

TRAINING REGULATIONS



Scaffold Erection NC II

CONSTRUCTION SECTOR

TECHNICAL EDUCATION AND SKILLS DEVELOPMENT AUTHORITY
East Service Road, South Superhighway, Taguig City, Metro Manila

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CONSTRUCTION SECTOR

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TRAINING REGULATIONS FOR SCAFFOLD ERECTION NC II

SECTION 1 SCAFFOLD ERECTION NC II QUALIFICATION

The **Scaffold Erection NC II** Qualification consists of competencies that individuals must achieve to enable them to erect and dismantle scaffolding and safely handle scaffolding tools and equipment.

This Qualification is packaged from the competency map of the Construction sector as shown in Annex A.

The Units of Competency comprising this Qualification include the following:

CODE NO. BASIC COMPETENCIES

Units of Competency

500311105	Participate in workplace communication
500311106	Work in a team environment
500311107	Practice career professionalism
500311108	Practice occupational health and safety procedures

CODE NO. COMMON COMPETENCIES

Units of Competency

CON931201	Prepare construction materials and tools
CON311201	Observe procedures, specifications and manuals of instruction
CON311202	Interpret technical drawings and plans
CON311203	Perform mensurations and calculations
CON311204	Maintain tools and equipment

CODE NO. CORE COMPETENCIES

Units of Competency

CON713339	Erect and dismantle scaffolding
CON713340	Handle scaffolding equipment and tools

A person who has achieved this Qualification is competent to be a:

- Scaffold Erector

SECTION 2 COMPETENCY STANDARDS

This section gives the details of the contents of the basic, common and core units of competency required in **SCAFFOLD ERECTION NC II**.

BASIC COMPETENCIES

UNIT OF COMPETENCY:	PARTICIPATE IN WORKPLACE COMMUNICATION
UNIT CODE :	500311105
UNIT DESCRIPTOR :	This unit covers the knowledge, skills and attitudes required to gather, interpret and convey information in response to workplace requirements.

ELEMENT	PERFORMANCE CRITERIA <i>Bold and Italicized</i> terms are elaborated in the Range of Variables
1. Obtain and convey workplace information	1.1 Specific and relevant information is accessed from <i>appropriate sources</i> 1.2 Effective questioning , active listening and speaking skills are used to gather and convey information 1.3 Appropriate <i>medium</i> is used to transfer information and ideas 1.4 Appropriate non- verbal communication is used 1.5 Appropriate lines of communication with supervisors and colleagues are identified and followed 1.6 Defined workplace procedures for the location and <i>storage</i> of information are used 1.7 Personal interaction is carried out clearly and concisely
2. Participate in workplace meetings and discussions	2.1 Team meetings are attended on time 2.2 Own opinions are clearly expressed and those of others are listened to without interruption 2.3 Meeting inputs are consistent with the meeting purpose and established <i>protocols</i> 2.4 <i>Workplace interactions</i> are conducted in a courteous manner 2.5 Questions about simple routine workplace procedures and matters concerning working conditions of employment are asked and responded to 2.6 Meetings outcomes are interpreted and implemented

<p>3. Complete relevant work related documents</p>	<p>3.1 Range of forms relating to conditions of employment are completed accurately and legibly</p> <p>3.2 Workplace data is recorded on standard workplace forms and documents</p> <p>3.3 Basic mathematical processes are used for routine calculations</p> <p>3.4 Errors in recording information on forms/ documents are identified and properly acted upon</p> <p>3.5 Reporting requirements to supervisor are completed according to organizational guidelines</p>
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RANGE OF VARIABLES

VARIABLE	RANGE
1. Appropriate sources	1.1 Team members 1.2 Suppliers 1.3 Trade personnel 1.4 Local government 1.5 Industry bodies
2. Medium	2.1 Memorandum 2.2 Circular 2.3 Notice 2.4 Information discussion 2.5 Follow-up or verbal instructions 2.6 Face to face communication
3. Storage	3.1 Manual filing system 3.2 Computer-based filing system
4. Forms	4.1 Personnel forms, telephone message forms, safety reports
5. Workplace interactions	5.1 Face to face 5.2 Telephone 5.3 Electronic and two way radio 5.4 Written including electronic, memos, instruction and forms, non-verbal including gestures, signals, signs and diagrams
6. Protocols	6.1 Observing meeting 6.2 Compliance with meeting decisions 6.3 Obeying meeting instructions

EVIDENCE GUIDE

<p>1. Critical Aspects of Competency</p>	<p>Assessment requires evidence that the candidate:</p> <ul style="list-style-type: none"> 1.1 Demonstrates ability to prepare written communication following standard format of the organization 1.2 Demonstrates ability to access information using communication equipment 1.3 Made use of relevant terms as an aid to transfer information effectively 1.4 Conveyed information effectively adopting the formal or informal communication
<p>2. Underpinning Knowledge and Attitudes</p>	<ul style="list-style-type: none"> 2.1 Effective communication 2.2 Different modes of communication 2.3 Written communication 2.4 Organizational policies 2.5 Communication procedures and systems 2.6 Technology relevant to the enterprise and the individual's work responsibilities
<p>3. Underpinning Skills</p>	<ul style="list-style-type: none"> 3.1 Follow simple spoken language 3.2 Perform routine workplace duties following simple written notices 3.3 Participate in workplace meetings and discussions 3.4 Complete work related documents 3.5 Estimate, calculate and record routine workplace measures 3.6 Basic mathematical processes of addition, subtraction, division and multiplication 3.7 Ability to relate to people of social range in the workplace 3.8 Gather and provide information in response to workplace requirements
<p>4. Resource Implications</p>	<ul style="list-style-type: none"> 4.1 Fax machine 4.2 Telephone 4.3 Writing materials 4.4 Internet
<p>5. Methods of Assessment</p>	<ul style="list-style-type: none"> 5.1 Direct Observation 5.3 Oral interview and written test
<p>6. Context of Assessment</p>	<ul style="list-style-type: none"> 6.1 Competency may be assessed individually in the actual workplace or through accredited institution

UNIT OF COMPETENCY:	WORK IN TEAM ENVIRONMENT
UNIT CODE :	500311106
UNIT DESCRIPTOR :	This unit covers the skills, knowledge and attitudes to identify role and responsibility as a member of a team.

ELEMENT	PERFORMANCE CRITERIA <i>Bold and Italicized</i> terms are elaborated in the Range of Variables
1. Describe team role and scope	1.1 The <i>role and objective of the team</i> is identified from available <i>sources of information</i> 1.2 Team parameters, reporting relationships and responsibilities are identified from team discussions and appropriate external sources
2. Identify own role and responsibility within team	2.1 Individual role and responsibilities within the team environment are identified 2.2 Roles and responsibility of other team members are identified and recognized 2.3 Reporting relationships within team and external to team are identified
3. Work as a team member	3.1 Effective and appropriate forms of communications used and interactions undertaken with team members who contribute to known team activities and objectives 3.2 Effective and appropriate contributions made to complement team activities and objectives, based on individual skills and competencies and <i>workplace context</i> 3.3 Observed protocols in reporting using standard operating procedures 3.4 Contribute to the development of teamwork plans based on an understanding of team's role and objectives and individual competencies of the members.

