type: none"> <li>▪ Substitution</li> <li>▪ Collecting like terms</li> <li>▪ Multiplying a single term over a bracket</li> <li>▪ Taking out common factors</li> <li>▪ Expanding products of two or more binomials</li> <li>▪ Factorising quadratic expressions</li> <li>▪ Simplifying expressions involving sums, products and powers</li> </ul> <p><b>2.3.4 Transposition:</b></p> <ul style="list-style-type: none"> <li>▪ One or more terms</li> <li>▪ Indices and roots</li> </ul> <p><b>2.3.5 Expressions:</b></p> <ul style="list-style-type: none"> <li>▪ Algebraic</li> <li>▪ Indicial</li> <li>▪ Converting between logarithmic and index form</li> </ul>
<p>2.4 BE ABLE TO USE TRIGONOMETRY TO SOLVE PROBLEMS</p>	<ol style="list-style-type: none"> <li>1. Apply Pythagoras's theorem to calculate values in a triangle</li> <li>2. Apply <b>trigonometric ratios</b> to calculate <b>values</b> in shapes</li> </ol> <p><b><u>Range</u></b></p> <p><b>2.4.2 Trigonometric ratios:</b></p> <ul style="list-style-type: none"> <li>▪ Sine</li> <li>▪ Cosine</li> <li>▪ Tangent</li> </ul> <p><b>Values:</b></p> <ul style="list-style-type: none"> <li>▪ Angle</li> <li>▪ Length</li> <li>▪ Area</li> </ul>

Duty	3. Communicate in Workplace
Competence	Performance Criteria
<p>3.1 BE ABLE TO EFFECTIVELY READ WORKPLACE INFORMATION</p>	<ol style="list-style-type: none"> <li>1. Demonstrate reading of work-related texts, fluently and with good understanding</li> <li>2. Describe the difference between 'skimming' and 'scanning' documentation</li> </ol>

	<p>3. Demonstrate <b>methods</b> of extracting information from written workplace <b>documentation</b></p> <p><b><u>Range</u></b></p> <p><b>3.1.3 Methods:</b></p> <ul style="list-style-type: none"> <li>▪ Skimming</li> <li>▪ Scanning</li> </ul> <p><b>Documentation (including):</b></p> <ul style="list-style-type: none"> <li>▪ Safety instructions</li> <li>▪ Job instructions</li> <li>▪ Material specifications</li> <li>▪ Planning documentation</li> <li>▪ Drawing instructions</li> <li>▪ Finishing specifications</li> <li>▪ Quality control documents</li> <li>▪ Test schedules</li> <li>▪ Reference tables/charts</li> <li>▪ Operation sheets</li> <li>▪ Manufacturers' instructions</li> <li>▪ National, international and organisational standards</li> <li>▪ Process specifications</li> <li>▪ Work procedure specifications</li> </ul>
<p>3.2 BE ABLE TO EFFECTIVELY COMMUNICATE WITH OTHERS IN THE WORKING ENVIRONMENT</p>	<ol style="list-style-type: none"> <li>1. Explain the importance of effective communication skills in the workplace</li> <li>2. Describe the benefits of effective communication in relation to <b>organisational performance</b></li> <li>3. Explain the effects that poor communication can have within a <b>working environment</b></li> <li>4. Define the extent of when to act on your own initiative to find, clarify and evaluate information, and when to seek help and advice from others</li> <li>5. Demonstrate effective use of <b>Spoken Standard English</b> for the purposes of oral communication in the workplace</li> </ol> <p><b><u>Range</u></b></p> <p><b>3.2.2 Organisational performance:</b></p> <ul style="list-style-type: none"> <li>▪ Operationally</li> <li>▪ Safety management</li> <li>▪ Interpersonal/morale</li> </ul> <p><b>3.3.3 Working environment:</b></p>

	<ul style="list-style-type: none"> <li>▪ Operationally</li> <li>▪ Safety management and risk</li> <li>▪ Interpersonal working relationships</li> </ul> <p><b>3.3.5 Spoken Standard English:</b></p> <ul style="list-style-type: none"> <li>▪ Audible</li> <li>▪ Intelligible</li> <li>▪ Appropriate to work setting</li> <li>▪ Expresses required information</li> <li>▪ Is structured</li> <li>▪ Meets the needs of the recipient(s)</li> <li>▪ Provides opportunity for feedback/questions as appropriate</li> <li>▪ Polite</li> </ul>
<p>3.3 BE ABLE TO GIVE AND RESPOND TO WORKPLACE INSTRUCTIONS AND WARNINGS</p>	<ol style="list-style-type: none"> <li>1. Describe the main <b>types</b> of workplace instructions and warnings</li> <li>2. Demonstrate effective interpretation and delivery of appropriate <b>types</b> of oral instructions and warnings relevant to the workplace</li> </ol> <p><b><u>Range</u></b></p> <p><b>3.3.1 Types:</b></p> <ul style="list-style-type: none"> <li>▪ Safety related <ul style="list-style-type: none"> <li>○ Mandatory</li> <li>○ Prohibition</li> <li>○ Warning</li> <li>○ Emergency information</li> </ul> </li> <li>▪ Task related</li> <li>▪ Organisation-based</li> <li>▪ Interpersonal/supervisory</li> </ul> <p><b>3.3.2 Types:</b></p> <ul style="list-style-type: none"> <li>▪ Safety related <ul style="list-style-type: none"> <li>○ Mandatory</li> <li>○ Prohibition</li> <li>○ Warning</li> <li>○ Emergency information</li> </ul> </li> <li>▪ Task related</li> <li>▪ Organisation-based</li> <li>▪ Interpersonal/supervisory</li> </ul>
<p>3.4 BE ABLE TO COMPLETE DOCUMENTATION RELEVANT TO THE</p>	<ol style="list-style-type: none"> <li>1. Describe the <b>types of reports</b> found in the workplace and their purposes</li> <li>2. Produce workplace reports and logbooks to required industry and organisational <b>standards</b></li> </ol>

<p>WORK ENVIRONMENT AND TASKS REQUIRED</p>	<p><b><u>Range</u></b></p> <p><b>3.4.1 Types of reports:</b></p> <ul style="list-style-type: none"> <li>▪ Safety</li> <li>▪ Accident/Incident</li> <li>▪ Equipment maintenance</li> <li>▪ Work progress/completion</li> <li>▪ Inspection</li> <li>▪ Logbooks</li> </ul> <p><b>3.4.2 Standards:</b></p> <ul style="list-style-type: none"> <li>▪ Using industry conventions</li> <li>▪ Using organisational protocols</li> <li>▪ Using appropriate Standard English</li> <li>▪ Using clear structure and layout</li> </ul>
<p>3.5 BE ABLE TO PREPARE AND DELIVER PRESENTATIONS</p>	<ol style="list-style-type: none"> <li>1. Describe the main <b>characteristics</b> of effective oral presentations</li> <li>2. Describe the <b>use</b> of oral presentations in the workplace</li> <li>3. Carry out oral presentations related to workplace tasks / processes using appropriate <b>supporting visual aids</b> as required</li> </ol> <p><b><u>Range</u></b></p> <p><b>3.5.1 Characteristics:</b></p> <ul style="list-style-type: none"> <li>▪ Selecting appropriate information</li> <li>▪ Organising information effectively</li> <li>▪ Planning for different audiences</li> <li>▪ Using persuasive language and tone</li> </ul> <p><b>3.5.2 Use:</b></p> <ul style="list-style-type: none"> <li>▪ Work task reporting</li> <li>▪ Safety briefing</li> <li>▪ Project presentations</li> <li>▪ Training</li> </ul> <p><b>3.5.3 Supporting visual aids:</b></p> <ul style="list-style-type: none"> <li>▪ Presentation software</li> <li>▪ Reference documentation</li> <li>▪ Supporting delivery materials (handouts)</li> </ul>
<p>3.6 BE ABLE TO SEEK AND APPLY FOR RELEVANT CAREER OPPORTUNITIES</p>	<ol style="list-style-type: none"> <li>1. Identify appropriate career paths in industry</li> <li>2. Describe the stages of a typical job <b>application process</b></li> <li>3. Identify <b>resources</b> to support career development with industrial certification</li> <li>4. Describe <b>documents</b> to support career development</li> </ol>

	<p>5. Demonstrate the appropriate completion of required job application documentation</p> <p>6. Undertake relevant job interviews demonstrating identified positive <b>success traits</b></p> <p><b><u>Range</u></b></p> <p><b>3.6.2 Application process:</b></p> <ul style="list-style-type: none"> <li>▪ Update/Create CV</li> <li>▪ Complete a Cover Letter.</li> <li>▪ Complete Job Applications.</li> <li>▪ Job Application Screening (employer)</li> <li>▪ Complete aptitude tests</li> <li>▪ Complete interview(s)</li> <li>▪ Screening/references</li> <li>▪ Job Offer</li> </ul> <p><b>3.6.3 Resources:</b></p> <ul style="list-style-type: none"> <li>▪ Internet</li> <li>▪ Trade publications</li> <li>▪ Organisation bulletins</li> <li>▪ Professional bodies/organisations</li> <li>▪ Industry research papers</li> <li>▪ Mentors</li> <li>▪ Networking</li> <li>▪ Job descriptions</li> <li>▪ Person specification</li> <li>▪ Awarding organisations</li> </ul> <p><b>3.6.4 Documentation:</b></p> <ul style="list-style-type: none"> <li>▪ Curriculum Vitae (CV)</li> <li>▪ Personal statement</li> <li>▪ Cover letter</li> <li>▪ References</li> </ul> <p><b>3.6.6 Success traits:</b></p> <ul style="list-style-type: none"> <li>▪ Thorough job knowledge</li> <li>▪ Appearance (clothing)</li> <li>▪ Mannerisms</li> <li>▪ Attentiveness</li> <li>▪ Positive responses</li> <li>▪ Demeanour and ethics</li> </ul>
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<b>Duty</b>	<b>4. Life Skills for Personal Development</b>
<b>Competence</b>	<b>Performance Criteria</b>

