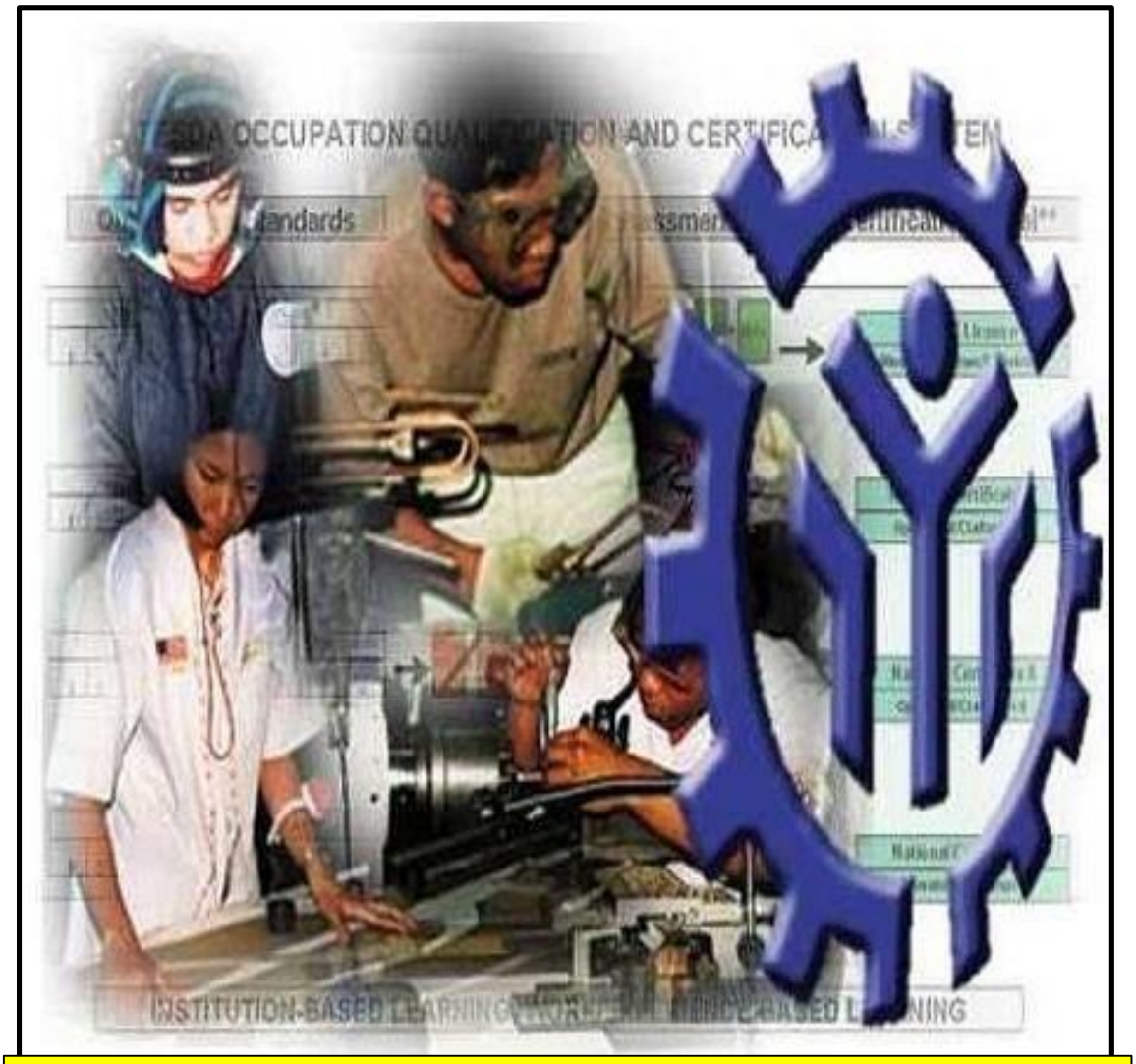
COMPETENCY STANDARDS

PHARMACEUTICAL MACHINE OPERATION LEVEL II



MANUFACTURING SECTOR

TECHNICAL EDUCATION AND SKILLS DEVELOPMENT AUTHORITY
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MANUFACTURING SECTOR

PHARMACEUTICAL MACHINE OPERATION
LEVEL II

COMPETENCY STANDARDS
PHARMACEUTICAL MACHINE OPERATION LEVEL II

Section 1 PHARMACEUTICAL MACHINE OPERATION LEVEL II

The Pharmaceutical Machine Operation Level II consists of competencies that a person must achieve in operating basic production machines in the pharmaceutical industries/ enterprises.

This Qualification is packaged from the competency map of the Manufacturing Industries as shown in Annex A.

The units of competency comprising this qualification include the following:

UNIT CODE	BASIC COMPETENCIES
400311101	Receive and respond to workplace communication
400311102	Work with others
400311103	Solve/address routine problems
400311104	Enhance self-management skills
400311105	Support innovation
400311106	Access and maintain information
400311107	Follow occupational safety and health policies and procedures
400311108	Apply environmental work standards
400311109	Adopt entrepreneurial mindset in the workplace
UNIT CODE	**COMMON COMPETENCIES**
ELC311205	Use hand tools
ELC311204	Apply quality standards
ALT311202	Perform mensuration and calculation
UNIT CODE	**CORE COMPETENCIES**
AB-HHC0305400813301	Perform pre-operating procedures for pharmaceutical machines
AB-HHC0305400813302	Operate pharmaceutical machines
AB-HHC0305400813303	Monitor in-process operation
AB-HHC0305400813304	Perform post-operating procedures for pharmaceutical machines

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

- Pharmaceutical Machine Operator

SECTION 2 COMPETENCY STANDARDS

This section gives the details of the contents of the basic, common and core units of competency required in **Pharmaceutical Machine Operation Level II.**

BASIC COMPETENCIES

UNIT OF COMPETENCY : **RECEIVE AND RESPOND TO WORKPLACE COMMUNICATION**

UNIT CODE : 400311101

UNIT DESCRIPTOR : This unit covers the knowledge, skills and attitudes required to receive, respond and act on verbal and written communication.

ELEMENT	PERFORMANCE CRITERIA ***Italicized terms*** are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
1. Follow routine spoken messages	1.1 Required information is gathered by listening attentively and correctly interpreting or understanding information/ instructions 1.2 Instructions/ information are recorded in accordance with workplace requirements 1.3 Instructions are acted upon immediately in accordance with information received 1.4 Clarification is sought from workplace supervisor on all occasions when any instruction/ information is not clear	1.1. Organizational policies/guidelines in regard to processing internal/external information 1.2. Ethical work practices in handling communications 1.3. Overview of the Communication process 1.4. Effective note-taking and questioning techniques	1.1. Conciseness in receiving and clarifying messages/ information/ communication 1.2. Accuracy in recording messages / information 1.3. Basic communication skills 1.4. Active-listening Skills 1.5. Note-taking skills 1.6. Clarifying and probing questions (questioning skills)

2. Perform workplace duties following written notices and instructions	2.1 ***Written notices and instructions*** are read and interpreted correctly in accordance with **organizational guidelines** 2.2 Routine written instructions are followed in sequence 2.3 Feedback is given to workplace supervisor based on the instructions/ information received	2.1 Organizational guidelines in regard to processing internal/ external information 2.2 Ethical work practices in handling communications 2.3 Overview of the Communication process 2.4 Effective questioning techniques (clarifying and probing)	2.1 Conciseness in receiving and clarifying messages/ information/ communication 2.2 Accuracy in recording message/ informatio n 2.3 Clarifying and probing questions (Questioning Skills) 2.4 Skills in reading and recording and labeling data 2.5 Skills in locating information

RANGE OF VARIABLES

VARIABLE	RANGE
1. Written notices and instructions	May include: 1.1. Written work instructions 1.2. Internal memos/memorandum 1.3. Business letters 1.4. External communications 1.5. Electronic mail 1.6. Briefing notes 1.7. General correspondence 1.8. Marketing materials 1.9. Guidelines/Circulars
2. Organizational guidelines	May include: 2.1. Information documentation procedures 2.2. Company guidelines and procedures 2.3. Standard Operating Procedure (SOPs) 2.4. Organization manuals 2.5. Departmental Policies and Procedures Manual 2.6. Service manual

EVIDENCE GUIDE

1. Critical aspects of Competency	Assessment requires evidence that the candidate: 1.1. Demonstrated knowledge and understanding of organizational procedures in handling verbal and written communications 1.2. Received and acted on verbal messages and instructions correctly and efficiently 1.3. Demonstrated ability in recording instructions/information 1.4. Utilized effective clarifying and probing techniques where necessary
2. Resource Implications	The following resources should be provided: 2.1. Pens 2.2. Note pads 2.3. Computer (if applicable)
3. Methods of Assessment	Competency in this unit may be assessed through: 3.1. Demonstration on communication skills (e. g., role-playing) 3.2. Oral questioning/Interview 3.3. Written Test
4. Context for Assessment	4.1. Competency may be assessed individually in the actual workplace or in a simulated environment in TESDA-accredited institutions

UNIT OF COMPETENCY : WORK WITH OTHERS
UNIT CODE : 400311102
UNIT DESCRIPTOR : This unit covers the skills, knowledge and attitudes required in working as member of a team, interacting with co-members and performing one's role in the team.