RANGE OF VARIABLES

VARIABLE	RANGE
1. Role and objective of team	1.1 Work activities in a team environment with enterprise or specific sector 1.2 Limited discretion, initiative and judgement maybe demonstrated on the job, either individually or in a team environment
2. Sources of information	2.1 Standard operating and/or other workplace procedures 2.2 Job procedures 2.3 Machine/equipment manufacturer's specifications and instructions 2.4 Organizational or external personnel 2.5 Client/supplier instructions 2.6 Quality standards 2.7 OHS and environmental standards
3. Workplace context	3.1 Work procedures and practices 3.2 Conditions of work environments 3.3 Legislation and industrial agreements 3.4 Standard work practice including the storage, safe handling and disposal of chemicals 3.5 Safety, environmental, housekeeping and quality guidelines

EVIDENCE GUIDE

<p>1. Critical aspects of competency</p>	<p>Assessment requires evidence that the candidate:</p> <ul style="list-style-type: none"> 1.1 Demonstrates ability to operate in a team to complete workplace activity 1.2 Demonstrates ability to work effectively with others 1.3 Demonstrates ability to convey information in written or oral form 1.4 Demonstrates ability to select and use appropriate workplace language 1.5 Demonstrates ability to follow designated work plan for the job 1.6 Demonstrates ability to report outcomes
<p>2. Underpinning Knowledge and Attitude</p>	<ul style="list-style-type: none"> 2.1 Communication process 2.2 Team structure 2.3 Team roles 2.4 Group planning and decision making
<p>3. Underpinning Skills</p>	<ul style="list-style-type: none"> 3.1 Communicate appropriately, consistent with the culture of the workplace
<p>4. Resource Implications</p>	<p>The following resources MUST be provided:</p> <ul style="list-style-type: none"> 4.1 Access to relevant workplace or appropriately simulated environment where assessment can take place 4.2 Materials relevant to the proposed activity or tasks
<p>5. Methods of Assessment</p>	<p>Competency may be assessed through:</p> <ul style="list-style-type: none"> 5.1 Observation of the individual member in relation to the work activities of the group 5.2 Observation of simulation and or role play involving the participation of individual member to the attainment of organizational goal 5.3 Case studies and scenarios as a basis for discussion of issues and strategies in teamwork
<p>6. Context for Assessment</p>	<ul style="list-style-type: none"> 6.1 Competency may be assessed in workplace or in a simulated workplace setting 6.2 Assessment shall be observed while task are being undertaken whether individually or in group

UNIT OF COMPETENCY:	PRACTICE CAREER PROFESSIONALISM
UNIT CODE :	500311107
UNIT DESCRIPTOR :	This unit covers the knowledge, skills and attitudes in promoting career growth and advancement.

ELEMENT	PERFORMANCE CRITERIA <i>Bold and Italicized</i> terms are elaborated in the Range of Variables
1. Integrate personal objectives with organizational goals	1.1 Personal growth and work plans are pursued towards improving the qualifications set for the profession 1.2 Intra- and interpersonal relationships is are maintained in the course of managing oneself based on performance evaluation 1.3 Commitment to the organization and its goal is demonstrated in the performance of duties
2. Set and meet work priorities	2.1 Competing demands are prioritized to achieve personal, team and organizational goals and objectives 2.2 Resources are utilized efficiently and effectively to manage work priorities and commitments 2.3 Practices along economic use and maintenance of equipment and facilities are followed as per established procedures
3. Maintain professional growth and development	3.1 Training and career opportunities are identified and availed of based on job requirements 3.2 Recognition is sought/received and demonstrated as proof of career advancement 3.3 Licenses and/or certifications relevant to job and career are obtained and renewed

RANGE OF VARIABLES

VARIABLE	RANGE
1. Evaluation	1.1 Performance Appraisal 1.2 Psychological Profile 1.3 Aptitude Tests
2. Resources	2.1 Human 2.2 Financial 2.3 Technology 2.3.1 Hardware 2.3.2 Software
3. Training and career opportunities	3.1 Participation in training programs 3.1.1 Technical 3.1.2 Supervisory 3.1.3 Managerial 3.1.4 Continuing Education 3.2 Serving as Resource Persons in conferences and workshops
4. Recognition	4.1 Recommendations 4.2 Citations 4.3 Certificate of Appreciation 4.4 Commendations 4.5 Awards 4.6 Tangible and Intangible Rewards
5. Licenses and/or certifications	5.1 National Certificates 5.2 Certificate of Competency 5.3 Support Level Licenses 5.4 Professional Licenses

EVIDENCE GUIDE

<p>1. Critical Aspects of Competency</p>	<p>Assessment requires evidence that the candidate:</p> <p>1.1 Demonstrates ability to attain job targets within key result areas (KRAs)</p> <p>1.2 Demonstrates ability to maintain intra - and interpersonal relationship in the course of managing oneself based on performance evaluation</p> <p>1.3 Demonstrates ability to complete training and career opportunities which are based on the requirements of the industries</p> <p>1.4 Demonstrates ability to acquire and maintain licenses and/or certifications according to the requirement of the qualification</p>
<p>2. Underpinning Knowledge</p>	<p>2.1 Work values and ethics (Code of Conduct, Code of Ethics, etc.)</p> <p>2.2 Company policies</p> <p>2.3 Company-operations, procedures and standards</p> <p>2.4 Fundamental rights at work including gender sensitivity</p> <p>2.5 Personal hygiene practices</p>
<p>3. Underpinning Skills</p>	<p>3.1 Appropriate practice of personal hygiene</p> <p>3.2 Intra and Interpersonal skills</p> <p>3.3 Communication skills</p>
<p>4. Resource Implications</p>	<p>The following resources MUST be provided:</p> <p>Workplace or assessment location</p> <p>Case studies/scenarios</p>
<p>5. Methods of Assessment</p>	<p>Competency may be assessed through:</p> <p>5.1 Portfolio Assessment</p> <p>5.2 Interview</p> <p>5.3 Simulation/Role-plays</p> <p>5.4 Observation</p> <p>5.5 Third Party Reports</p> <p>5.6 Exams and Tests</p>
<p>6. Context of Assessment</p>	<p>6.1 Competency may be assessed in the work place or in a simulated work place setting</p>

UNIT OF COMPETENCY:	PRACTICE OCCUPATIONAL HEALTH AND SAFETY PROCEDURES
UNIT CODE :	500311108
UNIT DESCRIPTOR :	This unit covers the outcomes required to comply with regulatory and organizational requirements for occupational health and safety.

ELEMENT	PERFORMANCE CRITERIA <i>Bold and Italicized</i> terms are elaborated in the Range of Variables
1. Identify hazards and risks	<p>1.1 Safety regulations and workplace safety and hazard control practices and procedures are clarified and explained based on organization procedures</p> <p>1.2 Hazards/risks in the workplace and their corresponding indicators are identified to minimize or eliminate risk to co-workers, workplace and environment in accordance with organization procedures</p> <p>1.3 Contingency measures during workplace accidents, fire and other emergencies are recognized and established in accordance with organization procedures</p>
2. Evaluate hazards and risks	<p>2.1 Terms of maximum tolerable limits which when exceeded will result in harm or damage are identified based on threshold limit values (TLV)</p> <p>2.2 Effects of the hazards are determined</p> <p>2.3 OHS issues and/or concerns and identified safety hazards are reported to designated personnel in accordance with workplace requirements and relevant workplace OHS legislation</p>
3. Control hazards and risks	<p>3.1 Occupational Health and Safety (OHS) procedures for controlling hazards/risks in workplace are consistently followed</p> <p>3.2 Procedures for dealing with workplace accidents, fire and emergencies are followed in accordance with organization OHS policies</p> <p>3.3 Personal protective equipment (PPE) is correctly used in accordance with organization OHS procedures and practices</p> <p>3.4 Appropriate assistance is provided in the event of a workplace emergency in accordance with established organization protocol</p>

ELEMENT	PERFORMANCE CRITERIA <i>Bold and Italicized</i> terms are elaborated in the Range of Variables
4. Maintain OHS awareness	4.1 <i>Emergency-related drills and training</i> are participated in as per established organization guidelines and procedures 4.2 <i>OHS personal records</i> are completed and updated in accordance with workplace requirements

RANGE OF VARIABLES

VARIABLE	RANGE
1. Safety regulations	May include but are not limited to: 1.1 Clean Air Act 1.2 Building code 1.3 National Electrical and Fire Safety Codes 1.4 Waste management statutes and rules 1.5 Philippine Occupational Safety and Health Standards 1.6 DOLE regulations on safety legal requirements 1.7 ECC regulations
2. Hazards/Risks	May include but are not limited to: 2.1 Physical hazards – impact, illumination, pressure, noise, vibration, temperature, radiation 2.2 Biological hazards- bacteria, viruses, plants, parasites, mites, molds, fungi, insects 2.3 Chemical hazards – dusts, fibers, mists, fumes, smoke, gasses, vapors 2.4 Ergonomics 2.4.1 Psychological factors – over exertion/ excessive force, awkward/static positions, fatigue, direct pressure, varying metabolic cycles 2.4.2 Physiological factors – monotony, personal relationship, work out cycle
3. Contingency measures	May include but are not limited to: 3.1 Evacuation 3.2 Isolation 3.3 Decontamination 3.4 (Calling designed) emergency personnel
4. PPE	May include but are not limited to: 4.1 Mask 4.2 Gloves 4.3 Goggles 4.4 Hair Net/cap/bonnet 4.5 Face mask/shield 4.6 Ear muffs 4.7 Apron/Gown/coverall/jump suit 4.8 Anti-static suits

