TRAINING REGULATIONS

GRAINS PRODUCTION NC II

AGRICULTURE, FORESTRY AND FISHERY SECTOR

TECHNICAL EDUCATION AND SKILLS DEVELOPMENT AUTHORITY

East Service Road, South Luzon Expressway (SLEX), Taguig City, Metro Manila

Technical Education and Skills Development Act of 1994
(Republic Act No. 7796)

Section 22, "Establishment and Administration of the National Trade Skills Standards" of the RA 7796 known as the TESDA Act mandates TESDA to establish national occupational skill standards. The Authority shall develop and implement a certification and accreditation program in which private industry group and trade associations are accredited to conduct approved trade tests, and the local government units to promote such trade testing activities in their respective areas in accordance with the guidelines to be set by the Authority.

The Training Regulations (TR) serve as basis for the:

1 Competency assessment and certification;
2 Registration and delivery of training programs; and
3 Development of curriculum and assessment instruments.

Each TR has four sections:

Section 1 **Definition of Qualification** - refers to the group of competencies that describes the different functions of the qualification.

Section 2 The **Competency Standards** - gives the specifications of competencies required for effective work performance.

Section 3 **Training Arrangements** - contains information and requirements in designing training program for certain Qualification. It includes curriculum design, training delivery; trainee entry requirements; tools and requirements; tools and equipment; training facilities and trainer's qualification.

Section 4 **Assessment and Certification Arrangements** - describes the policies governing assessment and certification procedure

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TRAINING REGULATIONS FOR GRAINS PRODUCTION NC II

SECTION 1 GRAINS PRODUCTION NC II QUALIFICATION

The **GRAINS PRODUCTION NC II** Qualification consists of competencies that a Rice/Corn farmer and Rice/Corn grower must achieve to conduct variety and seed selection, perform land preparation, carry-out crop establishment, manage crop and conduct harvest and post-harvest operations. It also includes performing manual land preparation.

The Units of Competency comprising this Qualification include the following:

UNIT CODE	BASIC COMPETENCIES
500311105	Participate in workplace communication
500311106	Work in team environment
500311107	Practice career professionalism
500311108	Practice occupational health and safety procedures

UNIT CODE	COMMON COMPETENCIES
AGR321201	Apply safety measures in farm operations
AGR321202	Use farm tools and equipment
AGR321203	Perform estimation and basic calculation

UNIT CODE	CORE COMPETENCIES
AFF 611305	Conduct variety and seed selection
AFF 611306	Perform land preparation
AFF 611307	Carry-out crop establishment
AFF 611308	Manage crop
AFF 611309	Conduct of harvest and post-harvest operations

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

- ❑ **Rice/Corn Farmer**
- ❑ **Rice/Corn Grower**

SECTION 2 COMPETENCY STANDARDS

This section gives the details of the contents of the basic, common and core units of competency required in **GRAINS PRODUCTION 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 ***Italicized terms*** are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
1. Obtain and convey workplace information	1.1. Specific and relevant information is accessed from ***appropriate sources*** 1.2. Effective questioning, active listening and speaking skills are used together and convey information 1.3. Appropriate ***medium*** 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 ***storage*** of information are used 1.7. Personal interaction is carried out clearly and concisely	• Effective communication • Different modes of communication • Written communication • Organizational policies • Communication procedures and systems • Technology relevant to the enterprise and the individual's work responsibilities	• Follow simple spoken language • Perform routine workplace duties following simple written notices • Participate in workplace meetings and discussions • Complete work related documents • Estimate, calculate and record routine workplace measures • Ability to relate to people of social range in the workplace • Gather and provide information in response to workplace requirements

ELEMENT	PERFORMANCE CRITERIA ***Italicized terms*** are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
2. Participate in workplace meetings and discussions	2.1 Team meetings are at ended on time 2.2 Own opinions are clear expressed and those of others are listened to without interruption 2.3 Meeting inputs are consistent with the meeting purpose and established ***protocols*** 2.4 ***Workplace interactions*** 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	• Effective communication • Different modes of communication • Written communication • Organizational policies • Communication procedures and systems • Technology relevant to the enterprise and the individual's work responsibilities	• Follow simple spoken language • Perform routine workplace duties following simple written notices • Participate in workplace meetings and discussions • Complete work related documents • Estimate, calculate and record routine workplace measures • Ability to relate to people of social range in the workplace • Gather and provide information in response to workplace requirements
3. Complete relevant work related documents	3.1 Range of forms relating to conditions of employment are completed accurately and legibly 3.2 Workplace data is recorded on standard workplace forms and documents 3.3 Basic mathematical processes are used for routine calculations 3.4 Errors in recording information on forms/ documents are identified and properly acted upon 3.5 Reporting requirements to supervisor are completed according to organizational guidelines	• Effective communication • Different modes of communication • Written communication • Organizational policies • Communication procedures and systems • Technology relevant to the enterprise and the individual's work responsibilities	• Complete work related documents • Basic mathematical processes of addition, subtraction, division and multiplication • Gather and provide information in response to workplace requirements