<p>4.1 BE ABLE TO DEMONSTRATE EFFECTIVE SELF-MANAGEMENT IN THE WORKPLACE</p>	<ol style="list-style-type: none"> <li>1. Recognise <i>personal roles and responsibilities</i></li> <li>2. Carry out effective <i>management of time</i></li> </ol> <p><b><u>Range</u></b></p> <p><b>4.1.1 Personal roles and responsibilities:</b></p> <ul style="list-style-type: none"> <li>▪ Able to demonstrate self-control in challenging situations</li> <li>▪ Able to engage in learning activities</li> <li>▪ Able to demonstrate commitment to work and learning</li> <li>▪ Able to undertake responsibility for effort and actions</li> </ul> <p><b>4.1.2 Management of time:</b></p> <ul style="list-style-type: none"> <li>▪ Able to demonstrate punctuality</li> <li>▪ Able to allocate appropriate time to activities</li> <li>▪ Able to meet deadlines</li> <li>▪ Able to prioritise tasks</li> </ul>
<p>4.2 BE ABLE TO DEMONSTRATE EFFECTIVE PLANNING AND ORGANISING IN THE WORKPLACE</p>	<ol style="list-style-type: none"> <li>1. Demonstrate effective <i>preparation</i> for tasks</li> <li>2. Carry out effective <i>organisation of resources</i></li> </ol> <p><b><u>Range</u></b></p> <p><b>4.2.1 Preparation:</b></p> <ul style="list-style-type: none"> <li>▪ Able to identify the objectives of a task</li> <li>▪ Able to gather resources to meet task objectives</li> <li>▪ Able to use appropriate planning tools (e.g. checklist, Gantt chart)</li> <li>▪ Able to prepare for contingencies</li> </ul> <p><b>4.2.2 Organisation of resources:</b></p> <ul style="list-style-type: none"> <li>▪ Able to identify critical tasks</li> <li>▪ Able to arrange tasks in a logical order</li> <li>▪ Able to allocate resources to complete tasks</li> <li>▪ Able to use relevant information to complete tasks</li> </ul>
<p>4.3 BE ABLE TO DEMONSTRATE EFFECTIVELY WORKING WITH OTHERS IN THE WORKPLACE</p>	<ol style="list-style-type: none"> <li>1. Perform effective <i>work as an individual/team</i></li> <li>2. Demonstrate the use of <i>feedback for improvement</i></li> </ol> <p><b><u>Range</u></b></p> <p><b>4.3.1 Work as an individual/team:</b></p> <ul style="list-style-type: none"> <li>▪ Able to demonstrate willingness to take up responsibilities</li> <li>▪ Able to partake in discussions with team members</li> <li>▪ Able to provide support to the team</li> </ul>

	<ul style="list-style-type: none"> <li>▪ Able to work together with others towards common team goals</li> </ul> <p><b>4.3.2 Feedback for improvement:</b></p> <ul style="list-style-type: none"> <li>▪ Able to provide positive feedback</li> <li>▪ Able to identify areas for improvement</li> <li>▪ Able to accept and learn from mistakes</li> <li>▪ Able to encourage team member to improve</li> </ul>
<p>4.4 BE ABLE TO DEMONSTRATE PROBLEM-SOLVING SKILLS IN THE WORKPLACE</p>	<ol style="list-style-type: none"> <li>1. Demonstrate effective <b>identification of problems</b></li> <li>2. Demonstrate effective <b>problem solving</b></li> </ol> <p><b>Range</b></p> <p><b>4.4.1 Identification of problems:</b></p> <ul style="list-style-type: none"> <li>▪ Able to evaluate problems</li> <li>▪ Able to analyse problems</li> <li>▪ Able to gather information relating to problems</li> <li>▪ Able to relate knowledge to problems</li> </ul> <p><b>4.4.2 Problem solving:</b></p> <ul style="list-style-type: none"> <li>▪ Able to generate strategies to solve problems</li> <li>▪ Able to explore different solutions</li> <li>▪ Able to apply strategies according to situation</li> <li>▪ Able to monitor and reflect on results</li> </ul>
<p>4.5 BE ABLE TO DEMONSTRATE INITIATIVE AND ENTERPRISE IN THE WORKPLACE</p>	<ol style="list-style-type: none"> <li>1. Demonstrate <b>proactive attitudes</b></li> <li>2. Produce a <b>range of options for different situations</b></li> </ol> <p><b>Range</b></p> <p><b>4.5.1 Proactive attitudes:</b></p> <ul style="list-style-type: none"> <li>▪ Able to anticipate potential problems</li> <li>▪ Able to act quickly to resolve problems</li> <li>▪ Able to recognise and use opportunities</li> <li>▪ Able to initiate possible solutions</li> </ul> <p><b>4.5.2 Range of options for different situations:</b></p> <ul style="list-style-type: none"> <li>▪ Able to generate innovative ideas to solve problems</li> <li>▪ Able to identify problems that may occur</li> <li>▪ Able to apply suitable ideas into action</li> <li>▪ Able to apply appropriate skills to given situations/tasks</li> </ul>
<p>4.6 BE ABLE TO DEMONSTRATE PROGRESSION IN THE ABILITY TO LEARN IN THE WORKPLACE</p>	<ol style="list-style-type: none"> <li>1. Demonstrate <b>understanding of ongoing learning</b></li> <li>2. Demonstrate the ability to deal with <b>current or changing environments</b></li> </ol> <p><b>Range</b></p> <p><b>4.6.1 Understanding of ongoing learning:</b></p>



	<ul style="list-style-type: none"> <li>▪ Able to demonstrate motivation to learn new ideas</li> <li>▪ Able to undertake mentoring and coaching activities</li> <li>▪ Able to demonstrate independent learning</li> <li>▪ Able to demonstrate efforts to improve knowledge</li> </ul> <p><b>4.6.2 Current or changing environments:</b></p> <ul style="list-style-type: none"> <li>▪ Able to apply knowledge into work activities</li> <li>▪ Able to use a range of media to learn</li> <li>▪ Able to adapt to a changing environment</li> <li>▪ Able to accept challenges positively</li> </ul>
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Duty	<b>5. Understand Health, Safety, Environment and Quality Processes in The Oil and Gas Industry</b>
<b>Competence</b>	<b>Performance Criteria</b>
5.1 UNDERSTAND HOW RELEVANT LEGISLATION AND PROCEDURES APPLY IN THE WORKPLACE	<ol style="list-style-type: none"> <li>1. Identify <b>roles</b> and responsibilities related to current relevant <b>Health and Safety legislation</b></li> <li>2. Identify roles and responsibilities related to current relevant <b>environmental legislation</b></li> <li>3. Describe the use of <b>workplace procedures</b></li> <li>4. Define the difference between ‘policies’ and ‘rules’</li> </ol> <p><b><u>Range</u></b></p> <p><b>5.1.1 Roles:</b></p> <ul style="list-style-type: none"> <li>▪ Employers</li> <li>▪ Employees</li> <li>▪ Organisations</li> </ul> <p><b>Health and Safety legislation:</b></p> <ul style="list-style-type: none"> <li>▪ Workplace Safety and Health Order 2009</li> <li>▪ Workplace Safety and Health Regulations 2014</li> <li>▪ Fire Safety Order 2016</li> <li>▪ Employment Order 2009</li> <li>▪ National Standard Operating Procedure (NaSOP) for Disaster Management</li> <li>▪ Working at heights Regulations (2005)</li> </ul> <p><b>5.1.2 Environmental legislation:</b></p> <ul style="list-style-type: none"> <li>▪ Environment Order 2009</li> </ul>

	<ul style="list-style-type: none"> <li>▪ Environment Protection and Management Order 2015</li> </ul> <p><b>5.1.3 Workplace procedures:</b></p> <ul style="list-style-type: none"> <li>▪ Safety management</li> <li>▪ Environmental management</li> <li>▪ Incident reporting and investigation</li> <li>▪ Proactive intervention</li> </ul>
<p>5.2 UNDERSTAND AND INTERPRET WORKPLACE HEALTH AND SAFETY INFORMATION</p>	<ol style="list-style-type: none"> <li>1. Describe <b>sources of information</b> relevant to workplace safety</li> <li>2. Interpret <b>information</b> relevant to workplace safety</li> </ol> <p><b><u>Range</u></b></p> <p><b>5.2.1 Sources of information:</b></p> <ul style="list-style-type: none"> <li>▪ Location of information</li> <li>▪ Access arrangements</li> </ul> <p><b>5.2.2 Information:</b></p> <ul style="list-style-type: none"> <li>▪ Workplans</li> <li>▪ Organisational/ company policies and procedures</li> <li>▪ Project/ Site safety plan</li> <li>▪ Emergency plan</li> <li>▪ Training manuals</li> <li>▪ Legislation/ regulations/ codes of practice</li> <li>▪ Standard Operating Procedures (S.O.P.)</li> </ul>
<p>5.3 UNDERSTAND PROCEDURES FOR DEALING WITH HEALTH AND SAFETY AND ENVIRONMENTAL SITUATIONS IN THE WORKPLACE</p>	<ol style="list-style-type: none"> <li>1. Differentiate between an ‘accident’ and an ‘incident’.</li> <li>2. Describe the possible <b>consequences</b> of an accident in the workplace</li> <li>3. State the procedures to be followed in the case of accidents involving injury (including first aid)</li> <li>4. Specify <b>appropriate procedures</b> to be followed when emergency situations occur in the workplace</li> <li>5. State the actions to be taken where situations exceed and individual’s level of responsibility for Health and Safety in the workplace</li> <li>6. Specify appropriate <b>responsible persons</b> who Health and Safety matters should be reported to.</li> <li>7. Describe the ways in which the environment may be <b>affected by work activities</b></li> <li>8. Specify the <b>requirements</b> for processing waste from the workplace</li> </ol>