VARIABLE	RANGE
5. Emergency-related drills and training	5.1 Fire drill 5.2 Earthquake drill 5.3 Basic life support/CPR 5.4 First aid 5.5 Spillage control 5.6 Decontamination of chemical and toxic 5.7 Disaster preparedness/management
6. OHS personal records	6.1 Medical/Health records 6.2 Incident reports 6.3 Accident reports 6.4 OHS-related training completed

EVIDENCE GUIDE

<p>1. Critical Aspects of Competency</p>	<p>Assessment requires evidence that the candidate:</p> <ul style="list-style-type: none"> 1.1 Demonstrates ability to explain clearly established workplace safety and hazard control practices and procedures 1.2 Demonstrates ability to identify hazards/risks in the workplace and its corresponding indicators in accordance with company procedures 1.3 Demonstrates ability to recognize contingency measures during workplace accidents, fire and other emergencies 1.4 Demonstrates ability to identify terms of maximum tolerable limits based on threshold limit value- TLV 1.5 Demonstrates ability to follow Occupational Health and Safety (OHS) procedures for controlling hazards/risks in workplace 1.6 Used Personal Protective Equipment (PPE) in accordance with company OHS procedures and practices 1.7 Completed and updated OHS personal records in accordance with workplace requirements
<p>2. Underpinning Knowledge and Attitude</p>	<ul style="list-style-type: none"> 2.1 OHS procedures and practices and regulations 2.2 PPE types and uses 2.3 Personal hygiene practices 2.4 Hazards/risks identification and control 2.5 Threshold Limit Value -TLV 2.6 OHS indicators 2.7 Organization safety and health protocol 2.8 Safety consciousness 2.9 Health consciousness
<p>3. Underpinning Skills</p>	<ul style="list-style-type: none"> 3.1 Practice of personal hygiene 3.2 Hazards/risks identification and control skills 3.3 Interpersonal skills 3.4 Communication skills
<p>4. Resource Implications</p>	<p>The following resources must be provided:</p> <ul style="list-style-type: none"> 4.1 Workplace or assessment location 4.2 OHS personal records 4.3 PPE 4.4 Health records

5. Methods of Assessment	Competency may be assessed through: 5.1 Portfolio Assessment 5.2 Interview 5.3 Case Study/Situation
6. Context for Assessment	6.1 Competency may be assessed in the work place or in a simulated work place setting

COMMON COMPETENCIES

UNIT OF COMPETENCY: PREPARE CONSTRUCTION MATERIALS AND TOOLS
UNIT CODE : CON931201

UNIT DESCRIPTOR : This unit covers the knowledge, skills and attitudes on identifying, requesting and receiving construction materials and tools based on the required performance standards.

ELEMENT	PERFORMANCE CRITERIA <i>Italicized</i> terms are elaborated in the Range of Variable
1. Identify materials	1.1 Materials are listed as per job requirements 1.2 Quantity and description of materials conform with the job requirements 1.3 Tools and accessories are identified according to job requirements
2. Requisition materials	2.1 Materials and tools needed are requested according to the list prepared 2.2 Request is done as per company standard operating procedures (SOP) 2.3 Substitute materials and tools are provided without sacrificing cost and quality of work
3. Receive and inspect materials	3.1 Materials and tools issued are inspected as per quantity and specification 3.2 Tools, accessories and materials are checked for damages according to enterprise procedures 3.3 Materials and tools are set aside to appropriate location nearest to the workplace

RANGE OF VARIABLES

VARIABLE	RANGE
1. Materials and Tools	1.1 Electrical supplies 1.2 Structural 1.3 Plumbing 1.4 Welding/pipefitting 1.5 Carpentry 1.6 Masonry
2. Description of Materials and Tools	2.1 Brand name 2.2 Size 2.3 Capacity 2.4 Kind of application
3. Company standard procedures	3.1 Job order 3.2 Requisition slip 3.3 Borrower slip

EVIDENCE GUIDE

<p>1. Critical aspects of competency</p>	<p>Assessment requires evidence that the candidate:</p> <ul style="list-style-type: none"> 1.1 Listed materials and tools according to quantity and job requirements 1.2 Requested materials and tools according to the list prepared and as per company SOP 1.3 Inspected issued materials and tools as per quantity and job specifications 1.4 Tools provided with appropriate safety devices
<p>2. Underpinning knowledge</p>	<ul style="list-style-type: none"> 2.1 Types and uses of construction materials and tools 2.2 Different forms 2.3 Requisition procedures
<p>3. Underpinning skills</p>	<ul style="list-style-type: none"> 3.1 Preparing materials and tools 3.2 Proper handling of tools and equipment 3.3 Following instructions
<p>4. Resource implications</p>	<p>The following resources should be provided:</p> <ul style="list-style-type: none"> 4.1 Workplace location 4.2 Materials relevant to the unit of competency 4.3 Technical plans, drawings and specifications relevant to the activities
<p>5. Methods of assessment</p>	<p>Competency in this unit must be assessed through:</p> <ul style="list-style-type: none"> 5.1 Direct observation and oral questioning
<p>6. Context of assessment</p>	<ul style="list-style-type: none"> 6.1 Competency may be assessed in the workplace or in a simulated workplace <p>Competency assessment must be undertaken in accordance with the endorsed TESDA assessment guidelines</p>

UNIT OF COMPETENCY: OBSERVE PROCEDURES, SPECIFICATIONS AND MANUALS OF INSTRUCTIONS

UNIT CODE : CON311201

UNIT DESCRIPTOR : This unit covers the knowledge, skills and attitudes on identifying, interpreting, applying services to specifications and manuals and storing manuals.

ELEMENT	PERFORMANCE CRITERIA <i>Italicized</i> terms are elaborated in the Range of Variables
1. Identify and access specification/manuals	1.1 Appropriate manuals are identified and accessed as per job requirements 1.2 Version and date of manual are checked to ensure that correct specification and procedures are identified
2. Interpret manuals	2.1 Relevant sections, chapters of specifications/manuals are located in relation to the work to be conducted 2.2 Information and procedure in the manual are interpreted in accordance with industry practices
3. Apply information in manual	3.1 Manual is interpreted according to job requirements 3.2 Work steps are correctly identified in accordance with manufacturer's specification 3.3 Manual data are applied according to the given task 3.4 All correct sequencing and adjustments are interpreted in accordance with information contained on the manual or specifications
4. Store manuals	4.1 Manual or specification is stored appropriately to prevent damage, ready access and updating of information when required in accordance with company requirements

RANGE OF VARIABLES

VARIABLE	RANGE
1. Procedures, Specifications and Manuals of Instructions	Kinds of Manuals: 1.1 Manufacturer's Specification Manual 1.2 Repair Manual 1.3 Maintenance Procedure Manual 1.4 Periodic Maintenance Manual

EVIDENCE GUIDE

<p>1. Critical aspects of competency</p>	<p>Assessment requires that the candidate:</p> <ul style="list-style-type: none"> 1.1 Identified and accessed specification/manuals as per job requirements 1.2 Interpreted manuals in accordance with industry practices 1.3 Applied information in manuals according to the given task 1.4 Stored manuals in accordance with company requirements
<p>2. Underpinning knowledge</p>	<ul style="list-style-type: none"> 2.1 Types of manuals used in construction sector 2.2 Identification of symbols used in the manuals 2.3 Identification of units of measurements 2.4 Unit conversion
<p>3. Underpinning skills</p>	<ul style="list-style-type: none"> 3.1 Reading and comprehension skills required to identify and interpret construction manuals and specifications 3.2 Accessing information and data
<p>4. Resource implications</p>	<p>The following resources should be provided:</p> <ul style="list-style-type: none"> 4.1 All manuals/catalogues relative to construction sector
<p>5. Methods of assessment</p>	<p>Competency should be assessed through:</p> <ul style="list-style-type: none"> 5.1 Direct observation 5.2 Questions/interview <p>Assessment of underpinning knowledge and practical skills may be combined</p>
<p>6. Context of assessment</p>	<ul style="list-style-type: none"> 6.1 Competency assessment must be undertaken in accordance with the endorsed TESDA assessment guidelines 6.2 Assessment may be conducted in the workplace or a simulated environment

UNIT OF COMPETENCY: INTERPRET TECHNICAL DRAWINGS AND PLANS

UNIT CODE : CON311202

UNIT DESCRIPTOR : This unit covers the knowledge, skills and attitudes in analyzing and interpreting symbols, data and work plan based on the required performance standards.