ELEMENT	PERFORMANCE CRITERIA ***Italicized terms*** are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
1. Develop effective workplace relationships	1.1. ***Duties and responsibilities*** are done in a positive manner to promote cooperation and good relationship 1.2. Assistance is sought from ***workgroup*** when difficulties arise and addressed through discussions 1.3. ***Feedback*** provided by others in the team is encouraged, acknowledged and acted upon 1.4. Differences in personal values and beliefs are respected and acknowledged during Interaction	1.1. One's role, duties and responsibilities in the workplace 1.2. Acknowledging/ receiving and giving feedback 1.3. Valuing respect and empathy in the workplace 1.4. Workplace communication protocols 1.5. Teamwork 1.6. Collaboration and team building within the enterprise	1.1. Communication skills – oral and written (e. g., requesting advice, receiving feedback) 1.2. Ability to relate to/interact with people from a range of social and cultural backgrounds
2. Contribute to work group activities	2.1. ***Support is provided to team members*** to ensure workgroup goals are met 2.2. Constructive contributions to workgroup goals and tasks are made according to ***organizational requirements*** 2.3. Information relevant to work is shared with team members to ensure designated goals are met	2.1. Importance of creative collaboration, social perceptiveness and problem sensitivity in the workplace 2.2. Organizational Requirements 2.3. Importance of initiative and dedication in group process 2.4. Office and workplace technologies and automation (hardware, software systems)	2.1. Communication skills – oral and written (e. g., requesting advice, receiving feedback) 2.2. Organizing work priorities and arrangements 2.3. Team player skills 2.4. Technology skills including the ability to select and use technology appropriate to a task

RANGE OF VARIABLES

VARIABLE	RANGE
1. Duties and responsibilities	May include: 1.1 Job description and employment arrangements 1.2 Organization's policy relevant to work role 1.3 Organizational structures 1.4 Supervision and accountability requirements including OHS 1.5 Enterprise code of conduct
2. Work group	May include: 2.1 Supervisor or manager 2.2 Peers/work colleagues and clients 2.3 Other members of the organization
3. Feedback	May include: 3.1 Formal/Informal performance appraisal 3.2 Obtaining feedback from supervisors and colleagues and clients 3.3 Personal, reflective behavior strategies 3.4 Routine organizational methods for monitoring service delivery
4. Providing support to team members	May include: 4.1 Explaining/clarifying 4.2 Helping colleagues 4.3 Providing encouragement 4.4 Providing feedback to another team member 4.5 Undertaking extra tasks if necessary
5. Organizational requirements	May include: 5.1 Goals, objectives, plans, system and processes 5.2 Legal and organization policy/guidelines 5.3 OHS policies, procedures and programs 5.4 Ethical standards 5.5 Defined resources parameters 5.6 Quality and continuous improvement processes and standards

EVIDENCE GUIDE

1. Critical aspects of competency	**Assessment requires evidence that the candidate:** 1.1. Provided support to team members to ensure goals are met 1.2. Acted on feedback from clients and colleagues 1.3. Demonstrated quality/active participation in team meetings and activities
2. Resource Implications	**The following resources should be provided:** 2.1. Access to relevant workplace or appropriately simulated environment where assessment can take place 2.2. Materials relevant to the proposed activity or task
3. Methods of Assessment	**Competency in this unit may be assessed through:** 3.1 Written Test 3.2 Role play 3.3 Interview/Oral questioning 3.4 Structured and unstructured activity
4. Context for Assessment	4.1. Competency assessment may occur in workplace or any appropriately simulated environment 4.2. Assessment shall be observed while task are being undertaken whether individually or in group

UNIT OF COMPETENCY : SOLVE/ADDRESS ROUTINE
PROBLEMS UNIT CODE : 400311103
UNIT DESCRIPTOR : This unit of covers the knowledge, skills and attitudes required to solve problems in the workplace including the application of problem solving techniques and to determine and resolve the root cause of routine problems.

ELEMENT	PERFORMANCE CRITERIA ***Italicized terms*** are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
1. Identify the problem	1.1. Desired operating/output parameters and expected quality of products/services are identified. 1.2. The nature of the problem by observation on routines are defined. 1.3. ***Problems*** are stated and specified clearly.	1.1. Competence includes mastery of knowledge and understanding of the process, normal operating parameters, and product quality to recognize non-standard situations 1.2. Competence to include the ability to apply and explain fundamental causes of problems, routine problems and to determine the corrective actions. 1.3. Relevant equipment and operational processes 1.4. Enterprise goals, targets and measures 1.5. Enterprise quality OHS and environmental requirement 1.6. Enterprise information systems and data collation 1.7. Industry codes and standards	1.1. Using range of formal problem-solving techniques (e.g., planning, attention, simultaneous and successive processing of information). 1.2. Identifying and clarifying the nature of the problem.
2. Assess fundamental causes of the problem	2.1. Problem-solving tool appropriate to the problem and the context is selected 2.2. Possible causes based on experience and the use of problem-solving tools/***basic analytical techniques*** are identified 2.3. Possible fundamental causes of problems are specified.	2.1 Competence includes a thorough knowledge and understanding of the process, normal operating parameters, and product quality to recognize non-standard situations 2.2 Competence to include the ability to apply and explain fundamental causes of problems, routine problems and to determine the corrective actions. 2.3 Relevant equipment and operational processes 2.4 Enterprise goals, targets and measures 2.5 Enterprise quality OHS	2.1 Using range of formal problem-solving techniques (e.g., planning, attention, simultaneous and successive processing of information). 2.2 Identifying extent and causes of procedural problems.

ELEMENT	PERFORMANCE CRITERIA ***Italicized terms*** are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
		and environmental requirement 2.6 Enterprise information systems and data collation 2.7 Industry codes and standards	
3. Determine corrective action	3.1. All possible options are considered for resolution of the routine problem. 3.2. Corrective actions are determined to resolve the problem and possible future causes 3.3. ***Action plans*** are developed identifying measurable objectives, resource needs and timelines in accordance with safety and operating procedures	3.1. Competence includes a thorough knowledge and understanding of the process, normal operating parameters, and product quality to recognize non-standard situations 3.2. Competence to include the ability to apply and explain, sufficient for the identification of fundamental cause, determining the corrective action and provision of recommendations 3.3. Relevant equipment and operational processes 3.4. Enterprise goals, targets and measures 3.5. Enterprise quality OHS and environmental requirement 3.6. Principles of decision making strategies and techniques 3.7. Enterprise information systems and data collation 3.8. Industry codes and standards	3.1. Using range of formal problem-solving techniques. 3.2. Identifying and clarifying the nature of the problem. 3.3. Devising and applying the best possible solution to a problem. 3.4. Evaluating the solution
4. Communicate action plans and recommendations to routine problems	4.1. Report on recommendations are prepared 4.2. Recommendations are presented to ***appropriate person***. 4.3. Recommendations are followed-up, if required	4.1. Competence includes a thorough knowledge and understanding of the process, normal operating parameters, and product quality to recognize non-standard situations 4.2. Competence to include the ability to apply and explain, sufficient for the identification of fundamental cause, determining the corrective action and provision of recommendations 4.3. Relevant equipment and	4.1. Using range of formal problem solving techniques 4.2. Identifying and clarifying the nature of the problem 4.3. Devising the best possible solution to a routine problem 4.4. Evaluating the solution 4.5. Developing action plans to

		operational processes	resolving and

ELEMENT	PERFORMANCE CRITERIA ***Italicized terms*** are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
		4.4. Enterprise goals, targets and measures 4.5. Enterprise quality, OHS and environmental requirement 4.6. Principles of decision making strategies and techniques 4.7. Enterprise information systems and data collation 4.8. Industry codes and standards	managing routine problems.

RANGE OF VARIABLES

VARIABLES	RANGE
1. Problem	May include: 1.1. Routine/non – routine processes and quality problems 1.2. Equipment selection, availability and failure 1.3. Teamwork and work allocation problem 1.4. Safety and emergency situations and incidents
2. Basic analytical techniques	May include: 2.1. Brainstorming 2.2. Case Analysis 2.3. Cause and effect diagrams 2.4. Pareto analysis 2.5. SWOT analysis 2.6. Gant chart, Pert CPM and graphs 2.7. Scattergrams
3. Action plans	May include: 3.1. Priority requirements 3.2. Measurable objectives 3.3. Resource requirements 3.4. Timelines 3.5. Coordination and feedback requirements 3.6. Safety requirements 3.7. Risk assessment 3.8. Environmental requirements
4. Appropriate person	May include: 4.1 Supervisor or manager 4.2 Peers/work colleagues 4.3 Other members of the organization

EVIDENCE GUIDE

1. Critical aspects of Competency	Assessment requires evidence that the candidate: 1.1. Identified the problem. 1.2. Determine the fundamental causes of the problem. 1.3. Determine the correct / preventive action. 1.4. Developed action plans in managing routine problems. These aspects may be best assessed using project-based learning mode of assessment and case formulation.
2. Resource Implications	Assessment will require access to a workplace over an extended period, or a suitable method of gathering evidence of operating ability over a range of situations.
3. Methods of Assessment	Competency in this unit may be assessed through: 3.1. Case Formulation 3.2. Life Narrative Inquiry (Interview) 3.3. Standardized test The unit will be assessed in a holistic manner as is practical and may be integrated with the assessment of other relevant units of competency. Assessment will occur over a range of situations, which will include disruptions to normal, smooth operation. Simulation may be required to allow for timely assessment of parts of this unit of competency. Simulation should be based on the actual workplace and will include walk through of the relevant competency components. These assessment activities should include a range of problems, including new, unusual and improbable situations that may have happened.
4. Context for Assessment	4.1 Competency may be assessed individually in the actual workplace or simulation environment in TESDA accredited institutions

UNIT OF COMPETENCY : ENHANCE SELF-MANAGEMENT SKILLS
UNIT CODE : 400311104
UNIT DESCRIPTOR : This unit covers the knowledge, skills, and attitudes in applying the ability to regulate actions, make good decisions, and show appropriate behavior based on self-awareness.

ELEMENT	PERFORMANCE CRITERIA ***Italicized terms*** are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
1. Set personal and career goals	1.1. The difference between ***personal*** and ***career goals*** are described 1.2. Clear and concise personal and career goals are developed 1.3. Characteristics of motivational goals according to Locke & Latham are identified	1.1. Definition of personal goals and career goals 1.2. SMART Model for goal setting 1.3. Five principle of goal setting according to Locke & Latham (Clarity, Challenge, Commitment, Feedback, and Task complexity)	1.1. Setting of personal and career goals 1.2. Defining, creating, and mapping personal and career goals using SMART Model for goal setting 1.3. Applying goal setting principles to personal and career goals
2. Recognize emotions	2.1. Influence that people, situations and events have on ***emotions*** are described 2.2. Importance of responding with appropriate emotions are explained 2.3. Influences on and consequences of emotional responses in a ***social and work-related contexts*** are examined	2.1. Common positive and negative emotions manifested in the workplace 2.2. Professional and non-professional behaviors in the workplace 2.3. Triggers and implications of positive and negative emotions in the workplace	2.1. Identifying sensitively the positive and negative emotions in the workplace 2.2. Responding with appropriate emotions in the workplace 2.3. Identifying possible consequences of inappropriate emotional responses in a social and work-related context
3. Describe oneself as a learner	3.1. Factors and strategies that assist learning are identified and described 3.2. Preferred **learning styles** according to VAK Learning Style Model and Kolb's Theory of Learning Styles are identified 3.3. Range of **learning strategies** appropriate to specific tasks and describe work practices that assist their learning are identified and chosen	3.1. Kolb's Theory of Learning Styles (Converger, Diverger, Assimilator, Accommodator) 3.2. VAK Learning Style Model (Visual, Auditory, Kinesthetic) 3.3. Range of learning strategies appropriate to specific tasks and describe work practices that assist their learning	3.1. Identifying factors and strategies that assist learning 3.2. Applying learning styles to positively influence school/work performance 3.3. Using appropriate learning strategies to improve study habits and learning