	<p>9. Explain why it is important to report any hazards to the environment that arise from work procedures</p> <p><b><u>Range</u></b></p> <p><b>5.3.2 Consequences</b></p> <ul style="list-style-type: none"> <li>▪ Fatality</li> <li>▪ Temporary disability</li> <li>▪ Permanent disability</li> <li>▪ Minor injury</li> </ul> <p><b>5.3.4 Appropriate procedures:</b></p> <ul style="list-style-type: none"> <li>▪ Procedures for summoning emergency services</li> <li>▪ Information that emergency services require</li> <li>▪ Alarm and evacuation procedures</li> <li>▪ Designated escape routes</li> <li>▪ Firefighting procedures</li> <li>▪ Application of first aid</li> </ul> <p><b>5.3.6 Responsible persons:</b></p> <ul style="list-style-type: none"> <li>▪ Employer</li> <li>▪ Employees</li> <li>▪ Safety Officers</li> <li>▪ Health &amp; Safety Inspectors</li> </ul> <p><b>5.3.7 Affected by work activities:</b></p> <ul style="list-style-type: none"> <li>▪ Land contamination</li> <li>▪ Air pollution</li> <li>▪ Pollution of water courses</li> </ul> <p><b>5.3.8 Requirements:</b></p> <ul style="list-style-type: none"> <li>▪ Recycling</li> <li>▪ Hazardous waste</li> </ul>
<p>5.4 UNDERSTAND THE PROCEDURES FOR ESTABLISHING A SAFE WORKING ENVIRONMENT</p>	<ol style="list-style-type: none"> <li>1. Define what is meant by the term ‘risk’ in relation to Health and Safety in the workplace</li> <li>2. State the procedure for producing risk assessments and method statements</li> <li>3. State the purpose of Personal Protective Equipment (PPE)</li> <li>4. Describe the <b><i>procedures to remove or minimise risks</i></b></li> <li>5. Specify the <b><i>use and maintenance of PPE</i></b> (including full body harness) for work operations</li> </ol>

6. State the first aid facilities that must be available in the work area in accordance with Health and Safety regulations
7. Explain why it is important not to misuse first aid equipment/supplies and to replace first aid supplies once used
8. Describe safe practices and **procedures** for the use of **equipment and materials** in the working environment
9. Explain the importance of behavioural safety and a positive safety culture.
10. Describe **conditions** linked to common occupational health problems

**Range**

**5.4.4 Procedures to remove or minimise risks**

- As Low As Reasonably Practicable (ALARP) principle
- Hazard Identification Risk Assessment (HIRA)
- Hierarchy of control measures
  - Elimination
  - Substitution
  - Engineering Control
  - Administration Control
  - Personal Protective Equipment (PPE)
- Risk management
  - Strategy
  - Identify hazards
  - Assess associated risk
  - Use approved control measures to eliminate/minimise risks
  - Monitor and review control measures

**5.4.5 PPE (use)**

- Footwear
- Head protection
- Hand gloves
- Protective clothing
- Hearing protection
- Eye protection
- Full body harness (fall arrest/fall restraint - including lanyards and inertia reels – covering inspection, wear and usage)

**5.4.5 PPE (maintenance)**

	<ul style="list-style-type: none"> <li>▪ Cleaning and decontamination</li> <li>▪ Correct storage</li> <li>▪ Regular checks for damage</li> <li>▪ Repair/replacement of work malfunction or damaged equipment/parts</li> <li>▪ Disposal of single use equipment</li> </ul> <p><b>5.4.8 Procedures</b></p> <ul style="list-style-type: none"> <li>▪ Qualified persons</li> <li>▪ Safe isolation procedures</li> <li>▪ Permits to work</li> <li>▪ Selection and checking correct plant, power tools, hand tools or equipment</li> <li>▪ Toolbox talks</li> <li>▪ Maintenance and inspection activities</li> <li>▪ Safety Management Systems</li> <li>▪ Safe Systems of Work (SSoW)</li> <li>▪ Shift handover procedures</li> <li>▪ Housekeeping</li> <li>▪ Storage and containment</li> <li>▪ Health surveillance</li> <li>▪ Safe Manual handling techniques</li> </ul> <p><b>5.4.8 Equipment and materials</b></p> <ul style="list-style-type: none"> <li>▪ Access equipment</li> <li>▪ Plant/Machinery</li> <li>▪ Portable power tools</li> <li>▪ Signs and guarding</li> <li>▪ Tools and materials storage facilities</li> <li>▪ Hazardous substances</li> </ul> <p><b>5.4.10 Conditions</b></p> <ul style="list-style-type: none"> <li>▪ Skin disease</li> <li>▪ Cancer</li> <li>▪ Hearing loss</li> <li>▪ Sight impairment</li> <li>▪ Respiratory illness</li> <li>▪ Musculoskeletal disorder</li> <li>▪ Physiological disorder</li> </ul>
5.5 UNDERSTAND THE REQUIREMENTS FOR	1. Identify warning signs for the main groups of hazardous substances.

<p>IDENTIFYING AND DEALING WITH HAZARDS IN THE WORK ENVIRONMENT</p>	<ol style="list-style-type: none"> <li>2. Define what is meant by the term 'hazard' in relation to Health and Safety in the workplace</li> <li>3. Identify main <b>hazard groups</b> associated with work tasks</li> <li>4. Describe <b>general situations</b> which can constitute a hazard in the workplace</li> <li>5. Describe oil, gas and petrochemical <b>specific hazards</b></li> <li>6. Explain practices and procedures for addressing <b>hazards in the workplace</b></li> <li>7. Identify the correct type of fire extinguisher for each particular type of fire</li> <li>8. Explain situations where <b>chemical hazards</b> may be encountered</li> </ol> <p><b><u>Range</u></b></p> <p><b>5.5.3 Hazard groups:</b></p> <ul style="list-style-type: none"> <li>▪ Electric</li> <li>▪ Psychosocial</li> <li>▪ Ergonomic</li> <li>▪ Biological</li> <li>▪ Chemical</li> <li>▪ Physical</li> </ul> <p><b>5.5.4 General situations:</b></p> <ul style="list-style-type: none"> <li>▪ Temporary supplies</li> <li>▪ Trailing leads/hoses</li> <li>▪ Slippery or uneven surfaces</li> <li>▪ Presence of dust, fumes and/or gases</li> <li>▪ Handling and transporting equipment or materials (manual and mechanised handling)</li> <li>▪ Chemical use and storage (including contaminants and irritants)</li> <li>▪ Fire and flame</li> <li>▪ Working at height</li> <li>▪ Excessive noise</li> <li>▪ Vibration</li> <li>▪ Lone working</li> <li>▪ Hazardous malfunctions of equipment</li> <li>▪ Improper use, maintenance and storage of tools and equipment</li> <li>▪ Improper use, maintenance of guarding and machinery</li> </ul>
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**5.5.5 Specific hazards:**

- Explosion
- High pressure release of gas
- Hydrogen Sulphide (H<sub>2</sub>S) creation
- Structural failure
- Adverse weather damage
- Suspended loads on cranes (including man loading)
- Use of helicopters and supply vessels (offshore)
- High pressure systems

**5.5.6 Hazards in the workplace:**

- Trailing leads/hoses
- Slippery or uneven surfaces
- Presence of dust, fumes and/or gases
- Handling and transporting equipment or materials (manual and mechanised handling)
- Chemical use and storage (including contaminants and irritants)
- Fire and flame
- Working at height
- Confined spaces
- Hazardous malfunctions of equipment
- Improper use and storage of tools and equipment
- Radiation
- Lack of guarding on machinery
- Lack/damage emergency stop systems
- Scaffold collapse
- Failure and wear of scaffold components
- Non-qualified operatives
- Falling objects
- Electrocution
- Noise
- Heat stress
- Eye injuries
- Oil, gas and petrochemical specific

**5.5.8 Chemical hazards:**

- Painting and cleaning
- Drilling operations
- Well completion and maintenance
- Hazard freeing

	<ul style="list-style-type: none"> <li>▪ Asbestos lagging</li> <li>▪ Naturally occurring radioactive materials (NORM)</li> </ul>
<p>5.6 UNDERSTAND THE MANAGEMENT OF ASSET SAFETY IN OIL AND GAS / PETROCHEMICAL OPERATIONS</p>	<ol style="list-style-type: none"> <li>1. Define asset integrity and process safety</li> <li>2. List the types of <b>asset integrity</b> in oil and gas/petrochemical operations</li> <li>3. Define <b>safety critical elements</b> of equipment and systems</li> <li>4. Define <b>models and system approaches</b> for risk management and control for safety critical elements</li> <li>5. Describe safe procedures for the isolation of live/charged equipment and overrides</li> <li>6. Define the responsibilities of employers and employees in maintaining asset integrity</li> </ol> <p><b>Range</b></p> <p><b>5.6.2 Asset integrity:</b></p> <ul style="list-style-type: none"> <li>▪ Structural integrity</li> <li>▪ Well integrity</li> <li>▪ Fire and explosion prevention</li> <li>▪ Refuge and evacuation</li> </ul> <p><b>5.6.3 Safety critical elements:</b></p> <ul style="list-style-type: none"> <li>▪ Pressure relief valves</li> <li>▪ Emergency shutdown systems</li> <li>▪ Fire and gas detection systems</li> <li>▪ Fire-fighting equipment</li> </ul> <p><b>5.6.4 Models and system approaches:</b></p> <ul style="list-style-type: none"> <li>▪ Bowtie diagrams</li> <li>▪ Swiss cheese model</li> <li>▪ Hazard Effect Management Plan (HEMP)</li> </ul>
<p>5.7 UNDERSTAND THE HAZARDS ASSOCIATED WITH MECHANICAL LIFTING OPERATIONS</p>	<ol style="list-style-type: none"> <li>1. Define mechanical lifting</li> <li>2. Identify health and safety considerations prior to conducting lifting activities</li> <li>3. Describe <b>types</b> of mechanical lifting equipment</li> <li>4. Describe <b>hazards</b> associated with mechanical lifting</li> <li>5. Define key <b>personnel roles</b> involved with lifting operations</li> <li>6. Define the term Safe Working Load (SWL)</li> </ol> <p><b>Range</b></p> <p><b>5.7.3 Types:</b></p> <ul style="list-style-type: none"> <li>▪ Forklifts</li> <li>▪ Lifting trolleys</li> </ul>