ELEMENTS	PERFORMANCE CRITERIA <i>Italicized</i> terms are elaborated in the Range of Variables
1. Analyze signs, symbols and data	1.1 Technical plans are obtained according to job requirements 1.2 Signs, symbols and data are identified according to job specifications 1.3 Signs symbols and data are determined according to classification or as appropriate in drawing
2. Interpret technical drawings and plans	2.1 Necessary tools, materials and equipment are identified according to the plan 2.2 Supplies and materials are listed according to specifications 2.3 Components, assemblies or objects are recognized as required 2.4 Dimensions are identified as appropriate to the plan 2.5 Specification details are matched with existing/available resources and in line with job requirements 2.6 Work plan is drawn following the specifications
3. Apply freehand sketching	3.1 Where applicable, correct freehand sketching is produced in accordance with the job requirements

RANGE OF VARIABLES

VARIABLES	RANGE
1. Technical Plans	Including but not limited to: 1.1 Electrical plans 1.2 Structural plans 1.3 Architectural plans 1.4 Plumbing plans 1.5 Welding Procedures Specifications (WPS)
2. Work plan	2.1 Job requirements 2.2 Installation instructions 2.3 Components instruction
3. Classification	Including but not limited to: 3.1 Electrical 3.2 Mechanical 3.3 Plumbing
4. Drawing	4.1 Drawing symbols 4.2 Alphabet of lines 4.3 Orthographic views 4.4 Front view 4.5 Right side view/left side view 4.6 Top view 4.7 Pictorial 4.8 Schematic diagram 4.9 Electrical drawings 4.10 Structural drawings 4.11 Plumbing drawings 4.12 Water 4.13 Sewerage/Drainage 4.14 Ventilation 4.15 Welding symbols
5. Tools and materials	Including but not limited to: 5.1 Compass 5.2 Divider 5.3 Rulers 5.4 Triangles 5.5 Drawing tables 5.6 Computer

EVIDENCE GUIDE

<p>1. Critical aspects of competency</p>	<p>Assessment requires that the candidate:</p> <ul style="list-style-type: none"> 1.1 Identified and determined signs, symbols and data according to work plan, job requirements and classifications 1.2 Identified tools and equipment in accordance with job requirements 1.3 Listed supplies and materials according to blueprint specifications 1.4 Drawn work plan following specifications 1.5 Demonstrated ability to determine job specifications based on working / technical drawing
<p>2. Underpinning Knowledge</p>	<ul style="list-style-type: none"> 2.1 TRADE MATHEMATICS <ul style="list-style-type: none"> 2.1.1 Linear measurement 2.1.2 Dimension 2.1.3 Unit conversion 2.2 BLUEPRINT READING AND PLAN SPECIFICATION <ul style="list-style-type: none"> 2.2.1 Electrical, mechanical plan, symbols and abbreviations 2.2.2 Drawing standard symbols 2.3 TRADE THEORY <ul style="list-style-type: none"> 2.3.1 Basic technical drawing 2.3.2 Types technical plans 2.3.3 Various types of drawings 2.3.4 Notes and specifications
<p>3. Underpinning Skills</p>	<ul style="list-style-type: none"> 3.1 Interpreting drawing/orthographic drawing 3.2 Interpreting technical plans 3.3 Matching specification details with existing resources 3.4 Following instructions 3.5 Handling of drawing instruments
<p>4. Resource Implications</p>	<p>The following resources should be provided:</p> <ul style="list-style-type: none"> 4.1 Workplace 4.2 Drawings and specification relevant to task 4.3 Materials and instrument relevant to proposed activity

<p>5. Methods of Assessment</p>	<p>Competency should be assessed through: 5.1 Direct Observation 5.2 Questions/Interview 5.3 Written test related to underpinning knowledge</p>
<p>6. Context of Assessment</p>	<p>6.1 Competency assessment may occur in the workplace or in any appropriate simulated environment Assessment shall be observed while task are being undertaken whether individually or in group 6.2 Competency assessment must be undertaken in accordance with the endorsed TESDA assessment guidelines</p>

UNIT OF COMPETENCY: PERFORM MENSURATIONS AND CALCULATIONS

UNIT CODE : CON311203

UNIT DESCRIPTOR : This unit covers the knowledge, skills and attitudes on identifying and measuring objects based on the required performance standards.

ELEMENT	PERFORMANCE CRITERIA <i>Italicized terms</i> are elaborated in the Range of Variable
1. Select measuring instruments	1.1 Object or component to be measured is identified, classified and interpreted according to the appropriate regular geometric shape 1.2 Measuring tools are selected/identified as per object to be measured or job requirements 1.3 Correct specifications are obtained from relevant sources 1.4 Appropriate measuring instruments are selected according to job requirements Alternative measuring tools are used without sacrificing cost and quality of work
2. Carry out measurements and calculations	2.1 Accurate measurements are obtained according to job requirements 2.2 Alternative measuring tools are used without sacrificing cost and quality of work 2.3 Calculation needed to complete work tasks are performed using the four basic process of addition (+), subtraction (-), multiplication (x) and division (/) including but not limited to: trigonometric functions, algebraic computations 2.4 Calculations involving fractions, percentages and mixed numbers are used to complete workplace tasks 2.5 Numerical computation is self-checked and corrected for accuracy 2.6 Instruments are read to the limit of accuracy of the tool 2.7 Systems of measurement identified and converted according to job requirements/ISO 2.8 Workpieces are measured according to job requirements

RANGE OF VARIABLES

VARIABLE	RANGE
1. Geometric shape	Including but is not limited to: 1.1 Round 1.2 Square 1.3 Rectangular 1.4 Triangle 1.5 Sphere 1.6 Conical
2. Measuring instruments	Including but not limited to: 2.1 Micrometer (In-out, depth) 2.2 Vernier caliper (out, inside) 2.3 Dial gauge with mag, std. 2.4 Straight edge 2.5 Thickness gauge 2.6 Torque gauge 2.7 Small hole gauge 2.8 Telescopic gauge 2.9 Try-square 2.10 Protractor 2.11 Combination gauge 2.12 Steel rule 2.13 Voltmeter 2.14 Ammeter 2.15 Mega ohmeter 2.16 Kilowatt hour meter 2.17 Gauges 2.18 Thermometers
3. Measurements and calculations	3.1 Linear 3.2 Volume 3.3 Area 3.4 Wattage 3.5 Voltage 3.6 Resistance 3.7 Amperage 3.8 Frequency 3.9 Impedance

VARIABLE	RANGE
	3.10 Conductance 3.11 Capacitance 3.12 Displacement 3.16 Inside diameter 3.17 Circumference 3.18 Length 3.19 Thickness 3.20 Outside diameter 3.21 Taper 3.22 Out of roundness 3.23 Oil clearance 3.24 End play/Thrust clearance

EVIDENCE GUIDE

<p>1. Critical aspects of competency</p>	<p>Assessment requires that the candidate:</p> <p>1.1 Selected and prepared appropriate measuring instruments in accordance with job requirements</p> <p>1.2 Performed measurements and calculations according to job requirements/ ISO</p>
<p>2. Underpinning knowledge</p>	<p>TRADE MATHEMATICS / MENSURATION</p> <p>2.1 Four fundamental operation</p> <p>2.2 Linear measurement</p> <p>2.3 Dimensions</p> <p>2.4 Unit conversion</p> <p>2.5 Ratio and proportion</p> <p>2.6 Trigonometric functions</p> <p>2.8 Algebraic equations</p>
<p>3. Underpinning skills</p>	<p>3.1 Performing calculation by addition, subtraction, multiplication and division; trigonometric functions and algebraic equations</p> <p>3.2 Visualizing objects and shapes</p> <p>3.3 Interpreting formulas for volume, areas, perimeters of plane and geometric figures</p> <p>3.4 Proper handling of measuring instruments</p>
<p>4. Resource implications</p>	<p>The following resources should be provided:</p> <p>4.1 Workplace location</p> <p>4.2 Problems to solve</p> <p>4.3 Measuring instrument appropriate to carry out tasks</p> <p>4.4 Instructional materials relevant to the propose activity</p> <p>Assessment of underpinning knowledge and practical skills may be combined</p>
<p>5. Methods of assessment</p>	<p>Competency should be assessed through:</p> <p>5.1 Actual demonstration</p> <p>5.2 Direct observation</p> <p>5.3 Written test/questioning related to underpinning knowledge</p>
<p>6. Context of assessment</p>	<p>6.1 Competency assessment may occur in workplace or any appropriate simulated environment</p> <p>6.2 Assessment shall be observed while task are being undertaken whether individually or in group</p> <p>6.3 Competency assessment must be undertaken in accordance with the TESDA assessment guidelines</p>

UNIT OF COMPETENCY: MAINTAIN TOOLS AND EQUIPMENT

UNIT CODE : CON311204

UNIT DESCRIPTOR : This unit covers the knowledge, skills and attitudes on checking condition, performing preventive maintenance and storing of tools and equipment based on the required performance standards.