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 4.2. Telephone message forms 4.3. 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

1. Critical aspects of Competency	**Assessment requires evidence that the candidate:** 1.1. Prepared written communication following standard format of the organization 1.2. Accessed 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
2. Resource Implications	**The following resources <u>MUST</u> be provided:** 2.1. Fax machine 2.2. Telephone 2.3. Writing materials 2.4. Internet
3. Methods of Assessment	**Competency in this unit <u>MUST</u> be assessed through:** 3.1. Direct Observation 3.2. Oral interview and written test
4. Context for Assessment	4.1 Competency may be assessed in workplace or in a simulated workplace setting 4.2 Assessment shall be observed while task are being undertaken whether individually or in group

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 ***Italicized terms*** are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
1. Describe team role and scope	1.1 The ***role and objective of the team*** is identified from available ***sources of information*** 1.2 Team parameters, reporting relationships and responsibilities are identified from team discussions and appropriate external sources.	• Communication process • Team structure • Team roles • Group planning and decision making	• Communicate appropriately, consistent with the culture of the workplace
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.	• Communication process • Team structure • Team roles • Group planning and decision making	• Communicate appropriately, consistent with the culture of the workplace
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 workplace context.	• Communication process • Team structure • Team roles • Group planning and decision making	• Communicate appropriately, consistent with the culture of the workplace • Interacting effectively with others

ELEMENT	PERFORMANCE CRITERIA ***Italicized terms*** are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
	3.3. Observed protocols in reporting using standard operating procedures. 3.4. Contribute to the development of team work 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 judgment 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. OSH 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

1. Critical aspects of Competency	**Assessment requires evidence that the candidate:** 1.1. Operated in a team to complete workplace activity 1.2. Worked effectively with others 1.3. Conveyed information in written or oral form 1.4. Selected and used appropriate workplace language 1.5. Followed designated work plan for the job 1.6. Reported outcomes
2. Resource Implications	**The following resources <u>MUST</u> 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 tasks
3. Methods of Assessment	**Competency in this unit may be assessed through:** 3.1. Observation of the individual member in relation to the work activities of the group 3.2. Observation of simulation and or role play involving the participation of individual member to the attainment of organizational goal 3.3. Case studies and scenarios as a basis for discussion of issues and strategies in teamwork
4. Context for Assessment	4.1 Competency may be assessed in workplace or in a simulated workplace setting 4.2 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 ***Italicized terms*** are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
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 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	• Work values and ethics (Code of Conduct, Code of Ethics, etc.) • Company policies • Company operations, procedures and standards • Fundamental rights at work including gender sensitivity • Personal hygiene practices	• Appropriate practice of personal hygiene • Intra and Interpersonal skills • Communication skills
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	• Work values and ethics (Code of Conduct, Code of Ethics, etc.) • Company policies • Company operations, procedures and standards • Fundamental rights at work including gender sensitivity • Personal hygiene practices • Time management	• Appropriate practice of personal hygiene • Intra and Interpersonal skills • Communication skills • Managing goals and time

ELEMENT	PERFORMANCE CRITERIA ***Italicized terms*** are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
3. Maintain professional growth and development	3.1 ***Trainings and career opportunities*** are identified and availed of based on job requirements 3.2 ***Recognitions*** are sought/received and demonstrated as proof of career advancement 3.3 ***Licenses and/or certifications*** relevant to job and career are obtained and renewed	• Work values and ethics (Code of Conduct, Code of Ethics, etc.) • Company policies • Company operations, procedures and standards • Fundamental rights at work including gender sensitivity • Personal hygiene practices	• Appropriate practice of personal hygiene • Intra and Interpersonal skills • Communication skills

RANGE OF VARIABLES

VARIABLE	RANGE
1. Evaluation	1.1 Performance Appraisal 1.2 Psychological Profile 1.3 Aptitude Test
2. Resources	2.1 Human 2.2 Financial 2.3 Technology 2.3.1 Hardware 2.3.2 Software
3. Trainings 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. Recognitions	4.1 Recommendations 4.2 Citations 4.3 Certificate of Appreciations 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

1. Critical aspects of Competency	**Assessment requires evidence that the candidate:** 1.1 Attained job targets within key result areas (KRAs) 1.2 Maintained intra - and interpersonal relationship in the course of managing oneself based on performance evaluation 1.3 Completed trainings and career opportunities which are based on the requirements of the industries 1.4 Acquired and maintained licenses and/or certifications according to the requirement of the qualification
2. Resource Implications	**The following resources <u>MUST</u> be provided:** 2.1 Workplace or assessment location 2.2 Case studies/scenarios
3. Methods of Assessment	**Competency in this unit may be assessed through:** 3.1 Portfolio Assessment 3.2 Interview 3.3 Simulation/Role-plays 3.4 Observation 3.5 Third Party Reports 3.6 Exams and Tests
4. Context for Assessment	4.1 Competency may be assessed in workplace or in a simulated workplace setting 4.2 Assessment shall be observed while task are being undertaken whether individually or in group