	<ul style="list-style-type: none"> <li>▪ Cranes (fixed and mobile)</li> </ul> <p><b>5.7.4 Hazards:</b></p> <ul style="list-style-type: none"> <li>▪ Load stability</li> <li>▪ Load security</li> <li>▪ Load handling</li> </ul> <p><b>5.7.5 Personnel roles:</b></p> <ul style="list-style-type: none"> <li>▪ Competent lifting person</li> <li>▪ Crane operator</li> <li>▪ Banksman</li> <li>▪ Rigger/slinger</li> </ul>
5.8 UNDERSTAND HOW TO COMPLETE HEALTH AND SAFETY REPORTING IN THE WORKPLACE	<p>1. Describe Health and Safety related <b>monitoring and reporting</b></p> <p><b>Range</b></p> <p><b>5.8.1 Monitoring and reporting:</b></p> <ul style="list-style-type: none"> <li>▪ Formal/ informal</li> <li>▪ Compliant/non-compliant</li> <li>▪ Verbal</li> <li>▪ Written <ul style="list-style-type: none"> <li>○ Safety inspection report</li> <li>○ Safety checklist</li> <li>○ Incident/ Accidental reports</li> </ul> </li> </ul>
5.9 UNDERSTAND HOW TO COMPLETE QUALITY DEFECT REPORTING IN THE WORKPLACE	<p>1. Describe <b>Quality Defect</b> on materials related <b>monitoring and reporting</b></p> <p><b>Range</b></p> <p><b>5.9.1 Quality Defect</b></p> <p><b>5.9.1 Monitoring and reporting:</b></p> <ul style="list-style-type: none"> <li>▪ Compliant/non-compliant</li> <li>▪ Written <ul style="list-style-type: none"> <li>○ Specification</li> <li>○ Inspection report</li> <li>○ Checklist</li> </ul> </li> </ul>

Duty	<b>6. Understand Engineering Science (Understand Engineering Basics)</b>
<b>Competence</b>	<b>Performance Criteria</b>

<p>6.1 UNDERSTAND THE FUNDAMENTAL STATES OF MATTER AND MEASURES RELATING TO THEM</p>	<ol style="list-style-type: none"> <li>1. Define the <b>three states of matter</b></li> <li>2. Define typical <b>properties / measures</b> relating to matter</li> </ol> <p><b><u>Range</u></b></p> <p><b>6.1.1 Three states of matter:</b></p> <ul style="list-style-type: none"> <li>▪ Gas</li> <li>▪ Liquid</li> <li>▪ Solid</li> </ul> <p><b>6.1.2 Properties/measures:</b></p> <ul style="list-style-type: none"> <li>▪ Mass</li> <li>▪ Weight</li> <li>▪ Volume</li> <li>▪ Density</li> <li>▪ Relative density</li> <li>▪ Pressure</li> </ul>
<p>6.2 BE ABLE TO UNDERTAKE ENGINEERING MEASUREMENT AND WORK WITH DERIVED UNITS</p>	<ol style="list-style-type: none"> <li>1. Describe appropriate <b>measuring systems</b> used for work tasks</li> <li>2. Select appropriate <b>measurement instruments / tools</b> used for work tasks</li> <li>3. Perform accurate <b>measurement</b> and readings of engineering objects / materials and processes</li> <li>4. Calculate <b>derived units</b> of measurement</li> </ol> <p><b><u>Range</u></b></p> <p><b>6.2.1 Measuring systems:</b></p> <ul style="list-style-type: none"> <li>▪ Metric (length and mass)</li> <li>▪ Imperial (length and mass)</li> <li>▪ Time (Hours, minutes, seconds, milliseconds)</li> </ul> <p><b>6.2.2 Measurement instruments/tools:</b></p> <ul style="list-style-type: none"> <li>▪ Measuring tape</li> <li>▪ Steel ruler</li> <li>▪ Outside micrometre (0 – 100 mm)</li> <li>▪ Inside micrometre (0 – 100 mm)</li> <li>▪ Vernier calliper (0.05 – 300 mm and/or 1/128” to 12”)</li> <li>▪ Beam balance</li> <li>▪ Stopwatch</li> </ul> <p><b>6.2.3 Measurement:</b></p> <ul style="list-style-type: none"> <li>▪ Length</li> <li>▪ Width/thickness</li> </ul>

	<ul style="list-style-type: none"> <li>▪ Mass</li> <li>▪ Time</li> </ul> <p><b>6.2.4 Derived units:</b></p> <ul style="list-style-type: none"> <li>▪ Volume (cubic metres)</li> <li>▪ Area (square metres)</li> <li>▪ Speed (metres/second)</li> </ul>
<p>6.3 UNDERSTAND THE PRINCIPLES OF FUNDAMENTAL MECHANICS TO SOLVE ENGINEERING TASKS / PROBLEMS</p>	<ol style="list-style-type: none"> <li>1. Define the main <b>terms</b> in the relationship between motion and force</li> <li>2. Describe the principles of linear motion</li> <li>3. Explain the relationship between force, mass and acceleration</li> <li>4. Solve problems on distance-time and velocity-time graphs.</li> <li>5. Define the terms work, energy, efficiency and power and the relationship between them.</li> <li>6. Define <b>types of energy</b></li> <li>7. Describe the transformation of energy and conservation of energy</li> <li>8. Solve problems related to work, energy and power</li> </ol> <p><b><u>Range</u></b></p> <p><b>6.3.1 Main terms:</b></p> <ul style="list-style-type: none"> <li>▪ Distance and displacement</li> <li>▪ Speed</li> <li>▪ Velocity</li> <li>▪ Acceleration</li> <li>▪ Force</li> </ul> <p><b>6.3.6 Types of energy:</b></p> <ul style="list-style-type: none"> <li>▪ Chemical</li> <li>▪ Mechanical</li> <li>▪ Electrical</li> <li>▪ Light</li> <li>▪ Nuclear</li> <li>▪ magnetic</li> </ul>
<p>6.4 UNDERSTAND THE FUNCTION AND OPERATION OF SIMPLE MACHINES</p>	<ol style="list-style-type: none"> <li>1. Describe the function and application of <b>simple machines</b></li> <li>2. Describe the principle and application of friction to machines</li> </ol> <p><b><u>Range</u></b></p> <p><b>6.4.1 Simple machines:</b></p> <ul style="list-style-type: none"> <li>▪ Lever</li> </ul>

	<ul style="list-style-type: none"> <li>▪ Pulley</li> <li>▪ Gear</li> <li>▪ Wheel and axle</li> <li>▪ Inclined plane, screw and wedge</li> </ul>
<p>6.5 UNDERSTAND THE PRINCIPLES AND EFFECTS OF HEAT ENERGY AND TEMPERATURE</p>	<ol style="list-style-type: none"> <li>1. Explain the concept of temperature and heat energy</li> <li>2. Describe the principle of operation of liquid expansion in a glass thermometer</li> <li>3. Undertake accurate temperature measurements using a thermometer</li> <li>4. Describe the concept of <b>linear expansion</b></li> <li>5. Describe types of <b>heat transfer</b></li> <li>6. Interpret temperature-time graphs for substances to define <b>values</b></li> </ol> <p><b><u>Range</u></b></p> <p><b>6.5.4 Linear expansion:</b></p> <ul style="list-style-type: none"> <li>▪ Temperature coefficients</li> <li>▪ effects</li> </ul> <p><b>6.5.5 Heat transfer:</b></p> <ul style="list-style-type: none"> <li>▪ Conduction</li> <li>▪ Convection</li> <li>▪ Radiation</li> </ul> <p><b>6.5.6 Values:</b></p> <ul style="list-style-type: none"> <li>▪ Melting point</li> <li>▪ Boiling point</li> <li>▪ Sensible heat</li> <li>▪ Latent heat</li> </ul>
<p>6.6 UNDERSTAND THE PRINCIPLES OF MAGNETISM AND ELECTRICITY</p>	<ol style="list-style-type: none"> <li>1. Describe the principles of <b>magnetism</b></li> <li>2. Define <b>electrical terms</b></li> <li>3. Describe <b>electrical circuits</b> and their <b>characteristics</b></li> <li>4. Sketch electric circuits using standard <b>electrical symbols</b></li> <li>5. Undertake accurate <b>measurements</b> of current and voltage in D.C. circuits</li> </ol> <p><b><u>Range</u></b></p> <p><b>6.6.1 Magnetism:</b></p> <ul style="list-style-type: none"> <li>▪ Natural magnets</li> <li>▪ Poles</li> <li>▪ Attraction and repulsion</li> <li>▪ Lines of force</li> <li>▪ Magnetic and non-magnetic substances</li> </ul> <p><b>6.6.2 Electrical terms:</b></p>