<p>ELEMENTS</p>	<p>PERFORMANCE CRITERIA <i>Italicized</i> terms are elaborated in the Range of Variables</p>
<p>1. Check condition of tools and equipment</p>	<p>1.1 Materials, tools and equipment are identified according to classification and job requirements</p> <p>1.2 Non-functional tools and equipment are segregated and labeled according to classification</p> <p>1.3 Safety of tools and equipment are observed in accordance with manufacturer's instructions</p> <p>1.4 Condition of PPE are checked in accordance with manufacturer's instructions</p>
<p>2. Perform basic preventive maintenance</p>	<p>2.1 Appropriate lubricants are identified according to types of equipment</p> <p>2.2 Tools and equipment are lubricated according to preventive maintenance schedule or manufacturer's specifications</p> <p>2.3 Measuring instruments are checked and calibrated in accordance with manufacturer's instructions</p> <p>2.4 Tools are cleaned and lubricated according to standard procedures</p> <p>2.5 Defective instruments, equipment and accessories are inspected and replaced according to manufacturer's specifications</p> <p>2.6 Tools are inspected, repaired and replaced after use</p> <p>2.7 Work place is cleaned and kept in safe state in line with OSHA regulations</p>

<p>3. Store tools and equipment</p>	<p>3.1 Inventory of tools, instruments and equipment are conducted and recorded as per company practices</p> <p>3.2 Tools and equipment are stored safely in appropriate locations in accordance with manufacturer's specifications or company procedures</p>
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RANGE OF VARIABLES

VARIABLES	RANGE
1. Materials	Including but not limited to: 1.1 Lubricants 1.2 Cleaning materials 1.3 Rust remover 1.4 Rugs 1.5 Spare parts
2. Tools and equipment	Including but not limited to: 2.1 Tools Cutting tools - hacksaw, crosscut saw, rip saw Boring tools - auger, brace, grinlet, hand drill Holding tools - vise grip, C-clamp, bench vise Threading tools - die and stock, taps 2.2 Measuring instruments/equipment
3. PPE	Including but not limited to: 3.1 Goggles 3.2 Gloves 3.3 Safety shoes 3.4 Aprons/Coveralls
4. Forms	4.1 Maintenance schedule forms 4.2 Requisition slip 4.3 Inventory Form 4.4 Inspection Form 4.5 Procedures

EVIDENCE GUIDE

<p>1. Critical aspects of competency</p>	<p>Assessment requires that the candidate:</p> <ul style="list-style-type: none"> 1.1 Selected and used appropriate processes, tools and equipment to carry out task 1.2 Identified functional and non-functional tools and equipment 1.3 Checked, lubricated and calibrated tools, equipment and instruments according to manufacturer's specifications 1.4 Replaced defective tools, equipment and their accessories 1.5 Observed and applied safe handling of tools and equipment and safety work practices 1.6 Prepared and submitted inventory report, where applicable 1.7 Maintained workplace in accordance with OHS regulations 1.8 Stored tools and equipment safely in appropriate locations and in accordance with company practices
<p>2. Underpinning knowledge</p>	<ul style="list-style-type: none"> 2.1 SAFETY PRACTICES <ul style="list-style-type: none"> 2.1.1 Use of PPE 2.1.2 Handling of tools and equipment 2.1.3 Good housekeeping 2.2 MATERIALS, TOOLS AND EQUIPMENT <ul style="list-style-type: none"> 2.2.1 Types and uses of lubricants 2.2.2 Types and uses of cleaning materials 2.2.3 Types and uses of measuring instruments and equipment 2.3 PREVENTIVE MAINTENANCE <ul style="list-style-type: none"> 2.3.1 Methods and techniques 2.3.2 Procedures
<p>3. Underpinning skills</p>	<ul style="list-style-type: none"> 3.1 Preparing maintenance materials, tools and equipment 3.2 Proper handling of tools and equipment 3.3 Performing preventive maintenance 3.4 Following instructions
<p>4. Resource implications</p>	<p>The following resources should be provided:</p> <ul style="list-style-type: none"> 4.1 Workplace 4.2 Maintenance schedule <p>Maintenance materials, tools and equipment relevant to the proposed activity/task</p>
<p>5. Methods of assessment</p>	<p>Competency should be assessed through:</p> <ul style="list-style-type: none"> 5.1 Direct observation 5.2 Written test/questioning relevant to Underpinning knowledge

6. Context of assessment	6.1 Competency assessment may occur in workplace or any appropriate simulated environment 6.2 Competency assessment must be undertaken in accordance with the endorsed TESDA assessment guidelines
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CORE COMPETENCIES

UNIT OF COMPETENCY :	ERECT AND DISMANTLE SCAFFOLDING
UNIT CODE :	CON 713 339
UNIT DESCRIPTOR :	This unit describes the knowledge, skills and attitudes for scaffold erection and dismantling, particularly planning and preparing for work; doing operational check; and effective erection and dismantling of scaffolds. This is in order to provide work platforms, edge protection and access ways in accordance with industry standards.

ELEMENT	PERFORMANCE CRITERIA <i>Bold and Italicized</i> terms are elaborated in the Range of Variables
1. Plan and prepare for operation	1.1 Occupational Safety and Health Standards (OSHS) requirements consistent to erect and dismantle scaffolding are verified and complied with 1.2 Site access and emergency routes are identified and confirmed 1.3 Work instruction is reviewed, confirmed and clarified with appropriate personnel 1.4 Operation to erect and dismantle scaffolding is determined and planned in line with job and site requirements 1.5 Purpose of scaffolding is confirmed and associated activities are identified 1.6 Equipment is selected in accordance with work requirements 1.7 Environmental protection measures are identified in line with environmental plan and regulations 1.8 Communication with others is established and maintained in accordance with OSHS requirements

ELEMENT	PERFORMANCE CRITERIA
2. Erect scaffolding	<p>2.1 Design loading on scaffold and supporting structure is confirmed using load tables following limits, standards and specifications</p> <p>2.2 Scaffolding and components are inspected with damaged components are isolated, labeled, tagged and rejected</p> <p>2.3 Footings are prepared in accordance with OSHS requirements, codes of practice, manufacturer specifications and engineer's instructions</p> <p>2.4 Scaffolding is set out and erected in accordance with OSHS requirements and manufacturer specifications</p> <p>2.5 Lifting devices are assembled and erected in accordance with manufacturer specifications and OSHS requirements</p> <p>2.6 Fall protection devices are installed in accordance with job specification and OSHS requirements</p>
3. Inspect, repair and / or alter scaffolding	<p>3.1 Erected scaffolding is inspected for defects prior to use</p> <p>3.2 Faulty components are reported to appropriate personnel in line with company safe operating procedure</p> <p>3.3 Existing use of scaffolding is checked against original design to be in accordance with OSHS regulations</p> <p>3.4 Scaffolding instability is reported to appropriate personnel in line with company safe operating procedure</p> <p>3.5 Alterations and repairs are carried out on specified equipment following superior's instruction to ensure regulatory compliance</p> <p>3.6 Scaffolding checklist report is accomplished and submitted to appropriate personnel following company rules and regulations</p>

ELEMENT	PERFORMANCE CRITERIA
4. Dismantle scaffolding and clean up	<p>4.1 Scaffolding is isolated and safety signs and barricades are put in place to ensure safe dismantling</p> <p>4.2 Scaffolding is dismantled using reverse procedure as for erection</p> <p>4.3 Work area is cleared and materials disposed of, re-used or recycled in accordance with OSHS requirements, codes of practice and job specifications</p> <p>4.4 Tools and equipment are cleaned, checked, maintained and stored in accordance with manufacturer recommendations and standard work practices</p> <p>4.5 Work completion procedures are applied and appropriate personnel notified of work completion</p> <p>4.6 Advanced scaffolding operations and faults are recorded and reported to the appropriate personnel</p>