RANGE OF VARIABLES

VARIABLE	RANGE
1. Personal goals	May include: 1.1. Graduate from Tech-Voc training 1.2. Buy a car 1.3. Travel around the world
2. Career goals	May include but not limited to: 2.1. Graduate from Tech-Voc training 2.2. Graduate from college 2.3. Buy a car 2.4. Retire at 50 years old
3. Emotions	Positive emotions may include: 3.1. Joy 3.2. Gratitude 3.3. Hope 3.4. Serenity Negative emotions may include: 3.5. Anger 3.6. Fear 3.7. Disgust 3.8. Sadness
4. Social and work-related contexts	May include professional behavior such as: 4.1. Committed to developing and improving their skills 4.2. Professionals get the job done 4.3. They keep their word and deliver what they promise. May include non-professional behavior such as– 4.4. They engage in office politics 4.5. Bluffing and misrepresenting their skills 4.6. Blaming a colleague
5. Learning styles	May include: 5.1. Visual 5.2. Auditory 5.3. Kinesthetic 5.4. Converger 5.5. Diverger 5.6. Assimilator 5.7. Accommodator

6. Learning strategies	May include: 6.1. Explain and describe ideas with many details 6.2. Switch between ideas while studying 6.3. Use specific examples to understand abstract ideas

EVIDENCE GUIDE

1. Critical aspects of Competency	**Assessment requires evidence that the candidate:** 1.1. Developed SMART personal and career goals 1.2. Applied goal setting principles 1.3. Identified sensitively the positive and negative emotions in the workplace 1.4. Responded with appropriate emotions in the workplace 1.5. Identified possible consequences of inappropriate emotional responses in a social and work-related context 1.6. Applied learning styles to positively influence school/work performance 1.7. Developed reflective practice through realization of limitations, likes/ dislikes; through showing of self-Confidence
2. Resource Implications	The following resources for should be provided: 2.1. Access to workplace and resources
3. Methods of Assessment	Competency in this unit may be assessed through: 3.1. Demonstration or simulation with oral questioning (ex. how to recognize emotions) 3.2. Case problems involving workplace diversity issues 3.3. Third-party report
4. Context for Assessment	4.1. Competency assessment may occur in workplace or any appropriately simulated environment

UNIT OF COMPETENCY : SUPPORT INNOVATION
UNIT CODE : 400311105
UNIT DESCRIPTOR : This unit of covers the knowledge, skills and attitudes required to identify, recognize and support innovation.

ELEMENT	PERFORMANCE CRITERIA ***Italicized terms*** are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
1. Identify the need for innovation in one's area of work	1.1. The value of **innovative practices** in the workplace is recognized 1.2. Creativity in **innovation** in one's scope of work is applied 1.3. The need for innovation in own scope of work is Recognized	1.1. Clear-cut definition of innovation 1.2. Current practice in own scope of work 1.3. Workplace procedures	1.1. Contributing in brainstorming session 1.2. Examining current practice in one's scope of work 1.3. Identifying issues and concerns of one's scope of work
2. Recognize innovative and creative ideas	2.1. Opportunities within the team are identified to develop innovation 2.2. Creative ideas of coworkers pertaining to work practices are analyzed 2.3. Environment conducive for learning and innovating is maintained	2.1. Support required to generate creative ideas 2.2. Difference between innovation and creativity 2.3. Innovative climate in one's scope of work	2.1. Identifying resources required for creativity and innovation 2.2. Examining potential obstacles to and opportunities for creativity and innovation 2.3. Communicating creative ideas of co-workers
3. Support individuals' access to flexible and innovative ways of working	3.1. Individuals and key people are reinforced to identify innovative ideas to achieve outcomes 3.2. Sharing of best practices using flexible and innovative ways of working is accomplished 3.3. Obstacles to progress in implementing flexible and innovative ways of working are recognized	3.1. The role of employees/workers in the improvement of practices in the organization 3.2. Best practices using flexible and innovative ways of working 3.3. Obstacles in implementing innovation in one's scope of Work	3.1. Encouraging co-workers to generate and develop ideas 3.2. Evaluating potential obstacles to and opportunities for creativity and innovation 3.3. Sharing of best practices related to innovation and creativity

RANGE OF VARIABLES

VARIABLE	RANGE
1. Innovative practices	May include: 1.1 Self-directed support 1.2 Community based services 1.3 Working within a collaborative arrangement 1.4 Making scope of work more efficient
2. Innovation	May include: 2.1 New ideas 2.2 Original ideas 2.3 Different ideas 2.4 Methods or tools

EVIDENCE GUIDE

1. Critical aspects of Competency	Assessment requires evidence that the candidate: 1.1. Identified need for innovation in the area of work 1.2. Recognized innovative and creative ideas 1.3. Pursed agreement for flexible and innovative ways of working 1.4. Supported individuals and people to access flexible and innovative ways of working
2. Resource Implications	Specific resources for assessment 2.1. Evidence of competent performance should be obtained by observing an individual in an information management role within the workplace or operational or simulated environment.
3. Methods of Assessment	Competency in this unit may be assessed through: 3.1. Written Test 3.2. Interview The unit will be assessed in a holistic manner as is practical and may be integrated with the assessment of other relevant units of competency. Assessment will occur over a range of situations, which will include disruptions to normal, smooth operation. Simulation may be required to allow for timely assessment of parts of this unit of competency. Simulation should be based on the actual workplace and will include walk through of the relevant competency components.
4. Context for Assessment	4.1. Competency may be assessed individually in the actual workplace or simulation environment in TESDA accredited institutions

UNIT OF COMPETENCY : ACCESS AND MAINTAIN INFORMATION UNIT
CODE : 400311106
UNIT DESCRIPTOR : This unit of covers the knowledge, skills and attitudes required to identify, gather, interpret and maintain information.

ELEMENT	PERFORMANCE CRITERIA *Italicized terms* are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
1. Identify and gather needed information	1.1. Required ***information*** is identified based on requirements. 1.2. Sources to produce required information are identified and accessed 1.3. Report information is collected, organized and recorded 1.4. Organize information is collected in a way that enables easy access and retrieval by other Staff	1.1. Policies, procedures and guidelines relating to information handling in the public and private sector, including confidentiality, privacy, security, freedom of information 1.2. Data collection and management procedures 1.3. Cultural aspects of information and meaning 1.4. Sources of public sector work-related information 1.5. Public/private sector standards	1.1. Handling policies, procedures and guidelines relating to information handling in the public sector, including confidentiality, privacy, security, freedom of information 1.2. Collecting data and managing procedures 1.3. Practicing cultural aspects of information and meaning 1.4. Using public/private sector standards
2. Search for information on the internet or an intranet	2.1. Engine is search to find and select appropriate information 2.2. Suitable techniques is use to make it easier to find useful information and to pass it on to others 2.3. Records are use where useful information came from 2.4. Results are used for searches of useful information 2.5. ***Search engine*** is chosen appropriate for the information that is needed 2.6. Searches are carry out as per requirements	2.1. Find and select appropriate information 2.2. Techniques in finding useful information Records are use where useful information came from 2.3. Search engines for information	2.1. Finding and selecting search engine to find and select appropriate information 2.2. Using suitable techniques to find useful information easier 2.3. Using records 2.4. Carrying out Searches

ELEMENT	PERFORMANCE CRITERIA ***Italicized terms*** are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
3. Examine information	2.5. Information and its ***sources*** are evaluated for relevance and validity to business and/or client requirements. 2.6. Information is examined as required to identify key issues. 2.7. Detailed evaluation of information is carried out as required using relevant techniques including mathematical calculations.	3.1. Data evaluation procedures 3.2. Cultural aspects of information and meaning 3.3. Sources of public sector work-related information 3.4. Public sector standards	3.1. Evaluating data 3.2. Practicing cultural aspects of information and meaning 3.3. Using public sector standards
4. Secure information	4.1. Basic file-handling techniques are used for the software 4.2. Techniques is used to handle, organize and secure information	4.1. Policies, procedures and guidelines relating to information handling in the public sector, including confidentiality, privacy, security, freedom of information 4.2. Basic file-handling techniques 4.3. Techniques in handling, organizing and saving files 4.4. Electronic and manual filing systems	4.1. Handling policies, procedures and guidelines relating to information handling in the public sector, including confidentiality, privacy, security, freedom of information 4.2. Using basic file-handling techniques is used for the software 4.3. Using different techniques in handling, organizing and saving files 4.4. Using electronic and manual filing systems
5. Manage information	5.1. Information and records are maintained to ensure data and system integrity using a range of standard and complex information systems and operations. 5.2. Routine data and records are reconciled as required. 5.3. Inadequacies in system/s relating to information retrieval are identified and corrected or reported to relevant staff as required.	5.1. Policies, procedures and guidelines relating to information handling in the public sector, including confidentiality, privacy, security, freedom of information 5.2. Data collection and management procedures 5.3. Organizational information handling and storage procedures 5.4. Cultural aspects of information and meaning	5.1. Handling policies, procedures and guidelines relating to information handling in the public sector, including confidentiality, privacy, security, freedom of information 5.2. Collecting data and managing procedures 5.3. Handling organizational information and storage procedures 5.4. Practicing cultural

ELEMENT	PERFORMANCE CRITERIA ***Italicized terms*** are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
		5.5. Sources of public sector work-related information 5.6. Public sector standards 5.7. Databases and data storage systems	aspects of information and meaning 5.5. Using public sector standards 5.6. Managing databases and data storage systems

RANGE OF VARIABLES

VARIABLE	RANGE
1. Information	May include: 1.1. Property 1.2. Organizational 1.3. Technical reference
2. Search engine	May include: 2.1. Crawler-based search engine 2.1.1. Google 2.1.2. AlltheWeb 2.1.3. AltaVista 2.2. Human-powered directories 2.2.1. Yahoo directory 2.2.2. Open directory 2.2.3. Looksmart
3. Sources	May include: 3.1. Other IT systems 3.2. Manually created 3.3. Within own organization 3.4. Outside own organization 3.5. Geographically remote

EVIDENCE GUIDE

1. Critical aspects of Competency	**Assessment requires evidence that the candidate:** 1.1 Identified and gathered needed information 1.2 Searched for information on the internet or an intranet 1.3 Studied and interpreted information 1.4 Handled files 1.5 Maintained information
2. Resource Implications	**Specific resources for assessment** 2.1. Evidence of competent performance should be obtained by observing an individual in an information management role within the workplace or operational or simulated environment.
3. Methods of Assessment	**Competency in this unit may be assessed through:** 3.1. Written Test 3.2. Interview 3.3. Portfolio The unit will be assessed in a holistic manner as is practical and may be integrated with the assessment of other relevant units of competency. Assessment will occur over a range of situations, which will include disruptions to normal, smooth operation. Simulation may be required to allow for timely assessment of parts of this unit of competency. Simulation should be based on the actual workplace and will include walk through of the relevant competency components.
4. Context for Assessment	4.1. In all workplace, it may be appropriate to assess this unit concurrently with relevant teamwork or operation units.