	<ul style="list-style-type: none"> <li>▪ Potential difference (voltage)</li> <li>▪ Electron flow (current)</li> <li>▪ Resistance</li> </ul> <p><b>6.6.3 Electrical circuits:</b></p> <ul style="list-style-type: none"> <li>▪ Closed circuit</li> <li>▪ Open circuit</li> <li>▪ Short-circuit</li> <li>▪ Series connection</li> <li>▪ Parallel connection</li> </ul> <p><b>6.6.3 Characteristics:</b></p> <ul style="list-style-type: none"> <li>▪ Functionality</li> <li>▪ High current</li> <li>▪ No current</li> <li>▪ Design current</li> <li>▪ Common voltage</li> <li>▪ Common current</li> </ul> <p><b>6.6.4 Electrical symbols:</b></p> <ul style="list-style-type: none"> <li>▪ Battery</li> <li>▪ Lamp</li> <li>▪ Switch</li> <li>▪ Resistor</li> <li>▪ Fuse</li> </ul> <p><b>6.6.5 Measurements:</b></p> <ul style="list-style-type: none"> <li>▪ Using an ammeter</li> <li>▪ Using a voltmeter</li> </ul>
<p>6.7 UNDERSTAND THE DIFFERENCE BETWEEN METALS AND NON-METALS</p>	<ol style="list-style-type: none"> <li>1. Describe the properties of <b>metals</b> and their uses</li> <li>2. Describe the properties of <b>non-metals</b> and their uses</li> </ol> <p><b><u>Range</u></b></p> <p><b>6.7.1 Metals:</b></p> <ul style="list-style-type: none"> <li>▪ Corrosion</li> <li>▪ Corrosion protection</li> <li>▪ Density</li> <li>▪ Strength</li> <li>▪ Conduction of heat</li> <li>▪ Conduction of electricity</li> <li>▪ Magnetic</li> </ul> <p><b>6.7.2 Non-metals:</b></p> <ul style="list-style-type: none"> <li>▪ Deterioration/Degradation</li> <li>▪ Density</li> <li>▪ Strength</li> <li>▪ Conduction of heat</li> </ul>

	<ul style="list-style-type: none"> <li>▪ Conduction of electricity</li> <li>▪ Non-Magnetic</li> </ul>
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Duty	7. Understand Oil and Gas Industry Operation (Brunei)
Competence	Performance Criteria
7.1 UNDERSTAND THE BACKGROUND TO OIL AND GAS PRODUCTION IN BRUNEI	<ol style="list-style-type: none"> <li>1. Outline the history of oil and gas discovery in Brunei including oil and gas milestones</li> <li>2. Identify the roles (including joint ventures) of <b>key stakeholders</b> in the oil and gas industry in Brunei</li> <li>3. Identify the key challenges faced by the Brunei energy sector</li> </ol> <p><b><u>Range</u></b></p> <p><b>7.1.2 Key stakeholders:</b></p> <ul style="list-style-type: none"> <li>▪ Brunei government</li> <li>▪ Oil companies</li> </ul>
7.2 UNDERSTAND THE FORMATION OF OIL AND GAS AND OIL AND GAS EXPLORATION	<ol style="list-style-type: none"> <li>1. Describe with the aid of diagrams the <b>formation</b> of oil and gas</li> <li>2. Describe the composition of crude oil and gas</li> </ol> <p><b><u>Range</u></b></p> <p><b>7.2.1 Formation:</b></p> <ul style="list-style-type: none"> <li>▪ Organic decay</li> <li>▪ Hydrocarbons</li> <li>▪ Sedimentary basins</li> <li>▪ Crude oil depth</li> <li>▪ Gas depth</li> <li>▪ Types of oil and gas</li> </ul>
7.3 UNDERSTAND THE LIFECYCLES OF OIL AND GAS FIELDS	<ol style="list-style-type: none"> <li>1. Explain the difference between ‘upstream’ and ‘downstream’ in oil and gas extraction and processing</li> <li>2. Explain with the aid of diagrams the <b>phases</b> of oil and gas field lifecycles</li> <li>3. Identify the roles of <b>key personnel</b> involved with oil and gas field operations</li> <li>4. Describe with the aid of diagrams the geology elements of a <b>petroleum system</b></li> <li>5. Describe with the aid of diagrams oil and gas <b>drilling processes</b></li> <li>6. Describe the elements of a <b>‘field development plan’</b></li> <li>7. Explain the considerations for operation and maintenance of an oil and gas production process</li> </ol> <p><b><u>Range</u></b></p> <p><b>7.3.2 Phases:</b></p> <ul style="list-style-type: none"> <li>▪ Exploration</li> </ul>

	<ul style="list-style-type: none"><li>▪ Appraisal (including logging and coring)</li><li>▪ Development</li><li>▪ Production</li><li>▪ Abandonment</li></ul> <p><b>7.3.3 Key personnel:</b></p> <ul style="list-style-type: none"><li>▪ Geophysicist</li><li>▪ Geologist</li><li>▪ Petro-physicist</li><li>▪ Reservoir engineer</li><li>▪ Production technologist</li><li>▪ Well engineer</li><li>▪ Operators</li></ul> <p><b>7.3.4 Petroleum system:</b></p> <ul style="list-style-type: none"><li>▪ Source rock</li><li>▪ Reservoir rock (Types and their development)</li><li>▪ Seal rock</li><li>▪ Trap</li><li>▪ Migration</li><li>▪ Overburden</li></ul> <p><b>7.3.5 Drilling processes:</b></p> <ul style="list-style-type: none"><li>▪ Offshore</li><li>▪ Onshore</li></ul> <p><b>7.3.6 Field development plan:</b></p> <ul style="list-style-type: none"><li>▪ Costing</li><li>▪ Platform design</li><li>▪ Plant design</li></ul>
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## 2.2 SPECIALISED

Duty	1. Apply Health, Safety and Environment including Quality Practice for Rigging in The Oil and Gas Industry	
Competence		Performance Criteria
<p>1.1 BE ABLE TO APPLY RELEVANT HEALTH AND SAFETY LEGISLATION AND PROCEDURES THAT RELATE TO THE WORKPLACE</p>	<ol style="list-style-type: none"> <li>1. Comply with relevant workplace Health and Safety including quality procedures and obligations as defined by:               <ol style="list-style-type: none"> <li>a. <i>current legislation</i></li> <li>b. <i>organisational procedures</i></li> </ol> </li> <li>2. Work within Health and Safety, quality <i>requirements</i></li> <li>3. Apply procedures to ensure the safe use, maintenance, preservation and storage of materials (including chemicals), tools, plant / machinery and equipment as defined by relevant <i>documentation</i> including material preservation requirements</li> <li>4. Comply with relevant <i>signage</i></li> <li>5. Apply procedures to ensure safety in the workplace by the correct use of PPE, guards, interlocks, barriers and notices</li> <li>6. Use access equipment correctly</li> <li>7. Demonstrate the use of <i>PPE</i> and <i>full body harness</i></li> <li>8. Demonstrate <i>safe manual and ergonomic handling techniques</i></li> </ol> <p><b><u>Range</u></b></p> <p><b>1.1.1 Current legislation:</b></p> <ul style="list-style-type: none"> <li>▪ Workplace Safety and Health Order 2009</li> <li>▪ Workplace Safety and Health Regulations 2014</li> <li>▪ Fire Safety Order 2016</li> <li>▪ Employment Order 2009</li> <li>▪ National Standard Operating Procedure (NaSOP) for Disaster Management</li> </ul> <p><b>1.1.1 Organisational procedures:</b></p> <ul style="list-style-type: none"> <li>▪ Safety rules and arrangements</li> <li>▪ Work management procedures</li> <li>▪ Waste management procedures</li> </ul> <p><b>1.1.2 Requirements:</b></p> <ul style="list-style-type: none"> <li>▪ Risk assessments</li> <li>▪ Method Statements</li> <li>▪ Safe Systems of Work</li> <li>▪ Permits to Work</li> </ul>	



	<p><b>1.1.3 Documentation</b></p> <ul style="list-style-type: none"> <li>▪ Organisational policy</li> <li>▪ Supplier information</li> <li>▪ Manufacturer’s instructions/data sheets</li> </ul> <p><b>1.1.4 Signage</b></p> <ul style="list-style-type: none"> <li>▪ Information</li> <li>▪ Warning</li> <li>▪ Prohibition</li> <li>▪ Mandatory instruction</li> </ul> <p><b>1.1.7 PPE (use)</b></p> <ul style="list-style-type: none"> <li>▪ Footwear</li> <li>▪ Head protection</li> <li>▪ Hand gloves</li> <li>▪ Protective clothing</li> <li>▪ Hearing protection</li> <li>▪ Eye protection</li> <li>▪ Full body harness (fall arrest/fall restraint - including lanyards and inertia reels)</li> </ul> <p><b>1.1.7 Full body harness:</b></p> <ul style="list-style-type: none"> <li>▪ Visual inspection of full body harness before work starts <ul style="list-style-type: none"> <li>○ Report faults to supervisor</li> <li>○ Replace faulty with new before starting work</li> </ul> </li> <li>▪ Put on and wear correctly</li> <li>▪ Use correctly to include: <ul style="list-style-type: none"> <li>○ Implementation of hook point</li> </ul> </li> <li>▪ How to ensure 100% tie – off</li> </ul> <p><b>1.1.7 Safe manual and ergonomic handling techniques:</b></p> <ul style="list-style-type: none"> <li>▪ Moving</li> <li>▪ Lifting/carrying</li> <li>▪ Using hand tools</li> <li>▪ Loading and unloading</li> <li>▪ Bending and twisting</li> <li>▪ Stacking</li> </ul>
<p>1.2 BE ABLE TO ASSESS THE WORKPLACE FOR HAZARDS AND IDENTIFY REMEDIAL ACTIONS IN</p>	<ol style="list-style-type: none"> <li>1. Identify unsafe situations / conditions and take remedial actions</li> <li>2. Assess the workplace and revise work practices to account for <b>hazards</b> that could cause harm</li> </ol>