RANGE OF VARIABLES

VARIABLE	RANGE
1. Scaffolding	May include but not be limited to: 1.1 Traveling 1.2 Suspended 1.3 Cantilever, jib, figure and bracket 1.4 Skips, brackets, boatswain chair 1.5 Ladderjack 1.6 Trestle 1.7 Outrigger 1.8 Bamboo
2. Appropriate personnel	May include but not be limited to: 2.1 Leadman / Foreman 2.2 Supervisor 2.3 Engineer 2.4 Safety officer
3. Associated activities	May include but are not limited to the provision of: 3.1 Work platform 3.2 Edge protection 3.3 Access ways 3.3.1 Falsework 3.3.2 Grandstands 3.3.3 Stages 3.3.4 Covered walkways 3.4 Debris net 3.5 Debris guard
4. Equipment	May include but not be limited to: 4.1 Frame type 4.2 Tubular type 4.3 Tubes and fittings
5. Environmental protection measures	May include but not be limited to: 5.1 Waste management 5.2 Noise management 5.3 Dust management

VARIABLE	RANGE
6. Communication	May include but not be limited to: 6.1 Face-to-face 6.2 Whistle 6.3 Two-way radio 6.4 Hand signal 6.5 Mobile phone
7. Footings	May include but not be limited to: 7.1 Sole boards 7.2 Base plate 7.3 Caster wheel 7.4 Adjustable base jack
8. Erection	May include but not be limited to: 8.1 Placement 8.2 Sequencing 8.3 Squaring 8.4 Leveling 8.5 Tying to structure
9. Fall protection devices	9.1 Safety belt 9.2 Full body harness 9.3 Working platform edge protection
10. Hazards	May include but not be limited to: 10.1 Movement of equipment, goods or material 10.2 Uneven or unstable surface or terrain 10.3 Underground or overhead services 10.4 Buildings 10.5 Traffic 10.6 Force majeure
11. Defects	11.1 Corrosion 11.2 Wear 11.3 Non-compatibility

VARIABLE	RANGE
12. Alterations and repairs	Cause may include but are not limited to: 12.1 Storm damage 12.2 Accidents 12.3 Misuse 12.4 Process change 12.5 Wear and tear
13. Tools	May include but are not limited to: 13.1 Cantilevered hoist 13.2 Fiber ropes 13.3 Safety nets 13.4 Static lines 13.5 Hammer 13.6 Spirit level

EVIDENCE GUIDE

<p>1. Critical Aspects of Competency</p>	<p>Assessment requires evidence that the candidate:</p> <ul style="list-style-type: none"> 1.1 Demonstrates ability to verify and comply OSHS requirements to erect and dismantle scaffolding 1.2 Demonstrates ability to identify site access, emergency routes and environmental protection measures 1.3 Demonstrates ability to follow work instruction 1.4 Demonstrates ability to establish communication with worksite personnel in erecting and dismantling advanced scaffolding 1.5 Demonstrates ability to assess scaffold load capacity 1.6 Demonstrates ability to erect and dismantle scaffolding following established / recommended standard procedures 1.7 Demonstrates ability to perform good housekeeping
<p>2. Underpinning Knowledge</p>	<ul style="list-style-type: none"> 2.1 OSHS and other relevant regulatory requirements in erecting and dismantling scaffolding 2.2 Emergency preparedness and response 2.3 Types and uses of communication medium 2.4 Established / recommended standard procedure in the erection and dismantling of scaffolding 2.5 Ability to test and determine the required load 2.6 Familiarity on the types and uses of scaffolding 2.7 Good housekeeping 2.8 Trade Mathematics 2.9 Familiarity with site hazards
<p>3. Underpinning Skills</p>	<ul style="list-style-type: none"> 3.1 Following OSHS and other relevant regulatory requirements for erecting and dismantling scaffolding 3.2 Applying emergency preparedness and response concepts 3.3 Using communication medium 3.4 Following established / recommended standard procedures for erecting and dismantling scaffolding 3.5 Testing and determining the required load 3.6 Complying ancillary requirements in the erection of advanced scaffolding 3.7 Applying trade Mathematics 3.8 Performing good housekeeping

4. Resource Implications	<p>The following resources MUST be provided:</p> <p>4.1 Tools and equipment relevant to the activity</p> <p>4.2 Specifications or work instruction</p> <p>4.3 Workplace or simulated venue</p>
5. Methods of Assessment	<p>Competency may be assessed through:</p> <p>5.1 Direct observation / Demonstration of practical skills</p> <p>5.2 Oral questioning</p>
6. Context for Assessment	<p>6.1 Competency may be assessed in the workplace or in a simulated work environment</p>

UNIT OF COMPETENCY :	HANDLE SCAFFOLDING TOOLS AND EQUIPMENT
UNIT CODE :	CON 713 340
UNIT DESCRIPTOR :	This unit covers the knowledge, skills and attitude required to safely move, locate, inspect, service and store scaffolding together with associated tools and equipment.

ELEMENT	PERFORMANCE CRITERIA <i>Bold and Italicized</i> terms are elaborated in the Range of Variables
1. Plan and prepare for operation	1.1 Work instruction is reviewed, confirmed and clarified with <i>appropriate personnel</i> 1.2 Occupational Safety and Health Standards (OSHS) requirements consistent to handle and use <i>scaffolding tools</i> and equipment are verified and complied with 1.3 Tools and equipment are identified and selected in line with job requirements 1.4 Tools and equipment are checked for serviceability 1.5 Scaffolding materials are identified, accessed, and obtained in line with job requirements 1.6 <i>Environmental protection requirements</i> are identified in accordance with environmental plans and regulations
2. Handle, sort and stack scaffolding equipment and associated tools	2.1 <i>Scaffolding equipment / components</i> are moved to specified location following safety manual procedure 2.2 <i>Sorting and stacking procedure</i> is performed for scaffolding equipment / components based on job specifications 2.3 Scaffolding equipment / components and associated tools are protected against physical, chemical, environmental and water damage based on <i>classification of scaffolding</i> . 2.4 Scaffolding equipment /components and associated tools are stored clear of access ways for ease identification, retrieval and distribution

ELEMENT	PERFORMANCE CRITERIA
3. Prepare for mechanical handling of equipment	3.1 Scaffolding equipment is stacked / banded for mechanical handling in accordance with the type of material and equipment to be used 3.2 Scaffolding equipment is handled for mechanical lifting
4. Perform clean-up	4.1 Work area is cleared and materials disposed of, reused or recycled in accordance with OSHS, codes of practice and job specifications 4.2 Tools and equipment are cleaned, checked, maintained and stored in accordance with manufacturer's recommendations and standard work practices

RANGE OF VARIABLES

VARIABLE	RANGE
1. Appropriate personnel	May include but are not limited to: 1.1 Leadman / Foreman 1.2 Supervisor 1.3 Engineer 1.4 Safety officer
2. Scaffolding tools	May include but are not limited to: 2.1 Cantilevered hoist 2.2 Fiber ropes 2.3 Safety nets 2.4 Static lines 2.5 Hammer 2.6 Spirit level
3. Environmental protection requirements	May include but are not limited to: 3.1 Waste management 3.2 Noise management 3.3 Dust management

VARIABLE	RANGE
4. Scaffolding equipment / components	May include but are not limited to: 4.1 H-frame 4.2 A-frame 4.3 Bracket scaffold (tank and form work) 4.4 Gin wheels 4.5 Mast climbers 4.6 Stairs or ladder 4.7 Steel or aluminum tube 4.8 Couplers and accessories 4.9 Scaffolding planks (including laminated) 4.10 Perimeter safety screens 4.11 Shutters 4.12 Stairs 4.13 Guard rails 4.14 Mid rails 4.15 Braces 4.16 Ledgers (horizontal) 4.17 Diagonal brace 4.18 Transoms 4.19 Mesh guard 4.20 Adjustable base plate 4.21 Pallet trolleys 4.22 Box spanners 4.23 Arm lock
5. Sorting and stacking procedure	Procedure may include but are not limited to: 5.1 Frame type 5.2 Tubular type 5.3 Tubes and fittings
6. Classification of scaffolding	Type may include but not be limited to: 6.1 Frame type 6.2 Tubular type 6.3 Tubes and fittings

EVIDENCE GUIDE

1. Critical Aspects of Competency	Assessment requires evidence that the candidate: 1.1 Demonstrates ability to interpret work instructions 1.2 Demonstrates knowledge of scaffolding parts and components 1.3 Demonstrates ability to comply the requirements of OSHS
2. Underpinning Knowledge	2.1 Scaffolding parts and components 2.2 Company rules and regulations 2.3 Occupational Safety and Health Standards (OSHS) specifications
3. Underpinning Skills	3.1 Handling scaffolding components or accessories and tools 3.2 Following company rules and regulations 3.3 Complying with OSHS requirements
4. Resource Implications	The following resources MUST be provided: 4.1 Scaffolding components or accessories and tools 4.2 Work area
5. Methods of Assessment	Competency may be assessed through: 5.1 Direct observation / Demonstration of practical skills 5.2 Written test 5.3 Oral questioning 5.4 Portfolio
6. Context for Assessment	6.1 Competency may be assessed in the workplace or in simulated workplace environment

SECTION 3 TRAINING STANDARDS

These standards are set to provide technical and vocational education and training (TVET) providers with information and other important requirements to consider when designing training programs for **Scaffold Erection NC II**.