UNIT OF COMPETENCY : FOLLOW OCCUPATIONAL SAFETY AND HEALTH POLICIES AND PROCEDURES

UNIT CODE : 400311107

UNIT DESCRIPTOR : This unit covers the knowledge, skills and attitudes to identify relevant occupational safety and health policies and procedures, perform relevant occupational safety and health procedures, and comply with relevant occupational safety and health policies and standards

ELEMENT	PERFORMANCE CRITERIA ***Italicized terms*** are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
1. Identify relevant occupational safety and health policies and procedures	1.1 Related ***occupational safety and health risks and hazards*** are recognized based on ***OSH work standards*** 1.2 ***OSH requirements/ regulations*** towards work are determined in accordance to workplace policies and procedures 1.3 ***Incident/ Emergency procedures*** relevant to workplace are identified based on relevant OSH work standards	1.1. Occupational safety and health risks and hazards 1.2. OSH work standards 1.3. Government approved Occupational Safety and Health Policies and regulations 1.4. Terms related to occupational safety and health 1.5. Workplace process and procedures 1.6. Standard emergency plan and procedures	1.1 Observation skills 1.2 Critical thinking skills 1.3 Communication skills
2. Perform relevant occupational safety and health procedures	2.1 Safety devices are checked in accordance with workplace OSH work standards 2.2 ***OSH Work instructions*** are followed in accordance with workplace policies and procedures* 2.3 ***Personal protective equipment*****,** materials, tools, machinery, and equipment are utilized according to OSH work Standards	2.1 OSH Work instructions Personal protective equipment 2.2 Safe handling procedures of tools, equipment and materials 2.3 Standard emergency plan and procedures 2.4 Different OSH control measures 2.5 Standard accident and illness reporting procedures	2.1 Communication skills 2.2 Knowledge management 2.3 Organizing skills 2.4 Observation skills
3. Comply with relevant occupational safety and health policies and standards	3.1 ***Preventive Control Measures*** are identified in accordance with OSH work standards 3.2 OSH requirements are obeyed in accordance with workplace policies and procedures 3.3 Incident/ Emergency procedures are executed based on OSH Procedures	3.1 OSH Preventive Control Measures 3.2 Principles of 5S 3.3 Environmental requirements relative to industrial wastes disposal 3.4 OSH requirements relative to safe handling and disposal of materials 3.5 Personal hygiene practices	3.1 Communication skills 3.2 Knowledge management 3.3 Organizing skills 3.4 Critical thinking skills 3.5 Observation skills

RANGE OF VARIABLES

VARIABLE	RANGE
1. Occupational Safety and Health Risks and Hazards	May include: 1.1 Physical hazards – impact, illumination, pressure, noise, vibration, extreme temperature, radiation 1.2 Biological hazards- bacteria, viruses, plants, parasites, mites, molds, fungi, insects 1.3 Chemical hazards – dusts, fibers, mists, fumes, smoke, gasses, vapors 1.4 Ergonomics 1.5 Psychological factors – over exertion/ excessive force, awkward/static positions, fatigue, direct pressure, varying metabolic cycles 1.6 Physiological factors – monotony, personal relationship, work out cycle 1.7 Safety hazards (unsafe workplace condition) – confined space, excavations, falling objects, gas leaks, electrical, poor storage of materials and waste, spillage, waste and debris 1.8 Unsafe workers' act (Smoking in off-limited areas, Substance and alcohol abuse at work)
2. OSH Work Standards	May include: 2.1 OSHS Rule 1090 Hazardous Materials 2.2 OSHS Rule Gas & Electric Welding and Cutting Operations 2.3 OSHS Rule 1120 Hazardous Work Processes 2.4 OSHS Rule 1150 Materials Handling & Storage 2.5 OSHS Rule 1180 Internal Combustion Engine 2.6 OSHS Rule 1210 Electrical Safety 2.7 OSHS Rule 1420 Logging 2.8 OSHS Rule 1410 Construction Safety 2.9 OSHS Rule 1950 Pesticides & Fertilizers
3. OSH Requirements/ Regulations	May include: 3.1 Clean Air Act 3.2 Building code 3.3 National Electrical and Fire Safety Codes 3.4 Waste management statutes and rules 3.5 Permit to Operate 3.6 Philippine Occupational Safety and Health Standards 3.7 Department Order No. 13 (Construction Safety and Health) 3.8 ECC regulations 3.9 Republic Act No. 11058 – An Strengthening Compliance with Occupational Safety and Health

4. Incident and Emergency Procedures	May include: 4.1 Chemical spills 4.2 Equipment/vehicle accidents 4.3 Explosion

VARIABLE	RANGE
	4.4 Fire Drill 4.5 Gas leak 4.6 Injury to personnel 4.7 Structural collapse 4.8 Earthquake drill 4.9 Toxic and/or flammable vapors emission 4.10 Evacuation 4.11 Isolation 4.12 Basic life support/CPR 4.13 Decontamination 4.14 Calling designed emergency personnel
5. OSH Work Instructions	May include: 5.1 Worker's Participation Policies 5.2 Company Environment Safety and Health Policies 5.3 Continual OSH Improvement Instructions 5.4 Education and Training 5.5 Safety and Health Policy Statements 5.6 Mission and Vision Statements 5.7 Operating Instructions and Policies
6. Personal Protective Equipment	May include: 6.1 Arm/Hand guard, gloves 6.2 Eye protection (goggles, shield) 6.3 Hearing protection (ear muffs, ear plugs) 6.4 Hair Net/cap/bonnet 6.5 Hard hat 6.6 Face protection (mask, shield) 6.7 Apron/Gown/coverall/jump suit 6.8 Anti-static suits 6.9 High-visibility reflective vest

7. Preventive Control Measures	May include: 7.1 Eliminate the hazard (i.e., get rid of the dangerous machine 7.2 Isolate the hazard (i.e. keep the machine in a closed room and operate it remotely; barricade an unsafe area off) 7.3 Substitute the hazard with a safer alternative (i.e., replace the machine with a safer one) 7.4 Use administrative controls to reduce the risk (i.e. give trainings on how to use equipment safely; OSH-related topics, issue warning signages, rotation/shifting work schedule) 7.5 Use engineering controls to reduce the risk (i.e. use safety guards to machine) 7.6 Use personal protective equipment 7.7 Safety, Health and Work Environment Evaluation 7.8 Periodic and/or special medical examinations of workers

EVIDENCE GUIDE

1. Critical aspects of Competency	**Assessment requires evidence that the candidate:** 1.1. Recognize related occupational safety and health risks and hazards based on OSH work standards 1.2. Identify incident/emergency procedures relevant to workplace based on relevant OSH work standards 1.3. Follow the OSH work instructions in accordance with workplace policies and procedures 1.4. Utilize personal protective equipment, materials, tools, machinery, and equipment according to OSH work standards 1.5. Obey OSH requirements in accordance with workplace policies and procedures 1.6. Executed incident/ emergency procedures based on OSH Procedures
2. Resource Implications	**The following resources should be provided:** 2.1 Facilities, materials tools and equipment necessary for the activity
3. Methods of Assessment	**Competency in this unit may be assessed through:** 3.1 Observation/Demonstration with oral questioning 3.2 Third party report
4. Context for Assessment	4.1 Competency may be assessed in the work-place or in a simulated work-place setting

UNIT OF COMPETENCY : APPLY ENVIRONMENTAL WORK STANDARDS
UNIT CODE : 400311108

UNIT DESCRIPTOR : This unit covers the knowledge, skills and attitude to identify environmental work hazards, follow environment work procedures and comply with environmental requirements.

ELEMENT	PERFORMANCE CRITERIA ***Italicized terms*** are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
1. Identify environmental work hazards	1.1. Related ***environmental hazards*** are recognized based on ***environmental work standards*** 1.2. Environmental work standards are interpreted in accordance to relevant policies 1.3. ***Required resources*** to minimize effect of environmental hazards are prepared based on relevant environmental work standards	1.1. Environmental Hazards 1.2. Environmental Work Standards 1.3. Required Resources 1.4. OSH Standards 1.5. Fight against poverty rights 1.6. Environmental Protection 1.7. Respect of Human Rights	1.1. Critical thinking 1.2. Problem solving 1.3. Observation Skills
2. Follow environmental work procedures	2.1. ***Environmental protection*** pre-cautionary activities are practiced based on environmental work procedures *2.2.* Work activities are executed in accordance with ***Environmental work Procedures*** 2.3. Environmental Protection Post-Activities are accomplished based on environmental work procedures*	2.1. Environmental Protection 2.2. Environmental Work Procedures 2.3. Renewable Energies	2.1. Critical thinking 2.2. Problem solving 2.3. Observation Skills
3. Comply with environmental work requirements	3.1. Required resources are utilized in accordance with workplace environmental policies 3.2. ***Environmental hazardous and non-hazardous*** *materials* are stored in accordance with ***environmental regulations*** 3.3. Hazardous and Non-hazardous Wastes disposed according to environmental regulations	3.1. Environmental Work Procedures 3.2. Environmental Laws 3.3. Environmental Hazardous and Non-Hazardous Materials	3.1. Critical thinking 3.2. Problem solving 3.3. Observation Skills

RANGE OF VARIABLES

VARIABLE	RANGE
1. Environmental Hazards	May include: 1.1 Tobacco Smoke 1.2 Asbestos 1.3 Lead 1.4 Combustion Gases 1.5 Chemicals 1.6 Pesticides 1.7 Pollutants 1.8 Contaminated Drinking Water 1.9 Noise 1.10 Dust
2. Environmental Work Standards	May include: 2.1 Air Quality Standards 2.2 Emission Standards 2.3 ISO 14001: Environmental Management System 2.4 Environmental Statements 2.5 Environmental Quality Standards 2.6 Work Environment Measurement Standard
3. Required Resources	May include: 3.1 Electric 3.2 Water 3.3 Fuel 3.4 Telecommunications 3.5 Supplies and Materials 3.6 Trash Cans 3.7 Relevant Data Sheets 3.8 Barriers or Barricades
4. Environmental Protection	May include protection against 4.1 Overconsumption of Resources 4.2 Destruction of Ecosystems 4.3 Habitat Destructions 4.4 Extinction of Wildlife 4.5 Pollutions 4.6 Water Degradation

5. Environmental Work Procedures	May include: 5.1 Environmental pollution control measures 5.2 Oil and Fuel use 5.3 Disposal and Reuse 5.4 Herbicide applications 5.5 Breed Bird Mitigation 5.6 Tree Removal Works 5.7 Erosion Protection 5.8 Scrub Clearance 5.9 Bankside sediment clearance