<p>ACCORDANCE WITH HEALTH AND SAFETY LEGISLATION AND POLICY</p>	<p>3. Undertake health and safety monitoring and <b>reporting</b></p> <p><b><u>Range</u></b></p> <p><b>1.2.1 Hazards</b></p> <ul style="list-style-type: none"> <li>▪ Material hazards (including chemical)</li> <li>▪ Tool hazards</li> <li>▪ Equipment hazards</li> <li>▪ Machinery/plant hazards</li> </ul> <p><b>1.2.3 Monitoring and reporting:</b></p> <ul style="list-style-type: none"> <li>▪ Formal/ informal</li> <li>▪ Compliant/non-compliant</li> <li>▪ Verbal</li> <li>▪ Written <ul style="list-style-type: none"> <li>○ Safety inspection report</li> <li>○ Safety checklist</li> <li>○ Incident/ Accidental reports</li> </ul> </li> </ul>
<p>1.3 BE ABLE TO APPLY RELEVANT ENVIRONMENTAL LEGISLATION AND PROCEDURES THAT RELATE TO THE WORKPLACE</p>	<p>1. Comply with relevant workplace Environmental procedures and obligations as defined by current <b>legislation</b> and procedures</p> <p><b><u>Range</u></b></p> <p><b>1.3.1 Current legislation:</b></p> <ul style="list-style-type: none"> <li>▪ Environment Order 2009</li> <li>▪ Environment Protection and Management Order 2015</li> </ul>
<p>1.4 BE ABLE TO ASSESS THE MATERIALS FOR DEFECT AND IDENTIFY REMEDIAL ACTIONS</p>	<p>1. Undertake <b>Quality Defect monitoring and reporting</b></p> <p><b><u>Range</u></b></p> <p><b>1.4.1 Quality Defect</b></p> <p><b>1.4.1 Monitoring and reporting:</b></p> <ul style="list-style-type: none"> <li>▪ Compliant/non-compliant</li> <li>▪ Written <ul style="list-style-type: none"> <li>○ Specification</li> <li>○ inspection report</li> <li>○ Checklist</li> </ul> </li> </ul>

Duty	2. Introduction to Rigging and Lifting
Competence	Performance Criteria

<p>2.1 UNDERSTAND THE ROLES AND RESPONSIBILITIES OF RIGGING AND LIFTING PERSONNEL</p>	<ol style="list-style-type: none"> <li>1. Explain the roles and responsibilities of <b>personnel</b> involved in rigging and lifting operations</li> <li>2. Describe typical reporting structures for rigging and lifting operations</li> </ol> <p><b><u>Range</u></b>  <b>2.1.1 Personnel:</b></p> <ul style="list-style-type: none"> <li>▪ Rigger</li> <li>▪ Employer</li> <li>▪ Person in Charge (PIC)</li> <li>▪ Competent Person (Lift Planner)</li> <li>▪ Rigging/Lifting Supervisor</li> <li>▪ Competent Authorised Person (Lifting Equipment Focal Point)</li> <li>▪ Slinger</li> <li>▪ Banksman</li> <li>▪ Crane Operator</li> </ul>
<p>2.2 UNDERSTAND LEGISLATION AND REGULATIONS THAT APPLY TO RIGGING AND LIFTING OPERATIONS</p>	<ol style="list-style-type: none"> <li>1. Describe the main Health and Safety legislation that applies to rigging and lifting operations</li> <li>2. Describe relevant <b>international legislation</b> that relates to lifting operations</li> </ol> <p><b><u>Range</u></b>  <b>2.2.2 International legislation:</b></p> <ul style="list-style-type: none"> <li>▪ Lifting Operations and Lifting Equipment Regulations (LOLER)</li> <li>▪ Provision and Use of Work Equipment regulations (PUWER)</li> </ul>
<p>2.3 UNDERSTAND TERMINOLOGY AND EQUIPMENT USED IN RIGGING AND LIFTING OPERATIONS</p>	<ol style="list-style-type: none"> <li>1. Explain the meaning and usage of common rigging and lifting <b>terminology</b></li> <li>2. Describe the application and use of <b>plant and appliances</b> for lifting operations</li> <li>3. Describe the use of common <b>lift accessories</b> and the factors affecting their selection</li> <li>4. Describe <b>fall safety systems</b> used in rigging and lifting operations</li> </ol> <p><b><u>Range</u></b>  <b>2.3.1 Terminology:</b></p> <ul style="list-style-type: none"> <li>▪ Working Load Limit (WLL)</li> </ul>

	<ul style="list-style-type: none"> <li>▪ Safe Working Load (SWL)</li> <li>▪ Rated capacity/Safe Loading Load (SLL)</li> <li>▪ Centre of Gravity (CoG)</li> <li>▪ Lift Plan</li> <li>▪ Cross-hauling</li> <li>▪ Manual handling</li> </ul> <p><b>2.3.2 Plant and appliances:</b></p> <ul style="list-style-type: none"> <li>▪ Cranes (mobile, fixed)</li> <li>▪ Winches</li> <li>▪ Chain Blocks</li> <li>▪ Hoists (Powered, manual-lever)</li> <li>▪ Tirfors</li> <li>▪ Forklifts</li> </ul> <p><b>2.3.3 Lift accessories:</b></p> <ul style="list-style-type: none"> <li>▪ Ropes</li> <li>▪ Eye bolts</li> <li>▪ Shackles</li> <li>▪ Winches</li> <li>▪ Slings (wire rope, chain and synthetic)</li> <li>▪ Sling master links/rings</li> <li>▪ Chains</li> <li>▪ Lifting beams/spreader bars</li> <li>▪ Beam clamps</li> <li>▪ Beam grabs</li> <li>▪ Snatch blocks</li> <li>▪ Turnbuckle/rigging screw</li> <li>▪ Swivel/hook</li> <li>▪ Pipe rack</li> <li>▪ Cargo netting</li> </ul> <p><b>2.3.4 Fall safety systems:</b></p> <ul style="list-style-type: none"> <li>▪ Fall protection</li> <li>▪ Fall arrest</li> <li>▪ Fall containment</li> </ul>
<p>2.4 UNDERSTAND FUNDAMENTAL PRACTICES AND PRINCIPLES OF LIFTING AND RIGGING</p>	<ol style="list-style-type: none"> <li>1. Describe methods used to move loads</li> <li>2. Describe slinging methods in relation to their use for different loads</li> <li>3. Explain sling angles and arrangements when lifting suspended loads</li> <li>4. Calculate <b>lifting operational values</b> for loads and equipment load weights and sling angle factors</li> </ol>

5. Describe the use of rigging and lifting points for loads
6. Describe the common types of ***knots, hitches and lashings*** used in rigging and their applications.
7. Demonstrate the correct tying of ***knots, hitches and lashings***
8. Describe ***communication methods*** and protocols used in rigging and lifting operations
9. Explain load characteristics that can affect the ***complexity*** of lifting operations.
10. Describe factors that can change during lifting operations

**Range**

**2.4.4 Lifting operational values:**

- Load weights
- Sling angle factors
- SWL (hitches)
- WLL (ropes)

**2.4.6 Knots, hitches and lashings:**

- Bowline
- Sheet bend
- Clove hitch
- Rolling hitch

**2.4.7 Knots, hitches and lashings:**

- Bowline
- Sheet bend
- Clove hitch
- Rolling hitch

**2.4.8 Communication methods:**

- Verbal
- Hand-signal
- Radio

**2.4.9 Complexity:**

- Large size
- Uneven weight distribution

	<ul style="list-style-type: none"> <li>▪ Fragility</li> <li>▪ Access arrangements for lifting points</li> <li>▪ Dynamic loading</li> </ul>
<p>2.5 UNDERSTAND INSPECTION AND MAINTENANCE REQUIREMENTS FOR LIFTING EQUIPMENT</p>	<ol style="list-style-type: none"> <li>1. Explain the purpose of inspection and examination of lifting equipment, tools and accessories before use</li> <li>2. Describe the types of <b>inspection and examination</b> used for lifting equipment, tools and accessories</li> <li>3. Describe <b>maintenance and storage</b> requirements for lifting equipment, tools and accessories to ensure ongoing safe usage</li> <li>4. Describe the methods of <b>identification</b> for lift equipment suitability for use</li> <li>5. Describe classification and segregation systems for tools and equipment</li> </ol> <p><b>Range</b></p> <p><b>2.5.2 Inspection and examination:</b></p> <ul style="list-style-type: none"> <li>▪ Visual Inspection (Damage, wear and tear, breakage, fractures, damaged threads)</li> <li>▪ Scheduled (Periodic/Preventative examination and inspection)</li> <li>▪ Functional inspection/testing (operating controls, emergency controls, safety switches, interlocks)</li> <li>▪ Inspection records</li> <li>▪ Calibrated measurements and checks</li> </ul> <p><b>2.5.3 Maintenance and storage:</b></p> <ul style="list-style-type: none"> <li>▪ Lubrication</li> <li>▪ Suitable environment</li> <li>▪ Using inventory-based classification</li> <li>▪ Maintenance programmes</li> <li>▪ Calibration/testing</li> <li>▪ Repair and replacement</li> </ul> <p><b>2.5.4 Identification:</b></p> <ul style="list-style-type: none"> <li>▪ Colour coding</li> <li>▪ Identification tags</li> <li>▪ Certification</li> </ul>