3.1 CURRICULUM DESIGN

Course Title: **Scaffold Erection**

Level: **NC II**

Nominal Training Duration: **162 Hours**

Course Description:

This course is designed to develop knowledge, skills and desirable work attitude along **scaffold erection**. It covers the basic, common and core competencies, e. g., erecting and dismantling scaffolding and handling scaffolding equipment and tools.

BASIC COMPETENCIES (18 Hours)

Unit of Competency	Learning Outcomes	Methodology	Assessment Approach
1. Participate in workplace communication	1.1 Obtain and convey workplace information 1.2 Complete relevant work related documents 1.3 Participate in workplace meeting and discussion.	<ul style="list-style-type: none">• Group discussion• Interaction	<ul style="list-style-type: none">• Demonstration• Observation• Interviews/questioning
2. Work in a team environment	2.1 Describe and identify team role and responsibility in a team 2.2 Describe work as a team member	<ul style="list-style-type: none">• Discussion• Interaction	<ul style="list-style-type: none">• Demonstration• Observation• Interviews/questioning

Unit of Competency	Learning Outcomes	Methodology	Assessment Approach
3. Practice career professionalism	3.1 Integrate personal objectives with organizational goals. 3.2 Set and meet work priorities. 3.3 Maintain professional growth and development	<ul style="list-style-type: none"> • Discussion • Interaction 	<ul style="list-style-type: none"> • Demonstration • Observation • Interviews / questioning
4. Practice occupational health and safety	4.1 Evaluate hazard and risks 4.2 Control hazards and risks 4.3 Maintain occupational health and safety awareness	<ul style="list-style-type: none"> • Discussion • Plant tour • Symposium 	<ul style="list-style-type: none"> • Observation • Interview

COMMON COMPETENCIES
(24 Hours)

Unit of Competency	Learning Outcomes	Methodology	Assessment Approach
1. Prepare construction materials and tools	1.1 Identify Materials 1.2 Requisition Materials 1.3 Receive and inspect materials	Audio Visual Simulation Discussion Practical Exercise Demonstration	Direct observation Questions or interview Portfolio (credentials) Written / Oral Test Demonstration
2. Observe procedures, specifications and manuals of instructions	2.1 Identify and access specification/ manuals	Audio Visual Simulation Discussion Practical Lab Demonstration	Direct observation Oral questioning Written test or examination Third party report Demonstration (able to impart knowledge and skills)
3. Perform mensuration and calculation	3.1 Select measuring instruments 3.2 Carry out measurements and calculations	Audio Visual Simulation Discussion Practical Lab Demonstration	Direct observation Oral questioning Written test or examination Third party report Demonstration (able to impart knowledge and skills)

Unit of Competency	Learning Outcomes	Methodology	Assessment Approach
4. Maintain tools and equipment	4.1 Check condition of tools and equipment 4.2 Perform basic preventive maintenance 4.3 Sharpen edge and tooth cutting tools 4.4 Store tools and equipment	Audio Visual Simulation Discussion Practical Lab Demonstration	Direct observation of application of tasks Oral questioning Written test or examination Third party report Demonstration
5. Interpret technical drawings and plans	5.1 Read / Interpret blueprints and plans 5.2 Perform freehand sketching	Lecture Demonstration Practical exercises	Demonstration and oral questioning Written test

CORE COMPETENCIES
(120 Hours)

Unit of Competency	Learning Outcomes	Methodology	Assessment Approach
1. Handle scaffolding tools and equipment	1.1 Plan and prepare for operation 1.2 Handle, sort and stack scaffolding equipment and associated tools 1.3 Prepare for mechanical handling of equipment 1.4 Clean up	<ul style="list-style-type: none"> • Lecture / discussion • Demonstration 	<ul style="list-style-type: none"> • Observation of practical skills • Written test • Oral questioning
2. Erect and dismantle scaffolding	2.1 Plan and prepare for operation 2.2 Erect scaffolding inspect, repair and / or alter scaffolding 2.3 Dismantle scaffolding and clean up	<ul style="list-style-type: none"> • Lecture / discussion • Demonstration 	<ul style="list-style-type: none"> • Observation of practical skills • Written test • Oral questioning

3.2 TRAINING DELIVERY

The delivery of training should adhere to the design of the curriculum. Delivery should be guided by the 10 basic principles of competency-based TVET:

- The training is based on curriculum developed from the competency standards;
- Learning is modular in its structure;
- Training delivery is learner-centered and should accommodate individualized and self-paced learning strategies;
- Training is based on work that must be performed;
- Training materials are directly related to the competency standards and the curriculum modules;
- Assessment is based in the collection of evidence of the performance of work to the industry required standard;
- Training is based both on and off-the-job components;
- Training program allows for recognition of prior learning (RPL) or current competencies;
- Training allows for multiple entry and exit; and
- Training programs are registered with the UTPRAS.

The competency-based TVET system recognizes various types of delivery modes, both on and off-the-job as long as the learning is driven by the competency standards specified by the industry. The following training modalities may be adopted when designing training programs:

- The dualized mode of training delivery is preferred and recommended. Thus programs would contain both in-school and in-industry training or fieldwork components. Details can be referred to the Dual Training System (DTS) Implementing Rules and Regulations.
- Modular/self-paced learning is a competency-based training modality wherein the trainee is allowed to progress at his own pace. The trainer facilitates the training delivery
- Peer teaching/mentoring is a training modality wherein fast learners are given the opportunity to assist the slow learners.
- Supervised industry training or on-the-job training is an approach in training designed to enhance the knowledge and skills of the trainee through actual experience in the workplace to acquire specific competencies prescribed in the training regulations.

- Distance learning is a formal education process in which majority of the instruction occurs when the students and instructor are not in the same place. Distance learning may employ correspondence study, or audio, video or computer technologies.
- Project-Based Instruction is an authentic instructional model or strategy in which students plan, implement and evaluate projects that have real world applications.

3.3 TRAINEE ENTRY REQUIREMENTS

This section specifies the qualifications of trainees and educational experience. Other requirements like health and physical requirements are also stated. Passing entry written examinations may also be indicated if necessary.

- Good moral character
- Ability to communicate
- Physically fit and mentally healthy
- Can perform basic mathematical computation and mensuration.

3.4 LIST OF TOOLS, EQUIPMENT AND MATERIALS FOR SCAFFOLD ERECTION NC II

TOOLS		EQUIPMENT		MATERIALS	
QTY.	ITEM	QTY.	ITEM	QTY.	ITEM
25 pcs.	Hammer (claw)	1 set	Scaffolding frame type	25 pcs.	Hard hat
25 pcs.	Combination wrench	1 set	Scaffolding tubular type	25 pairs	Safety shoes
5 pcs.	Pull push rule	1 set	Scaffolding tube and fittings type	25 pcs.	Safety belt
5 pcs.	Level bar	4 pcs.	Pulley with hook	25 pairs	Gloves (leather)
5 pcs.	Plumb bob			1 roll	Rope

3.5 TRAINING FACILITIES

The training facility is based on the size of class of 25 students / trainees.