VARIABLE	RANGE
6. Environmental Hazardous and Non-Hazardous Materials	May include but not limited: 6.1 Acids 6.2 Adhesives 6.3 Aerosols 6.4 Asbestos 6.5 Batteries 6.6 Chemicals 6.7 Compact fluorescent lamps 6.8 Drugs 6.9 Dyes 6.10 E-Waste 6.11 Gasoline 6.12 Grease 6.13 Lead 6.14 Motor Oil 6.15 Solvents 6.16 Weed Killers
7. Environmental Regulations	May include: 7.1 Clean Air Act 7.2 Clean Water Act 7.3 Endangered Species Act 7.4 Resource Conservation and Recovery Act 7.5 Cave Resources and Management Act 7.6 Fisheries Code 7.7 Forestry Code 7.8 Mining Act

EVIDENCE GUIDE

1. Critical aspects of Competency	**Assessment requires evidence that the candidate:** 1.1. Interpreted the Environmental Work Standards in accordance to relevant policies 1.2. Prepared required resources to minimize effects of environmental hazards based on relevant environmental work standards 1.3. Practiced environmental protection precautionary activities based on environmental work procedures 1.4. Executed work activities in accordance with environmental work procedures 1.5. Accomplished environmental protection post-activities based on environmental work procedures 1.6. Stored environmental hazardous and non-hazardous materials in accordance with environmental regulations 1.7. Disposed hazardous and non-hazardous wastes according to environmental regulations
2. Resource Implications	**The following resources should be provided:** 2.1. Workplace with storage facilities 2.2. Tools, materials and equipment relevant to the tasks (ex. Cleaning tools, cleaning materials, trash bags, etc.) 2.3. PPE 2.4. Manuals and references
3. Methods of Assessment	**Competency in this unit may be assessed through:** 3.1. Demonstration 3.2. Oral questioning 3.3. Written examination
4. Context for Assessment	4.1. Competency assessment may occur in workplace or any appropriately simulated environment 4.2. Assessment shall be observed while task are being undertaken whether individually or in-group

UNIT OF COMPETENCY : ADOPT ENTREPRENEURIAL MINDSET IN THE WORKPLACE

UNIT CODE : 400311109

UNIT DESCRIPTOR : This unit covers the outcomes required to support and internalize an entrepreneurial mindset and observe basic entrepreneurial practices in the workplace.

ELEMENT	PERFORMANCE CRITERIA ***Italicized terms*** are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
1. Determine entrepreneurial mindset	1.1. ***Entrepreneurial mindset*** in the workplace is determined from enterprise practices and policies. 1.2. ***Entrepreneurial mindset*** in the workplace is studied and ***affirmed*** based on current enterprise practices 1.3. Clarification from reliable ***sources*** is sought regarding entrepreneurial ***mindset*** and corporate culture.	1.1. Workplace policies and practices relating to entrepreneurship 1.2. Elements of corporate culture 1.3. Entrepreneurial mindset 1.4. Entrepreneurial practices in the workplace 1.5. Desirable attitudes: ● Patience ● Willingness to learn ● Attention to details	1.1. Identifying entrepreneurial mindset 1.2. Studying and affirming entrepreneurial mindset 1.3. Selecting and emulating desirable entrepreneurial practices 1.4. Communication skills
2. Identify entrepreneurial practices	2.1. Entrepreneurial practices are determined based on enterprise requirements 2.2. Entrepreneurial practices are performed following workplace and client requirements. 2.3. Cost-effective measures are complied with reference to workplace best practices	2.1. Quality assurance practices 2.2. Workplace and client requirements 2.3. Types of cost-effective measures 2.4. Workplace quality policy 2.5. Attitude: ● Patience ● Attention to details	2.1. Performing quality assurance practices 2.2. Complying quality assurance requirements 2.3. Complying to cost-effective measures 2.4. Communication skills

RANGE OF VARIABLES

VARIABLE	RANGE
1. Entrepreneurial mindset	May include workplace thinking relating to: 1.1. Economy in the use of resources 1.2. Waste management 1.3. Quality-consciousness 1.4. Cost-consciousness 1.5. Safety- and health- consciousness
2. Quality assurance practices	May include: 2.1. Use of quality procedures manual 2.2. Quality policy 2.3. Best/Good practices 2.4. Continuous improvement program
3. Reliable sources	May include: 3.1. Supervisors 3.2. Colleagues 3.3. Clients/Partners

EVIDENCE GUIDE

1. Critical aspects of competency	**Assessment requires evidence that the candidate:** 1.1 Demonstrated affirmation of entrepreneurial mindset 1.2 Observed entrepreneurial practices 1.3 Complied with cost effective measures
2. Resource Implications	**The following resources should be provided:** 2.1 Simulated or actual workplace 2.2 Tools, materials and supplies needed to demonstrate the required tasks 2.3 References and manuals
3. Methods of Assessment	**Competency in this unit may be assessed through :** 3.1 Written examination 3.2 Demonstration/observation with oral questioning 3.3 Third-party report
4. Context of Assessment	4.1 Competency may be assessed in workplace or in a simulated workplace setting 4.2 Assessment shall be observed while tasks are being undertaken whether individually or in-group

COMMON COMPETENCIES

UNIT TITLE : USE HAND TOOLS

UNIT CODE : ELC311205

UNIT DESCRIPTOR : This unit covers the knowledge, skills and attitudes on the safe use, handling and maintenance of tools.

ELEMENT	PERFORMANCE CRITERIA ***Italicized terms*** are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
1. Plan and prepare for tasks to be undertaken	1.1. Tasks to be undertaken are properly identified 1.2. Appropriate hand tools are identified and selected according to the task requirements	1.1. Planning and preparing task/ activity 1.2. Electronics hand tools and their uses 1.3. Function, operation and common faults in electronics hand tools.	1.1. Preparing require tasks 1.2. Communic ation skills 1.3. Using hand tools properly
2. Prepare hand tools	2.1 Appropriate hand tools are checked for proper operation and safety 2.2 Unsafe or faulty tools are identified and marked for repair according to standard company procedure	2.1 Checking and safety requirements in handling tools 2.2 Standard procedures in checking, identification and marking of safe or unsafe/ faulty tools	2.1 Identifying and checking hand tools 2.2 Marking of safe or unsafe/ faulty hand tools
3. Use appropriate hand tools and test equipment	3.1 ***Tools*** are used according to tasks undertaken 3.2 All safety procedures in using tools are observed at all times and ***appropriate personal protective equipment (PPE***) are used 3.3 Malfunctions, unplanned or unusual events are reported to the supervisor	3.1 Safety requirements in using electronics hand tools and test equipment 3.2 Electronics hand tools for adjusting, dismantling, assembling, finishing, and cutting. 3.3 Processes, Operations, Systems - Proper usage and care of hand tools - Types and uses of test equipment 3.4 Common faults in the use of hand tool	3.1 Reading skills required to interpret work instruction and numerical skills 3.2 Using PPE properly 3.3 Problem solving in emergency situation

4. Maintain hand tools	4.1 Tools are not dropped to avoid damage 4.2 Routine ***maintenance*** of tools undertaken according to standard operational procedures, principles and techniques 4.3 Tools are stored safely in appropriate locations in accordance with manufacturer's specifications or standard operating procedures	4.1 Safety requirements in maintenance of hand tools 4.2 Processes, Operations, Systems - Maintain of tools -Storage of hand tools	4.1 Checking and cleaning hand tools 4.2 Storing hand tools properly

RANGE OF VARIABLES

VARIABLE	RANGE
1 Tools	May include: 1.1 Hand tools for adjusting, dismantling, assembling, finishing, and cutting.
2 Personal Protective Equipment (PPE)	May include: 2.1 Gloves 2.2 Protective eyewear 2.3 Apron/overall
3 Maintenance	May include: 3.1 Cleaning 3.2 Lubricating 3.3 Tightening 3.4 Simple tool repairs 3.5 Hand sharpening 3.6 Adjustment using correct procedures

EVIDENCE GUIDE

1 Critical Aspect of Competency	Assessment requires evidence that candidate: 1.1 Demonstrated safe working practices at all times. 1.2 Communicated information about processes, events or tasks being undertaken to ensure a safe and efficient working environment 1.3 Planned tasks in all situations and reviewed task requirements as appropriate 1.4 Performed all tasks to specification 1.5 Maintained and stored tools in appropriate location
2 Method of Assessment	Competency in this unit must be assessed through: 2.1 Observation 2.2 Oral questioning
3 Resource implication	The following resources should be provided: 3.1. Screw Drivers 3.2. Pliers 3.3. Punches 3.4. Wrenches 3.5 Hammer 3.6 Torque Driver
4 Context of Assessment	4.1 Assessment may be conducted in the workplace or in a simulated environment

UNIT TITLE : APPLY QUALITY STANDARDS

UNIT CODE : ELC311204

UNIT DESCRIPTOR : This unit covers the knowledge, skills, attitudes and values needed to apply quality standards in the workplace. The unit also includes the application of relevant safety procedures and regulations, organization procedures and customer requirements.

ELEMENT	PERFORMANCE CRITERIA ***Italicized terms*** are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
1. Assess quality of received materials	1.1. Work instruction is obtained and work is carried out in accordance with standard operating procedures. 1.2. Received ***materials*** are checked against workplace standards and specifications. 1.3. Faulty materials related to work are identified and isolated. 1.4. ***Faults*** and any identified causes are recorded and/or reported to the supervisor concerned in accordance with workplace procedures. 1.5. Faulty materials are replaced in accordance with workplace procedures.	1.1. Relevant production processes, materials and products 1.2. Characteristics of materials, software and hardware used in production processes 1.3. Quality checking procedures 1.4. Quality Workplace procedures 1.5. Identification of faulty materials related to work	1.1. Reading skills required to interpret work instruction 1.2. Critical thinking 1.3. Interpreting work instructions
2. Assess own work	2.1 ***Documentation*** relative to quality within the company is identified and used. 2.2 Completed work is checked against workplace standards relevant to the task undertaken. 2.3 ***Errors*** are identified and isolated. 2.4 Information on the quality and other indicators of production performance are recorded in accordance with workplace procedures. 2.5 In cases of deviations from specific ***quality standards***, causes are documented and reported in accordance with the workplace' s standards operating procedures.	2.1. Safety and environmental aspects of production processes 2.2. Fault identification and reporting 2.3. Workplace procedure in documenting completed work 2.4. Workplace Quality Indicators	2.1. Carry out work in accordance with OHS policies and procedures

3. Engage in quality improvement	3.1 Process improvement procedures are participated in relative to workplace assignment. 3.2 Work is carried out in accordance with process improvement procedures. 3.3 Performance of operation or quality of product of service to ensure ***customer*** satisfaction is monitored.	3.1. Quality improvement processes 3.2. Company customers defined	3.1. Solution providing and decision-making 3.2. Practice company process improvement procedure