Duty	3. Preparation for Lifting Operations
Competence	Performance Criteria

<p>3.1 UNDERSTAND THE PROCESSES AND PROCEDURES THAT SUPPORT LIFT PLANNING PREPARATION FOR LIFTING OPERATIONS</p>	<ol style="list-style-type: none"> <li>1. Identify typical <b>hazards</b> associated with lifting operations</li> <li>2. Describe what control-of-work documents are and how they apply to lifting operations</li> <li>3. Describe common <b>categories of lift</b> and their purpose in lift planning</li> <li>4. Explain methods for determining the CoG and total hook load</li> <li>5. Describe methods to establish load-bearing capabilities of <b>areas</b> involved with lifting operations.</li> <li>6. Explain <b>considerations for personnel</b> during lifting operations</li> <li>7. Explain the benefit of ‘trial lifts’</li> <li>8. Describe <b>emergency response procedures</b> for lifting operations</li> <li>9. Describe hazards affecting crane lifting operations and their associated safety considerations</li> <li>10. Describe safety procedures associated with lifting operations using cranes</li> </ol> <p><b><u>Range</u></b></p> <p><b>3.1.1 Hazards:</b></p> <ul style="list-style-type: none"> <li>▪ Movement of personnel</li> <li>▪ Blindspots</li> <li>▪ Site conditions (surface conditions, traffic etc)</li> <li>▪ Work activities</li> <li>▪ Weather conditions</li> <li>▪ Overhead obstacles</li> <li>▪ Obstacles to be lifted over</li> <li>▪ Defective/damage equipment and plant</li> <li>▪ Falling objects</li> <li>▪ Complexity of lift</li> </ul> <p><b>3.1.3 Categories of lift:</b></p> <ul style="list-style-type: none"> <li>▪ Routine (simple)</li> <li>▪ Non-routine (simple, complicated, complex/critical)</li> </ul> <p><b>3.1.5 Areas:</b></p> <ul style="list-style-type: none"> <li>▪ Structures</li> <li>▪ Lay-down locations</li> </ul> <p><b>3.1.6 Considerations for personnel:</b></p> <ul style="list-style-type: none"> <li>▪ Safe positioning during lifting operations</li> <li>▪ Informing all relevant parties of proposed activities</li> <li>▪ The establishment of defined escape routes</li> </ul>
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	<p><b>3.1.8 Emergency response procedures:</b></p> <ul style="list-style-type: none"> <li>▪ Reporting actions</li> <li>▪ Nominated personnel</li> <li>▪ Machine/plant shut-down procedures (standard operating procedures (SoP))</li> <li>▪ Machine/plant isolation and verification isolation is complete</li> </ul>
<p>3.2 UNDERSTAND THE PURPOSE AND CONTENT OF A LIFT PLAN FOR LIFTING OPERATIONS</p>	<ol style="list-style-type: none"> <li>1. Explain the purpose of a lift plan</li> <li>2. Define personnel responsible for lift planning</li> <li>3. Define common <b>elements</b> considered and included in a lift plan</li> </ol> <p><b>Range</b></p> <p><b>3.2.3 Elements:</b></p> <ul style="list-style-type: none"> <li>▪ Assessment of the task (load rigging/handling, load maneuvering, load stability, pick-up and set-down arrangements)</li> <li>▪ Load information (weight, size, CoG)</li> <li>▪ Operator competence/qualifications</li> <li>▪ Visual inspection of site and equipment</li> <li>▪ Verification of lifting equipment inspection/certification</li> <li>▪ Confirmation of lifting capacities</li> <li>▪ Environmental conditions</li> <li>▪ Job Hazard Analysis (JHA)</li> <li>▪ Communication methods</li> </ul>

Duty	4. Conduct Rigging Operations Under Supervision
Competence	Performance Criteria
<p>4.1 UNDERSTAND HOW TO ACCESS AND INTERPRET INFORMATION RELATED TO SAFE LIFTING OPERATIONS</p>	<ol style="list-style-type: none"> <li>1. Access and extract <b>information</b> associated with completing rigging / lifting operations</li> <li>2. Describe workplace procedures for reporting incorrect / unsuitable information related to lifting operations</li> <li>3. Describe workplace procedures for the security of lifting / rigging tools and equipment</li> <li>4. Describe how to protect lifting / rigging tools and equipment from <b>damage and associated hazards</b></li> </ol> <p><b>Range</b></p> <p><b>4.1.1 Information:</b></p> <ul style="list-style-type: none"> <li>▪ Drawings and sketches</li> <li>▪ Specifications</li> <li>▪ Schedules</li> <li>▪ Method statements</li> <li>▪ Risk assessments</li> </ul>



	<ul style="list-style-type: none"> <li>▪ Manufacturers' technical information</li> <li>▪ Regulations and official guidance associated with lifting operations</li> </ul> <p><b>4.1.4 Damage and associated hazards:</b></p> <ul style="list-style-type: none"> <li>▪ Work activities</li> <li>▪ Adverse weather</li> <li>▪ Site conditions (ground, traffic etc)</li> </ul>
<p>4.2 BE ABLE TO CONDUCT RIGGING ACTIVITIES FOR LIFTING OPERATIONS UNDER FULL COMPETENT PERSON SUPERVISION</p>	<ol style="list-style-type: none"> <li>1. Undertake rigging activities for lifting operations conforming to defined lift plans.</li> <li>2. Select appropriate lifting equipment and accessories in accordance with the defined lift planning</li> <li>3. Carry out pre-use visual inspection of rigging equipment and location for lifting operations</li> <li>4. Complete operational checks and functionality tests of communication equipment.</li> <li>5. Complete appropriate <b>installation and positioning</b> of lifting equipment prior to lift operations</li> <li>6. Demonstrate appropriate <b>communication methods</b> with personnel involved in lifting operations</li> <li>7. Demonstrate correct procedures for cross-hauling of loads</li> <li>8. Demonstrate correct <b>moving of loads</b> following identified <b>load paths</b></li> <li>9. Demonstrate safe methods for disconnection of lifting equipment from loads upon completion of lifting operations</li> <li>10. Carry out post-lift inspection of rigging equipment upon completion of lifting operations</li> </ol> <p><b><u>Range</u></b></p> <p><b>4.2.5 Installation and positioning:</b></p> <ul style="list-style-type: none"> <li>▪ Balanced loads</li> <li>▪ Unbalanced loads (offset CoG)</li> <li>▪ Using equipment/accessories</li> <li>▪ Using knots, lashings and hitches</li> </ul> <p><b>4.2.6 Communication methods:</b></p> <ul style="list-style-type: none"> <li>▪ Verbal</li> <li>▪ Hand-signal</li> <li>▪ Radio</li> </ul> <p><b>4.2.8 Moving:</b></p> <ul style="list-style-type: none"> <li>▪ Inching-up</li> <li>▪ Lifting (with load stability)</li> <li>▪ Moving</li> <li>▪ Lowering</li> </ul>

	<ul style="list-style-type: none"> <li>▪ Landing</li> </ul> <p><b>4.2.8 Loads:</b></p> <ul style="list-style-type: none"> <li>▪ Balanced loads</li> <li>▪ Unbalanced loads (offset CoG)</li> </ul> <p><b>4.2.8 Load paths:</b></p> <ul style="list-style-type: none"> <li>▪ Restricted access</li> <li>▪ Unrestricted access</li> <li>▪ At minimum height over obstacles</li> </ul>
<p>4.3 BE ABLE TO COMPLETE POST-LIFTING OPERATION ACTIVITIES AND DOCUMENTATION UNDER FULL COMPETENT PERSON SUPERVISION</p>	<ol style="list-style-type: none"> <li>1. Explain appropriate procedures and documentation required where the load is damaged</li> <li>2. Complete appropriate lifting operation hand-over procedures and documentation</li> <li>3. Carry out reinstatement of the work area after lifting operation are complete in accordance with company and environmental policies</li> <li>4. Complete equipment and tool post-use maintenance and locate equipment in an appropriate defined storage location in accordance with company policies</li> </ol>

## PART 3                    TRAINING STANDARDS

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### 1. CURRICULUM DESIGN

The design of the curriculum needs to be based from the competency standards.

### 2. TRAINING DELIVERY

#### 1. CLASS SIZE (RATIO: TRAINER VS TRAINEES)

- Ratio: Trainer vs. Trainees, Classroom and Practical
- Classroom (Theory) – 1 Trainer : 16 Trainees
- Practical – 1 Trainer : 8 Trainees

#### 2. COURSE CONTENT

- 70% Practical, 30% Theory

#### 3. EVALUATION

- Competence based assessment on Practical of Synoptics Assessment only (Competent & Not yet competent)
- Evaluation of competence is based on %. 80% is the minimum passing as competent

#### 4. ASSESSMENT

- Assessment will be conducted by an assessment team comprising 1 assessor from RTO (where applicable), 1 independent external assessor from the industry and 1 verifier from the awarding body.
- The assessment team will be led by the independent external assessor.

### 3. TRAINING HOURS

The minimum nominal training hours is 500.

### 4. TRAINERS QUALIFICATION

Training provider staff who tutor Rigging Level 2 qualification must:

- Have a valid certificate of competence with respect to the training they are conducting with at least 3 years' extensive and relevant work experience in that field or activity as qualified trainer;
- Be minimum Person-in-Charge (PIC) and able to do pre-inspection for the training materials;
- Have a valid recognised training or teaching qualification (i.e. Certificate of teaching, Train the Trainer, etc.);
- Have a valid HSE-related training certificate or equivalent experience where relevant;
- Be included within the training Organisation's training development plan or training matrix for trainers to maintain trainer competency;

- Awareness concerning the provisions of the of the Workplace Safety and Health Order, 2009 and its regulations;
- No Conflict of Interest (COI);
- Not allowed to internally certify their own Trainers.

## 5. ASSESSORS QUALIFICATION

Specifically, assessors must:

- Minimum of 3 years as an assessor or equivalent;
- Hold an industry's recognised national assessor's award/ qualification and be a discipline expert in the areas being assessed;
- Should have a minimum qualifications and hands on experience of a training instructor/trainer;
- Training course instructor/trainer should NOT be the assessor/ verifier for the same training course being undertaken;
- NOTES:
  - Recognition of Prior Learning/Achievement will be considered;
  - Verifier is a process verifier within the training organization or a third-party verifier.