<u>Space Requirement</u>	<u>Size in Meters</u>	<u>Area in Sq. Meters</u>	<u>Total Area in Sq. Meters</u>
Contextual Learning Laboratory / Lecture Room		<u>20</u>	<u>20</u>
Learning Resource Center		<u>20</u>	<u>20</u>
Tool Room/Storage		<u>10</u>	<u>10</u>
Wash room		<u>10</u>	<u>10</u>
Circulation area		<u>60</u>	<u>60</u>
Training ground		<u>200</u>	<u>200</u>
<u>TOTAL AREA</u>			<u>320</u>

3.6 TRAINER'S QUALIFICATION FOR SCAFFOLD ERECTION NC II

- Must have undergone training on Training Methodology II (TM II) or equivalent in training/experience
- Must be a holder of National Certificate Level II or its equivalent
- Good moral character
- Must be computer literate
- Must be physically and mentally fit
- *Must have 1 year industry experience and/or teaching experience

*Optional. Only when required by the hiring institution
Reference: TESDA Board Resolution No. 2004-03

3.7 INSTITUTIONAL ASSESSMENT

Institutional assessment is undertaken by trainees to determine their achievement of units of competency. A certificate of achievement is issued for each unit of competency.

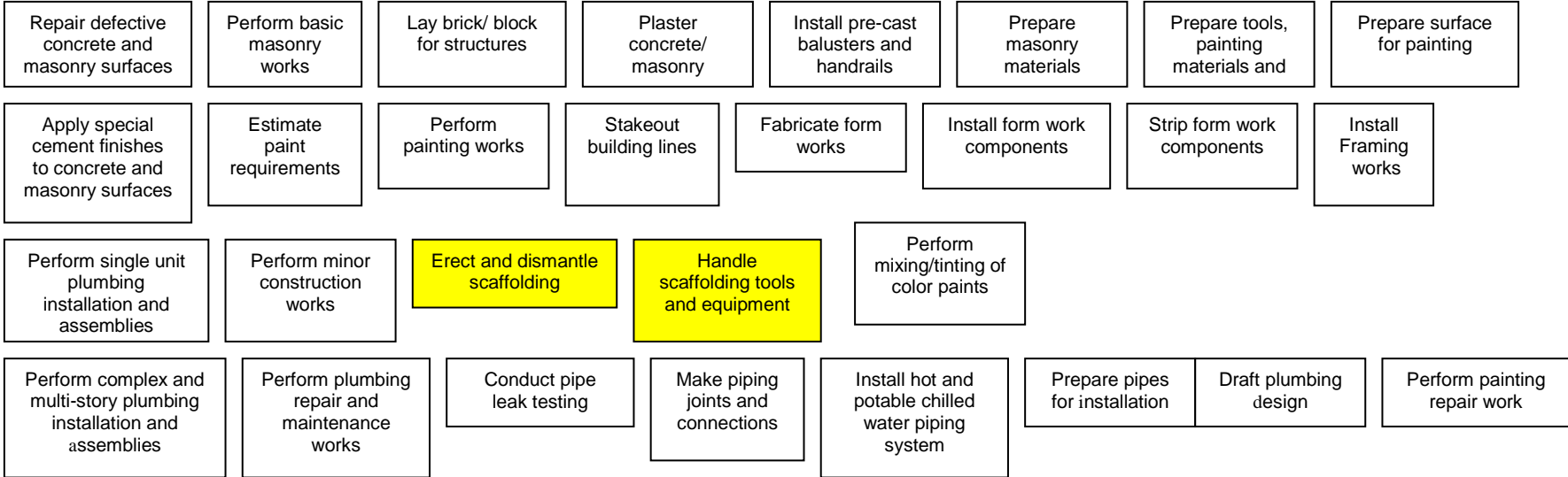
SECTION 4 NATIONAL ASSESSMENT AND CERTIFICATION ARRANGEMENTS

- 4.1. To attain the National Qualification of **Scaffolding Erection NC II**, the candidate must demonstrate competence through project-type assessment covering all the units listed in Section 1. Successful candidates shall be awarded National Certificates signed by the TESDA Director General.
- 4.2 The qualification of **SCAFFOLD ERECTION NC II** can be attained through demonstration of competence in a project-type assessment covering the following core units.
 - 4.1.1 Erect and dismantle scaffolding
 - 4.1.2 Handle scaffolding equipment and tools
- 4.3. Assessment shall focus on the core units of competency. The basic and common units shall be integrated or assessed concurrently with the core units.
- 4.4. The following are qualified to apply for assessment and certification:
 - 4.3.1 Graduates of formal, non-formal and informal including enterprise-based training programs
 - 4.4.2. Experienced Workers (wage employed or self-employed)
- 4.5. The guidelines on assessment and certification are discussed in detail in the *Procedures Manual on Assessment and Certification* and the *Guidelines on the Implementation of the Philippine TVET Qualification and Certification System (PTQCS)*.

COMPETENCY MAP CIVIL WORKS SUB-SECTOR

SCAFFOLD ERECTION NC II

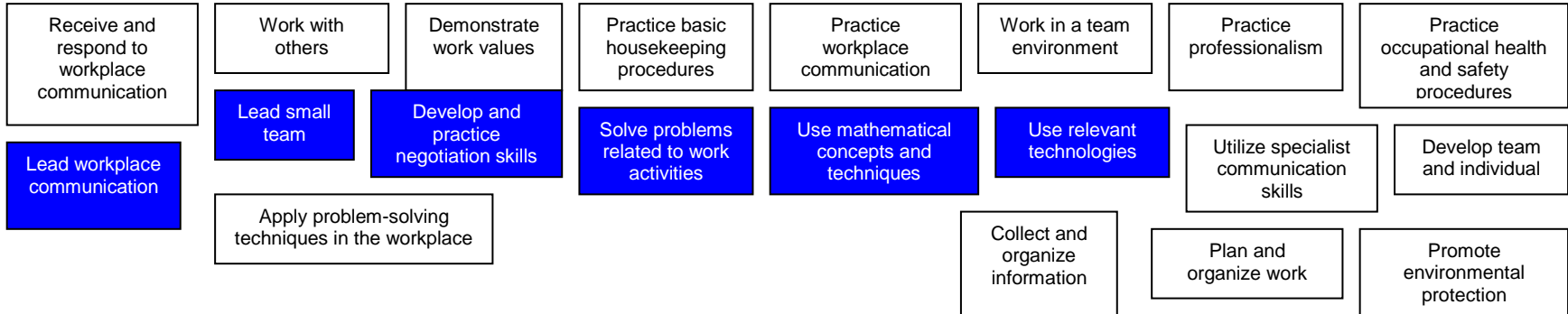
CORE COMPETENCIES



COMMON COMPETENCIES



BASIC COMPETENCIES



DEFINITION OF TERMS

1. Competency Is the application of knowledge, skills and attitudes to perform work activities to the standard expected in the workplace.
2. Certification Refers to the process of verifying and validating competencies of a person through assessment.
3. Element Refers to the building blocks of a unit of competency. It describes in outcome terms the functions that a person who works in a particular area of work is able to perform.
4. Evidence Guide It is a guide for assessment that provides information on critical aspects of competency, underpinning knowledge, underpinning skills, resource implications, context of assessment and assessment method.
5. Footing Refers to the widened base or substructure forming the foundation for a wall or a column
6. Philippine TVET Qualification Framework Refers to a comprehensive, nationally consistent framework for qualifications in the TVET sector. It also provides the parameter for the integration of learning and assessment in the middle skills development.
7. Qualification Refers to the national certificate issued by the TESDA or its accredited industry organizations in recognition that a person has achieved competencies relevant to a trade or industry.
8. Range of Variable It describes the circumstances or context in which the work is to be performed.
9. Scaffolding It is a temporary or movable platform supported on the ground or suspended; used for working at considerable heights above ground.
10. Static line It is a line attached to parachute pack and to a strap or anchor cable in an aircraft so that when the load is dropped the parachute is deployed automatically.
11. Transom Is a window above door that is flat, vertical aft end of a ship or boat as distinguished from a candle-shaped or cruiser stern
12. Unit of Competency Refers to a discrete aspect of work, which would normally be performed by only one person.

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- **THE TECHNICAL/INDUSTRY EXPERTS**

DANILO DIAZ

Trainor / Assessor
Association of Construction and Informal Workers

MEYNARDO PALARCA

Trainor
Association of Construction and Informal Workers

JOHN N. CALAMIONG, Ed.D.

Professor II
Technological University of the Philippines - Taguig Campus

DON ORIDO

Construction Safety Engineer
Association of Construction and Informal Workers

JONATHAN PATENO

Formworks Engineer
Dimensions-All Trading

JOERY VILLEGAS

Structural Planning Engineer
Ecoform System

ERNESTO YALUNG JR.

Formworks engineer
Betonval Ready Concrete

JULIE ALANES

Formworks Engineer
Dimensions-All Trading

PETER LAMARROZA

Formworks Engineer