RANGE OF VARIABLES

VARIABLE	RANGE
1 Materials	1.1 May include: 1.1.1. Manuals 1.1.2. Job orders 1.1.3. Instructional videos
2 Faults	2.1 May include: 2.1.1. Materials not to specification 2.1.2. Materials contain incorrect/outdated information 2.1.3. Materials that do not conform with any regulatory agencies
3 Documentation	3.1 May include: 3.1.1 Organization work procedures 3.1.2 Manufacturer's instruction manual 3.1.3 Customer requirements 3.1.4 Forms
4 Errors	4.1 Errors may be related but not limited to the following: 4.1.1. Deviation from the requirements of the Client 4.1.2. Deviation from the requirement of the organization
5 Quality Standards	5.1 Quality standards may be related but not limited to the following: 5.1.1. Materials 5.1.2. Hardware 5.1.3. Final product 5.1.4. Production processes 5.1.5. Customer service
6 Customer	6.1 May include: 6.1.1. Co-worker 6.1.2. Supplier/Vendor 6.1.3. Client 6.1.4. Organization receiving the product or service

EVIDENCE GUIDE

1 Critical Aspects of Competency	Assessment requires evidence that candidate: 1.1 Carried out work in accordance with the company's standard operating procedures 1.2 Performed task according to specifications 1.3 Reported defects detected in accordance with standard operating procedures 1.4 Carried out work in accordance with the process improvement procedures
2 Methods of Assessment	Competency in this unit may be assessed through: 2.1 Observation 2.2 Questioning 2.3 Practical demonstration
3 Resource implication	The following resources should be provided: 3.1 Materials and component parts and equipment to be used in a real or simulated electronic production situation
4 Context of Assessment	4.1 Assessment may be conducted in the workplace or in a simulated environment

UNIT TITLE : PERFORM MENSURATION AND CALCULATION

OPERATIONS UNIT CODE : ALT311202

UNIT DESCRIPTOR : This unit covers the knowledge, skills and attitudes and values needed identify, care, handle and use measuring instruments

ELEMENT	PERFORMANCE CRITERIA ***Italicized terms*** are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
1. Select measuring instruments	1.1. Object or component to be measured is identified 1.2. Correct specifications are obtained from relevant source 1.3. Measuring tools are selected in line with job requirements	1.1. Category of measuring instruments 1.2. Types and uses of measuring instruments 1.3. Shapes and dimensions 1.4. Formulas for volume, areas, perimeters of plane and geometric figures	1.1. Identifying and selecting measuring instruments 1.2. Visualizing objects and shapes
2.carry out measurements and calculations	2.1. Appropriate measuring instrument is selected to achieve required outcome 2.2. Accurate measurements are obtained for job 2.3. Calculation needed to complete work tasks are performed using the four basic process of addition (+), subtraction (-), multiplication (x), and division (/) 2.4 ***Calculation*** 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.	2.1. Calculation and measurement 2.2. Four fundamental operations 2.3. Linear measurement 2.4. Dimensions 2.5. Unit conversion 2.6. Ratio and Proportion	2.1. Performing calculation by addition, subtraction, multiplication and division; 2.2. Interpreting formulas for volume, areas, perimeters of plane and geometric figures 2.3 Handling of measuring instruments

3. Maintain measuring instruments	3.1. ***Measuring instruments*** are not dropped to avoid damage 3.2. Measuring instruments are cleaned before and after using 3.3. Proper storage of instruments undertaken according to the manufacturer's specifications and standard operating procedure.	3.1. Types of measuring instruments and their uses 3.2. Safe handling procedures in using measuring instruments 3.3. Four Fundamental operation of mathematics 3.4. Formula for volume, area, perimeter and other geometric figures	3.1. Handling and maintaining measuring instruments

RANGE OF VARIABLES

VARIABLE	RANGE
1. Measuring Instruments	May include: 1.1. Weighing balance 1.2. Torque gauge 1.3. Combination gauge 1.4. Caliper 1.5. Disintegration tester 1.6. Hardness tester 1.7. Friability Tester 1.8. Moisture analyzer
2. Calculation	May include: 2.1. Volume 2.2. Area 2.3. Displacement 2.4. Inside diameter 2.5. Circumference 2.6. Length 2.7. Thickness 2.8. Outside diameter 2.9. Taper 2.10. Out of roundness

EVIDENCE GUIDE

1. Critical aspect of competency	Assessment requires evidence that the candidate: 1.1. Selected proper measuring instruments according to tasks 1.2. Carried out measurement and calculations 1.3. Maintained and stores instruments
2. Resource implication	The following resources MUST be provided: 2.1 Workplace location 2.2 Measuring instrument appropriate to servicing processes 2.3. Instructional materials relevant to the propose activity
3. Method of assessment	Competency in this unit must be assessed through: 3.1. Observation 3.2. Oral questioning
4. Context of Assessment	4.1. Assessment may be conducted in the workplace or in a simulated work environment

CORE COMPETENCIES

UNIT OF COMPETENCY : PERFORM PRE- OPERATING PROCEDURES FOR PHARMACEUTICAL MACHINES

UNIT CODE : AB-HHC0305400813301

UNIT DESCRIPTOR : This unit covers the knowledge, skills and attitude required in the machine setting and preparation of materials used in the pre-operating procedures of pharmaceutical machines.

ELEMENT	PERFORMANCE CRITERIA ***Italicized terms*** are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
1. Perform visual check of the machines	1.1. ***Pharmaceutical Machines*** are checked for functionality and damages as per checklist. 1.2. ***Machine parts*** are selected and installed to meet the requirements of the operation. 1.3. Worn or damaged machine parts are identified and reported to ***authorized persons*** as required.	**SCIENCE** 1.1. Machine 1.2. Machine Parts **TECHNOLOGY** 2.1. Selection and installation of machine parts to be used in the operation and function 2.2. Current Good Manufacturing Practices (cGMP) and Standard Operating Procedures (SOPs) **ENVIRONMENT** 2.3. Safety and emergency procedures in the workplace **COMMUNICATION** 1.3. Batch record required information 1.4. Documentation reports on worn out or damage parts 1.5. Accomplishment of machine checklist	1.1. Identifying machine parts 1.2. Detection of damages 1.3. Following safety protocol 1.4. Accomplishing checklist 1.5. Communicating worn or damaged parts to authorized person

		1.6. Verbal and non-verbal communication 1.7. Work instruction 1.8. Good Documentation Practices (GDP)	
2. Set the machine as per product requirement	2.1. Check the machine lubrication if sufficient. 2.2. Identify the appropriate ***lubricant*** to use and lubricate machine parts as needed in accordance with the machine manual. 2.3. Check sufficient supply of required ***utilities***. 2.4. Set the machine as per product requirement. 2.5. Abnormalities in the machine setting are identified and reported to authorities. 2.6. Safety and emergency procedures are followed.	**SCIENCE** 1.1. Types of lubricants 1.2. Basic hand tools **TECHNOLOGY** 1.1. Machine parts requiring lubrication 1.2. Lubrication techniques and processes per machine 1.3. Machine setting as per product requirement 1.4. Current Good Manufacturing Practices (cGMP) and Standard Operating Procedures (SOPs) **ENVIRONMENT** 1.1. Safety and emergency procedures in the workplace	2.1. Reading, comprehension and interpretation of machine manual 2.2. Identifying machine parts requiring lubrication 2.3. Determination and measurement of required utilities 2.4. Following machine setting as per product requirement 2.5. Identifying abnormalities in the machine setting 2.6. Communicating skills 2.7. Following safety procedure

		MATHEMATICS 1.1. Volume 1.2. Unit Conversion **COMMUNICATION** 1.1. Batch record required information 1.2. Verbal and non-verbal communication 1.3. Work instruction 1.4. Preparation of reports 1.5. Good Documentation Practices (GDP)	
3. Prepare starting materials and bulk product to be used	3.1. ***Starting materials*** and ***bulk products*** are withdrawn from specific ***storage areas***. 3.2. The quantity and quality of the starting materials issued are checked against the bill of materials. 3.3. The manufacturing ***environmental condition*** based on product requirement is checked. 3.4. Noted discrepancies are reported to authorized person.	**SCIENCE** 1.1. Quality attributes of the materials 1.2. Relative Humidity 1.3. Room Temperature 1.4. Pressure Differential **TECHNOLOGY** 1.1. Current Good Manufacturing Practices (cGMP) and Standard Operating Procedures (SOPs) **MATHEMATICS** 1.1. Mensuration and calculation 1.2. Data interpretation **ENVIRONMENT** 1.1. Storage area and specific environmental conditions for	3.1. Interpretation of Bill of Materials 3.2. Attention to details 3.3. Disposition in determining compliance of starting material and bulk product on quality attributes 3.4. Following cGMP and SOPs 3.5. Interpretation of environmental monitoring devices results 3.6. Communication skills

		starting materials and bulk products **COMMUNICATION** 1.1. Batch record required information 1.2 Bill of Materials 1.3 Logbooks and forms 1.4 Preparation of reports 1.5 Verbal and non-verbal communication 1.6 Work instruction 1.7 Good Documentation Practices (GDP)	
4. Documentation of the pre - operating procedures for pharmaceutical machines	4.1. Properly fill-out the necessary information required in the logbooks, forms and batch record. 4.2. The manufacturing environmental conditions are recorded. 4.3. Discrepancies and / or deviations are reported as needed.	**SCIENCE** 1.1. Relative Humidity 1.2. Room Temperature 1.3. Pressure Differential **TECHNOLOGY** 1.1. Current Good Manufacturing Practices (cGMP) and Standard Operating Procedures (SOPs) **COMMUNICATION** 1.1. Batch record required information 1.2. Logbooks and forms 1.3. Good Documentation Practices (GDP) 1.4. Written communication 1.5. Work instruction	4.1. Accomplishing logbooks, forms and batch record 4.2. Following cGMP, SOPs and the principles of GDP 4.3. Writing discrepancy and / or deviation reports

		1.6. Preparation of reports	

RANGE OF VARIABLES

VARIABLE	RANGE
1. Pharmaceutical Machines	May include: 1.1. Compounding Machines 1.1.1. Blender / Mixer 1.1.2. Drying Equipment 1.1.3. Milling / Granulating Equipment 1.2. Tableting Machine 1.3. Encapsulation Machine 1.4. Blistering Machine
2. Machine Parts	May include: Compounding Machine: 2.1. Propeller / Blades 2.2. Product bin 2.3. Gaskets 2.4. Filters Tableting Machine: 2.5. Punches & Dies 2.6. Product hopper 2.7. Turret assembly Encapsulation Machine: 2.8. Tamping pins 2.9. Product hopper 2.10. EGC hopper 2.11. Turret assembly Blistering Machine: 2.12. Plate / Mold / Roller 2.13. Feeding assembly 2.14. Die cutter 2.15. Guide rails
3. Authorized Person	May include: 3.1. Production Supervisor 3.2. Production Foreman 3.3. Quality Assurance Personnel 3.3. Engineering Maintenance
4. Lubricant	May include: 4.1. Motor oil 4.2. Gear oil 4.3. Hydraulic oil 4.4. Food grade oil
5. Utilities	May include: Compounding 5.1. Steam Compounding / Compression / Encapsulation / Blister 5.2. Compressed air