## 6. TOOLS, EQUIPMENT AND CONSUMABLES (MATERIALS)

All training providers are also required to provide at their training premises (including classrooms and practice grounds) facilities and equipment which must be maintained to a required standard and in full compliance with applicable laws of Brunei Darussalam and where appropriate, equipment should be routinely tested and inspected in accordance with applicable legislation and standards. This is to ensure that all training premises, facilities and equipment are safe and fit for purpose with suitable levels of hygiene in place\*

\*Training Standards 1-8: Aligned Requirements amongst SHENA, IBTE and MOE

TOOLS		EQUIPMENT		MATERIAL	
Description	Min. Qty	Description	Min. Qty	Description	Min. Qty
Sample of Tool Box Talk (TBT)	16 units	Mobile Crane Min. capacity 25Tonnes ( <i>Must comply to SHENA</i> )	1 unit	Reference	1 unit
Sample of Permit to Work (PTW)	16 units	Laptop ( <i>For Trainer</i> )	1 unit	Books	16 units
Risk Analysis Forms	16 units	Projector	1 unit	Manuals	16 units
Sample of Routine Lifting Plan	16 units	Load: Irregular Shape Load Min. capacity 3Tonnes (Centre of Gravity is not in the centre, lifting point is more than 4 lifting points)	1 unit	Catalogues	16 units

Sample of Simple Lifting Plan	16 units	Load: Tubular Load (Min. capacity 6m / 20ft Piping, same diameter)	1 unit	Brochure	16 units
Sample of Complicated Lifting Plan	16 units	Load: Bundle Tubular (with different sizes of diameter)	3 units	Modules/Les	16 units
Pre-course Assessment Paper	16 units	A Frame as lifting equipment (Min. capacity 5Tonnes)	1 unit	CD	1 pc
Assessment Paper	16 units	Obstruction for cross hauling with chain block (Load being transferred from point A to point B through obstruction)	1 unit	Calculator	16 pcs
Attendance sheet	1 unit	T-Card system	1 unit	Ruler	16 pcs
Pre-Use Inspection Checklist	16 units	Good Lifting Equipment: Chain Block (Min. capacity 3Tonnes, angular chain block, comply to BSEN13157 / ASMEB30.16)	2 units	Pen and Pencils Set	16 sets
Sample of Certificate of Conformance of Equipment (as per EC Machinery Directive 2006)	16 units	Good Lifting Equipment: Lever Hoist (Min. capacity 3Tonnes, comply to BSEN13157 / ASMEB30.16)	2 units	Millimetre Block Paper	16 units
Sample of Inspection Certificates	16 units	Good Lifting Equipment: Tirfor (Min. capacity 3Tonnes, Tirfor comply to BSEN12385)	2 units	Signage (comes as a set)	1 unit
Sample of Colour coding Tag	16 pcs	Rejected Lifting Equipment: Chain Block (Min. capacity 3Tonnes, angular chain block) Due to the certificate and due to damage to the equipment	2 units	Barrication tape	1 roll
		Rejected Lifting Equipment: Lever Hoist (Min. capacity 3Tonnes) Due to the certificate and due to damage to the equipment	2 units		
		Rejected Lifting Equipment: Tirfor (Min. capacity 3Tonnes) Due to the	2 units		

		certificate and due to damage to the equipment			
		Good Lifting Accessories: Beam Clamp (Min. capacity 4Tonnes, Comply to BSEN13155)	2 units		
		Good Lifting Accessories: Shackles (Min. capacity 3Tonnes, Comply BSEN13889 / ASMEB30.26)	2 units		
		Good Lifting Accessories: Eyebolts (Min. capacity 2Tonnes, Comply to BSENISO3266)	2 units		
		Good Lifting Accessories: Turnbuckle (Min. capacity 2Tonnes, Comply to BS4429 / ASMEB30.26)	2 units		
		Good Lifting Accessories: Wire Rope Sling (Min. capacity 3Tonnes, Comply to BSEN13414 / ASMEB30.9)	2 units		
		Good Lifting Accessories: Webbing Sling (Min. capacity 3Tonnes, Comply to BSEN1492 / ASMEB30.26)	2 units		
		Good Lifting Accessories: Chain Sling (Min. capacity 3Tonnes, Comply to BSEN818 / ASMEB30.9)	2 units		
		Good Lifting Accessories: Round Sling (Min. capacity 3Tonnes, Comply to BSEN1492 / ASMEB30.26)	2 units		
		Rejected Lifting Accessories: Beam Clamp (Due to certification and due to damage to the equipment)	2 units		
		Rejected Lifting Accessories: Shackles (Due to certification and due to damage to the equipment)	2 units		
		Rejected Lifting Accessories: Eyebolts (Due	2 units		

		to certification and due to damage to the equipment)			
		Rejected Lifting Accessories: Turnbuckle (Due to certification and due to damage to the equipment)	2 units		
		Rejected Lifting Accessories: Wire Rope Sling (Due to certification and due to damage to the equipment)	2 units		
		Rejected Lifting Accessories: Webbing Sling (Due to certification and due to damage to the equipment)	2 units		
		Rejected Lifting Accessories: Chain Sling (Due to certification and due to damage to the equipment)	2 units		
		Rejected Lifting Accessories: Round Sling (Due to certification and due to damage to the equipment)	2 units		
		Good Lifting Point: Pad Eye (Min. capacity 1Tonne, comply to DNVGLSTN001 / ISO19902)	2 units		
		Good Lifting Point Pad ear (Min. capacity 1Tonne, comply to DNVGLSTN001/ISO19902)	2 units		
		Good Lifting Point: Trunnion (Min. capacity 1Tonne, comply to DNVGLSTN001 / ISO19902)	2 units		
		Rejected Lifting Point: Pad Eye (Due to certification and due to damage to the equipment)	2 units		
		Rejected Lifting Point: Pad ear (Due to certification and due to damage to the equipment)	2 units		

		Rejected Lifting Point: Trunnion (Due to certification and due to damage to the equipment)	2 units		
		Good spreader bar (Min. capacity 5Tonnes, comply to BSEN13155 / ASMEB30.20)	1 unit		
		Rejected spreader bar	1 unit		

## 7. PERSONAL PROTECTIVE EQUIPMENT (PPE)

Where required, the personal protective equipment (PPE) requirements shall be ascertained and to ensure that each candidate is provided with the same for the duration of the training course. The PPE shall be applicable for the type of course, of suitable standard and be well maintained at all times.

PPE		
Description	Qty	Standards and Specifications
Safety Shoes with lace-up	16 pairs	BS EN ISO 20345:2011; AS/NZS 2210; ASTM F2413:2011
Safety glasses	16 pairs	BS EN 166:2002; AS/NZS 1337:2010; ANSI Z87.1-2015
Safety Helmet with Chin Strap (6 month before exp. date)	16 pcs	EN 397:2012; AS/NZS 1801:1997; ANSI/ISEA Z89.1-2014 (Class C)
Inherent Flame Retardant Coverall	2 x 16 pcs	EN ISO 11612; BS 1547
Impact resistance gloves	16 pairs	BS EN 420:2009; BS EN 388:2003; AS/NZS 2161; ANSI/ISEA 105:2016
High Visibility Vest for PIC and Banksman	2 pcs	BS EN ISO 20471:2013; AS/NZS 460; ANSI/ISEA 107:2015; EN ISO 14116
Ear Plug or Ear Muff	16 pairs	EN 352-2:2002; AS/NZS 1270:2002; ANSI/ASA S12.6:2016



## 8. TRAINING FACILITIES

- Classroom
  - Size : minimum 27m sq.
  
- Workshop and training grounds
  - Size : where workshop and training grounds minimum size or area is specified;
  - Proper signages.
  
- Basic amenities
  - Basic necessities (not limited to. *surau (male and female) toilet (male and female), resting areas, male and female changing room, first aid, etc.) must be provided;*

<b>NO. OF TRAINEES:</b>	16	
<b>REQUIREMENT SIZE IN:</b>	<b>MIN. SIZE IN METERS (M)</b>	<b>MIN. REQUIREMENT SIZE IN SQ. METERS</b>
Building (Permanent)	As approved by ABCi	As approved by ABCi
Trainee working space	28 x 14	392
Store room	3 x 2.5	7.5
Class Room	-	27
Rigging Loft / Store (Min:10 ft container)	3 x 2.5	7.5
<b>GRAND TOTAL IN SQ. METERS:</b>	<b>434</b>	

**A****ASSESSOR**

accredited individual authorized to evaluate or assess competencies of a candidate applying for certification.

**D****DUTY**

the tasks to be performed by an individual as a regular part of the individual's job.

**I****INSTITUTIONAL ASSESSMENT**

an assessment undertaken by the institution for its trainees to determine their achievement of the learning outcomes in the module of instructions in given unit of competency or clusters of competencies.

**L****LEARNING OUTCOMES**

the set of knowledge, skills and/or competencies an individual has acquired and/or is able to demonstrate after completion of a learning process, either formal, non-formal or informal.

**O****OCCUPATION**

a set of jobs whose main tasks and duties are characterized by a high degree of similarity.

**P**

## **PERFORMANCE CRITERIA**

evaluative statements that specify what is to be assessed and the required level of performance or competency.

## **R**

## **RECOGNITION OF PRIOR LEARNING (RPL)**

the process in which the individual's previous learning outside the formal system which contributes to the achievement of current competency/ies can be assessed against the relevant unit of competency and given recognition through the issuance of appropriate certificate.

## **T**

## **TASK**

a discrete, assignable unit of work that has an identifiable beginning and end, containing two or more steps which when performed, leads to a product, service or decision. This is normally performed within a specified period of time.

## **TRAINING STANDARDS**

the information and important requirements to consider when designing training programs corresponding to a national qualification; this includes information on curriculum design, training delivery, trainee entry requirements, training tools and equipment, and trainer qualifications.

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