	5.3. Water
6. Starting Materials	May include: Raw Materials: 6.1. Active Pharmaceutical Ingredients 6.2. Excipients 6.3. Empty Gelatin Capsule Packaging Materials: 6.4. Blister Foil 6.5. PVC / PVdC / Alu/alu
7. Bulk Products	May include: 7.1. Bulk products for Encapsulation 7.2. Bulk products for Tableting 7.3. Bulk products for Blistering
8. Storage Area	May include: 8.1. Raw material storage area 8.2. Bulk product storage area 8.3. Packaging material storage area
9. Environmental Conditions	May include: 9.1. Relative Humidity 9.2. Room Temperature 9.3. Pressure Differential

EVIDENCE GUIDE

1. Critical Aspects of Competency	Assessment requires evidence that the candidate: 1.1 Demonstrated ability to identify the machine features 1.3 Demonstrated the ability to perform visual check of the machine for functionality and damages 1.4 Demonstrated ability to perform pre-operation checking procedures. 1.5 Demonstrated ability to accomplish machine logbooks and batch records. 1.6 Followed all safety procedures
2. Resource Implications	The following resources should be provided: 2.1 Appropriate work area for machine operation 2.2 Access to machines and manuals 2.3 Tools and equipment relevant with the requirements of the job
3. Methods of Assessment	Competency in this unit may be assessed through: 3.1 Simulation 3.2 Interview / Oral Questioning 3.3 Knowledge Assessment Exam
4. Context of Assessment	4.1 Competency maybe assessed in actual workplace or at the designated TESDA accredited Assessment Center.

UNIT OF COMPETENCY : OPERATE PHARMACEUTICAL MACHINES

UNIT CODE : CS-ELC0301410132302

UNIT DESCRIPTOR : This unit covers the knowledge, skills and attitude required to perform pharmaceutical machine operation, identify issues and troubleshooting.

ELEMENT	PERFORMANCE CRITERIA ***Italicized terms*** are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
1. Conduct trial run	1.1. Trial run is conducted following the instructions in the batch record in compliance with the associated SOPs. 1.2. Initial samples are measured using the appropriate testing instruments and checked for conformance with the product specifications. 1.3. ***Machine adjustments*** are performed as needed. 1.4. Observations are noted in the batch record and abnormalities are reported to authorized persons.	**SCIENCE** 1.1. Product specifications 1.2. Basic hand tools and instruments 1.3. Types and characteristics of pharmaceutical machines 1.3 Root cause analysis **TECHNOLOGY** 1.1. Common problems associated with the machine setting 1.2. Machine adjustment 1.3. Machine basic troubleshooting **ENVIRONMENT** 1.1. Safety and emergency procedures in the workplace **MATHEMATICS** 1.1. Mensuration and calculation 1.2. Data interpretation	1.1. Accomplishing batch record 1.2. Interpreting results from trial runs 1.3. Communicating issues encountered 1.4. Root cause analysis 1.5. Machine basic troubleshooting

		COMMUNICATION 1.1. Batch record required information 1.2. Preparation of reports 1.3. Verbal and non-verbal communication 1.4. Work instruction 1.5. Good Documentation Practices (GDP)	
2. Operate the pharmaceutical machines	2.1 The pharmaceutical machine is operated appropriately based on the ***machine characteristics*** and Standard Operating Procedures (SOPs). 2.2 Feeding units are replenished and maintained. 2.3 Machine output is collected as per Standard Operating Procedures (SOPs). 2.4 Deviations and discrepancies are identified and reported in accordance with the SOPs. 2.5. Safety procedures are followed.	**SCIENCE** 1.1 Types and characteristics of pharmaceutical machines **TECHNOLOGY** 1.2 Machine setting 1.3 Machine feeding units 1.4 Current Good Manufacturing Practices (cGMP) and Standard Operating Procedures (SOPs) **ENVIRONMENT** 1.1 Safety and emergency procedures in the workplace **COMMUNICATION** 1.1. Batch record required information 1.2. Batch record required information 1.3. Work instruction 1.4. Preparation of	2.1 Following machine setting as per product requirement 2.2 Comprehension skills 2.3 Following cGMP and SOPs 2.4 Communicating deviations and discrepancies to authorities 2.5 Following safety procedure

		reports 1.5. Verbal and non-verbal communication 1.6. Good Documentation Practices (GDP)	
3. Resolve production issues encountered to ensure product conformance with specifications	3.1 Identify ***production issues*** directly causing product non-conformance with specifications. 3.2 Troubleshoot identified production issues through machine setting adjustments. 3.3 Deviations and discrepancies are identified and reported in accordance with the SOPs.	**SCIENCE** 1.1. Product specifications 1.2. Root cause analysis 1.3. Machine adjustable parts **TECHNOLOGY** 1.1 Current Good Manufacturing Practices (cGMP) and Standard Operating Procedures (SOPs) 1.2 Machine basic troubleshooting **ENVIRONMENT** 1.1 Safety and emergency procedures in the workplace **COMMUNICATION** 1.1. Batch record required information 1.2. Work instruction 1.3. ~~Preparation of corrective/ preventive action report~~ Preparation of reports 1.4. Verbal and non-verbal	3.1 Root cause analysis 3.2 Machine basic troubleshooting 3.3 Following cGMP and SOPs 3.4 Communicating deviations and discrepancies to authorities 3.5 Honesty to disclose product non-conformances and deviations 3.6 Perseverance to resolve issues encountered

		communication 1.5. Good Documentation Practices (GDP)	

RANGE OF VARIABLES

VARIABLE	RANGE
1. Machine Adjustments	May include: 1.1. Moisture content 1.2. Weight of the tablets / capsules 1.3. Dimension of the tablets / capsules 1.4. Hardness of the tablets 1.5. Molding and sealing of the blistered packs
2. Machine Characteristics	May include: 2.1. Capacity 2.2. Capability 2.3. Limitation
3. Production Issues	May include: Machine: 3.1. Machine malfunction 3.2. Damage in machine parts Non-conformance on product specifications: 3.3. Moisture content 3.4. Hardness 3.5. Weight 3.6. Dimension 3.7. Friability 3.8. Disintegration time 3.9. Physical appearance 3.10. Sealing properties

EVIDENCE GUIDE

1. Critical Aspect of Competency	Assessment requires evidence that the candidate: 1.1 Performed trial run following the instructions in the batch record 1.2 Product samples were checked for conformance with product specifications 1.3 Identified issues and appropriate actions were taken 1.4 Machine adjustments were made to meet product specifications 1.5 Reported deviations and discrepancies to authorized person 1.6 Followed all safety procedures
2. Resource Implications	The following resources should be provided: 2.1 Appropriate work area for machine operation 2.2 Access to machines and manuals 2.3 Tools and equipment relevant with the requirements of the job
3. Method of Assessment	Competency in this unit may be assessed through: 3.1 Simulation 3.2 Interview / Oral Questioning 3.3 Knowledge Assessment Exam
4. Context of Assessment	4.1 Competency maybe assessed in actual workplace or at the designated TESDA accredited Assessment Center.

UNIT OF COMPETENCY : MONITOR IN-PROCESS OPERATION

UNIT CODE : AB-HHC0305400813303

UNIT DESCRIPTOR : This unit covers the knowledge, skills and attitude required to ensure consistency of product quality through proper monitoring of production controls while in-process.

ELEMENT	PERFORMANCE CRITERIA ***Italicized terms*** are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
1. Monitor product quality while in-process	1.1. Monitor consistency of product quality conformance with specifications 1.2. All ***in-process control tests*** are performed as per required frequency in the batch record. 1.3. All results of the test are documented in the batch document record. 1.4. Operation is stopped once the quality of the product is out of the specification. 1.5. Perform the appropriate machine adjustments as needed. 1.6. Deviations and discrepancies are reported to authorized person	**SCIENCE** 1.1. Product specification 1.2. Different types of product testing instruments 1.3. Root cause analysis **TECHNOLOGY** 1.1. In-process control test procedures 1.2. Use of product testing instruments 1.3. Current Good Manufacturing Practices (cGMP) and Standard Operating Procedures (SOPs) **MATHEMATICS** 1.1. Mensuration and calculation 1.2. Data interpretation **COMMUNICATION** 1.1. Batch record required information	1.1. Correct use of product testing instruments to achieve accurate results 1.2 Root cause analysis 1.3. Comprehension skills 1.4. Analytical ability 1.5. Interpreting results 1.6. Decision making skills 1.7. Following cGMP, GDP and SOPs

		1.2. Good Documentation Practices (GDP) 1.3. Decision making 1.4. Comprehension 1.5. Verbal and non-verbal communication 1.6. Work instruction 1.7. Preparation of reports	
2. Compute in-process monitoring results	2.1. In-process monitoring results are computed in accordance with Standard Operating Procedures (SOPs). 2.2. Yield reconciliation is computed in accordance with standard operating procedures. 2.3. Results of all computed information are recorded in accordance with Standard Operating Procedures (SOPs). 2.4. Deviations and discrepancies are reported to authorized persons.	**SCIENCE** 1.1 Yield reconciliation formula 1.2 Formula for in process monitoring tests **TECHNOLOGY** 1.1. Current Good Manufacturing Practices (cGMP) and Standard Operating Procedures (SOPs) **MATHEMATICS** 1.1. Basic Mathematics - addition, subtraction, multiplication, division 1.2. Unit conversion & percentage 1.3. Allowable percentage	2.1. Use of basic calculator 2.2. Analytical skills 2.3. Communicating deviations and discrepancies to authorities

		yield of the production stage **COMMUNICATION** 1.1. Batch record required information 1.2. Good Documentation Practices (GDP) 1.3. Verbal and non-verbal communication 1.4. Work instruction 1.5. Preparation of reports	
3. Monitor external variables affecting product quality	3.1. ***External variables*** in the production operation are monitored for compliance with the requirements 3.2. Operation is stopped once the external variables do not meet the requirements. 3.3. Appropriate corrective / preventive actions 3.4. Deviations and discrepancies are reported to authorized persons.	**SCIENCE** 1.1. Relative Humidity 1.2. Room Temperature 1.3. Pressure Differential 1.4. Pressure of compressed air 1.5. Amount of steam generated from source **TECHNOLOGY** 1.1. Current Good Manufacturing Practices (cGMP) and Standard Operating Procedures (SOPs) 1.2. Appropriate corrective / preventive actions **COMMUNICATION** 1.1 Batch record required information	3.1. Attention to detail 3.2. Alertness 3.3. Following cGMP and SOPs 3.4. Communicating deviations and discrepancies to authorities

		1.2 Logbooks and forms 1.3 Good Documentation Practices (GDP) 1.4 Decision making 1.5 Comprehension 1.6 Verbal and non-verbal communication 1.7 Work instruction 1.8 Preparation of reports	

RANGE OF VARIABLE

VARIABLE	RANGE
1. In-process Control Tests	May include: 1.1 Moisture content of bulk products 1.2 Weight of tablets/ capsules 1.3 Dimension of tablets/ capsules 1.4 Hardness of tablets 1.5 Friability of tablets 1.6 Disintegration time of tablets 1.7 Leaking of blistered packs
2. External Variables	May include: 2.1. Relative Humidity 2.2. Room Temperature 2.3. Pressure Differential 2.4. Pressure of compressed air 2.5. Amount of steam generated from source

EVIDENCE GUIDE

VARIABLE	RANGE
1. Critical Aspects of Competency	Assessment requires evidence that the candidate: 1.1. Monitored the product quality while in-process 1.2. Correctly computed the in-process test results and yield reconciliation 1.3. Monitored the external variables affecting product quality 1.4. Reported deviations and discrepancies to authorized person
2. Resource Implications	The following resources should be provided: 2.1. Appropriate work area for machine operation 2.2. Access to machines and manuals 2.3. Tools and equipment relevant with the requirements of the job
3. Methods of Assessment	Competency in this unit may be assessed through: 3.1. Simulation 3.2. Interview / Oral Questioning 3.3. Knowledge Assessment Exam
4. Context for Assessment	4.1 Competency maybe assessed in actual workplace or at the designated TESDA accredited Assessment Center.

UNIT OF COMPETENCY : **PERFORM POST- OPERATING PROCEDURES FOR PHARMACEUTICAL MACHINES**

UNIT CODE : **AB-HHC0305400813304**

UNIT DESCRIPTOR : This unit covers the knowledge, skills and attitude required to perform cleaning, storing and documentation in the post-operating procedures of pharmaceutical machines.

ELEMENT	PERFORMANCE CRITERIA ***Italicized terms*** are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
1. Perform post-operating procedures	1.1. The pharmaceutical machine is turned off after operation. 1.2. ***Excess materials*** are weighed and contained properly for disposal or return to the warehouse. 1.3. ***Rejected items*** are accounted for and prepared for disposal. 1.4. Products and materials are purged from the ***processing rooms***.	**TECHNOLOGY** 1.1. Current Good Manufacturing Practices (cGMP) and Standard Operating Procedures (SOPs) **ENVIRONMENT** 1.1 Safety and emergency procedures in the workplace **MATHEMATICS** 1.1 Mensuration and calculation 1.2 Mass and volume **COMMUNICATION** 1.1 Batch record required information 1.2 Logbooks and forms 1.3 Management of rejected and excess materials 1.4 Work instruction 1.5 Verbal and non-verbal communication 1.6 Good Documentation Practices (GDP)	1.1. Following cGMP and SOPs 1.2. Attention to details

2. Perform cleaning of pharmaceutical machines	2.1. ***Machine parts*** are dismantled for cleaning. 2.2. ***Cleaning solutions*** are prepared. 2.3. Cleaning procedures are performed in accordance with the SOPs. 2.4. Walk-around inspection check is performed.	**SCIENCE** 1.1 Approved cleaning solutions 1.2 Chemicals 1.3 Mixtures 1.4 Machine parts 1.5 Basic hand tools **TECHNOLOGY** 1.1 Use of cleaning tools / aides 1.2 Preparation of cleaning solutions 1.3 Current Good Manufacturing Practices (cGMP) and Standard Operating Procedures (SOPs) **ENVIROMENT** 1.1 Proper handling of chemicals 1.2 Safety and emergency procedures in the workplace **MATHEMATICS** 1.1 Mensuration and calculation 1.2 Dilution 1.3 Ratio and proportion **COMMUNICATION** 1.1 Work instruction 1.2 Logbooks and forms 1.3 Verbal and non-verbal communication 1.4 Good Documentation Practices (GDP)	2.1. Following cGMP and SOPs 2.2. Attention to details

3. Store product and machine parts	3.1. Bulk products are stored in the appropriate storage area. 3.2. Machine parts are returned to the tool room / custodian. 3.3. ***Equipment status tags*** are prepared and attached to the pharmaceutical machine. 3.4. Seek machine certification from an authorized person. 3.5. Storage logbooks / forms are accomplished.	**TECHNOLOGY** 1.1. Current Good Manufacturing Practices (cGMP) and Standard Operating Procedures (SOPs) 1.2. Storage condition requirements of products **COMMUNICATION** 1.1 Equipment status tags 1.2 Logbooks and forms 1.3 Good Documentation Practices (GDP) 1.4 Preparation of forms and reports 1.5 Verbal and non-verbal communication 1.6 Work instruction	3.1. Following cGMP, GDP and SOPs 3.2. Attention to details 3.3. Accomplishing logbooks / forms
4. Document post - operating procedures for pharmaceutical machines	4.1. Properly fill-out the necessary information required in the logbooks, forms and batch record. 4.2. Discrepancies and / or deviations are reported as needed.	**COMMUNICATION** 1.1. Batch record required information 1.2. Logbooks and forms 1.3. Written communication 1.4. Work instruction 1.5. Preparation of reports 1.6. Good Documentation Practices (GDP)	4.1. Accomplishing logbooks / forms 4.2. Following cGMP, SOPs and the principles of GDP 4.3. Writing discrepancy and / or deviation reports

RANGE OF VARIABLES

VARIABLE	RANGE
1. Excess Materials	May include: 1.1. Raw Material 1.2. Packaging Materials
2. Rejected Items	May include: 2.1. Bulk product 2.2. Raw Materials 2.3. Packaging Materials
3. Processing Room	May include: 3.1. Compounding room 3.2. Tableting room 3.3. Encapsulation room 3.4. Blistering room
4. Cleaning Solutions	May include: 4.1. Soap Solution 4.2. Disinfectants
5. Equipment Status Tags	May include: 5.1. Cleaned 5.2. For cleaning 5.3. For repair

EVIDENCE GUIDE

1. Critical Aspects of Competency	Assessment requires evidence that the candidate: 1.2. Demonstrated the ability to perform post-operating procedures for pharmaceutical machines 1.3. Demonstrated the ability to perform cleaning of pharmaceutical machines 1.4. Demonstrated the ability to store product and machine parts 1.5. Demonstrated the ability to perform documentation of post-operating procedures for pharmaceutical machines
2. Resource Implications	The following resources should be provided: 2.1. Appropriate work area for machine operation 2.2. Access to machines and manuals 2.3. Tools and equipment relevant with the requirements of the job
3. Methods of Assessment	Competency in this unit may be assessed through: 3.1. Simulation 3.2. Interview / Oral Questioning 3.3. Knowledge Assessment Exam
4. Context for Assessment	4.1 Competency maybe assessed in actual workplace or at the designated TESDA accredited Assessment Center.

GLOSSARY OF TERMS	
1. **Cleaning**	refers to the process of removing dirt, dust, impurities, or contaminants from surfaces, objects, or environments to maintain hygiene, functionality, or aesthetic appearance
2. **Current Good Manufacturing Practices (cGMP)**	that part of Quality Management which ensures that products are consistently produced and controlled to the quality standards appropriate to their intended use and as required by the Marketing Authorization or product specification the main components include: • **People** – need to have clear responsibilities and trained for the work they do • **Products** – have specifications for starting materials, components, intermediate and finished products • **Processes** – all steps are defined to ensure consistency in product quality • **Procedures** – cover all critical processes and should be documented • **Premises** – designed to prevent cross contamination
3. **Deviation**	refer to departures or variations from an expected standard, procedure, guideline, or norm
4. **Good Documentation Practices (GDP)**	a systematic procedure of preparation, reviewing, approving, issuing, recording, storing and archival of documents ensuring the integrity of data Follow the **ALCOA++** principle of data integrity: • **Attributable** – activity can be traced back to a specific individual • **Legible** – data is readable and permanent • **Contemporaneous** – data is recorded at the time of the activity • **Original** – documents must be original or true copies • **Accurate** – data should be error free • **Complete** – all data must be properly recorded • **Consistent** – data are orderly and chronological • **Enduring** – all data must be maintained, intact and accessible all throughout the lifetime of records • **Available** – all data are accessible as needed
5. **Lubricants**	are substances used to reduce friction, wear, and heat generation between two surfaces in

	contact.
6. **Machine**	a device or system consisting of interconnected parts that work together to perform a specific function, typically to make work easier or more efficient.
7. **Pharmaceutical Machine**	refers to any equipment or machinery used in the manufacturing, processing, packaging, and quality control of pharmaceutical products, such as tablets, capsules, powders, syrups, creams, and injectables. These machines are designed to ensure precision, hygiene, and compliance with stringent regulatory standards, such as Good Manufacturing Practices (GMP).
8. **Standard Operating Procedure (SOP)**	a detailed document that provides a step by step instructions for carrying out routine tasks or processes SOPs in pharmaceutical machine operation may include: • **Machine Operating SOPs** – a detailed and standardized procedure on how to operate a specific machine from pre-operation up to post operation • **Machine Cleaning SOPs** – a comprehensive written instructions designed to standardize the cleaning activity to ensure effectiveness and maintain organization inside the work area. This may include SOPs in the preparation of cleaning materials, use of appropriate cleaning tools and utilization of 5S method in cleaning and workplace organization. • **Other Related SOPs** – other written procedures related to pharmaceutical machine operations with direct impact in controlling
9. **Trial run**	refers to a preliminary or test operation of a process, system, or activity conducted to evaluate its functionality, effectiveness, or readiness before full-scale implementation.
10. **Yield reconciliation**	refers to the process of comparing and verifying the actual yield (output) of a production process against the theoretical or expected yield. This is done to ensure accuracy, identify variances, and account for losses or deviations during the production cycle.
11. **Product specifications**	refers to a detailed document outlining the exact characteristics, features, dimensions, materials, and performance requirements of a product
12. **Relative Humidity**	is a measure of how much water vapor is in the air compared to the maximum amount of water vapor the air could hold at that specific temperature
13. **Discrepanci**es	notable differences between the required quantity / quality of materials, products, or component in a production process versus the

	actual observation
14. **Output**	is the amount of goods / product produced in a given time period
15. **Corrective Action**	action taken to eliminate cause of non-conformity, defect or other undesirable situation, in order to prevent recurrence
16. **Preventive Action**	action taken to eliminate the cause of potential non-conformity, defect or other undesirable situation, in order to prevent occurrence
17. **Root Cause Analysis**	methods used to identify the true causes of failure or deviation for immediate implementation of appropriate actions
18. **Product Quality**	refers to the characteristics, features, and attributes of a product that determine its ability to meet the product specifications

ACKNOWLEDGEMENTS

The Technical Education and Skills Development Authority (TESDA) wishes to extend thanks and appreciation to the many representatives of business, industry, academe and government agencies who donated their time and expertise to the development and validation of these Competency Standards.

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