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 ***Italicized terms*** are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
1. Identify hazards and risks	1.1 ***Safety regulations*** and workplace safety and hazard control practices and procedures are clarified and explained based on organization procedures 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 1.3 ***Contingency measures*** during workplace accidents, fire and other emergencies are recognized and established in accordance with organization procedures.	• OSH procedures and practices and regulations • Personal hygiene practices • Hazards/risks identification and control • Organization safety and health protocol • Safety consciousness • Health consciousness	• Practice of personal hygiene • Hazards/risks identification and control skills • Interpersonal skills • Communication skills
2. Evaluate hazards and risks	2.1 Terms of maximum tolerable limits which when exceeded will result in harm or damage are identified based on threshold limit values (TLV) 2.2 Effects of the hazards are determined	• OSH procedures and practices and regulations • Personal hygiene practices • Hazards/risks identification and control • Threshold Limit Value –TLV	• Practice of personal hygiene • Hazards/risks identification and control skills • Interpersonal skills • Communication skills

ELEMENT	PERFORMANCE CRITERIA ***Italicized terms*** are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
	2.3 OSH issues and/or concerns and identified safety hazards are reported to designated personnel in accordance with workplace requirements and relevant workplace OSH legislation	• OSH indicators • Organization safety and health protocol • Safety consciousness • Health consciousness	
3. Control hazards and risks	3.1 Occupational Health and Safety (OSH) procedures for controlling hazards/risks in workplace are consistently followed 3.2 Procedures for dealing with workplace accidents, fire and emergencies are followed in accordance with organization OSH policies 3.3 ***Personal protective equipment (PPE)*** is correctly used in accordance with organization OSH procedures and practices 3.4 Appropriate assistance is provided in the event of a workplace emergency in accordance with established organization protocol	• OSH procedures and practices and regulations • PPE types and uses • Personal hygiene practices • Hazards/risks identification and control • OSH indicators • Organization safety and health protocol • Safety consciousness • Health consciousness	• Practice of personal hygiene • Hazards/risks identification and control skills • Interpersonal skills • Communication skills
4. Maintain OSH awareness	4.1 ***Emergency-related drills and trainings*** are participated in as per established organization guidelines and procedures 4.2 ***OSH personal records*** are completed and updated in accordance with workplace requirements	• OSH procedures and practices and regulations • PPE types and uses • Personal hygiene practices • OSH indicators • Organization	• Practice of personal hygiene • Interpersonal skills • Communication skills

ELEMENT	PERFORMANCE CRITERIA ***Italicized terms*** are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
		safety and health protocol • Safety consciousness • Health consciousness	

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. OSH personal records	6.1 Medical/Health records 6.2 Incident reports 6.3 Accident reports 6.4 OSH-related training completed

EVIDENCE GUIDE

1. Critical aspects of Competency	**Assessment requires evidence that the candidate:** 1.1 Explained clearly established workplace safety and hazard control practices and procedures 1.2 Identified hazards/risks in the workplace and its corresponding indicators in accordance with company procedures 1.3 Recognized contingency measures during workplace accidents, fire and other emergencies 1.4 Identified terms of maximum tolerable limits based on threshold limit value- TLV. 1.5 Followed Occupational Health and Safety (OSH) procedures for controlling hazards/risks in workplace 1.6 Used Personal Protective Equipment (PPE) in accordance with company OSH procedures and practices 1.7 Completed and updated OSH personal records in accordance with workplace requirements
2. Resource Implications	**The following resources <u>MUST</u> be provided:** 2.1 Workplace or assessment location 2.2 OSH personal records 2.3 PPE 2.4 Health records
3. Methods of Assessment	**Competency in this unit may be assessed through:** 3.1 Assessment 3.2 Interview 3.3 Case Study/Situation
4. Context for Assessment	4.1 Competency may be assessed in workplace or in a simulated workplace setting 4.2 Assessment shall be observed while task are being undertaken whether individually or in group

COMMON COMPETENCIES

UNIT OF COMPETENCY : APPLY SAFETY MEASURES IN FARM OPERATIONS

UNIT CODE : AFF321201

UNIT DESCRIPTOR : This unit covers the knowledge, skills and attitudes required to perform safety measures effectively and efficiently. It includes identifying areas, tools, materials, time and place in performing safety measures.

ELEMENT	PERFORMANCE CRITERIA ***Italicized terms*** are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
1. Determine areas of concern for safety measures	1.1 ***Work tasks*** are identified in line with farm operations 1.2 ***Place*** for safety measures are determined in line with farm operations 1.3 ***Time*** for safety measures are determined in line with farm operations 1.4 Appropriate ***tools, materials and outfits*** are prepared in line with job requirements	• Different work tasks in farm operations • Place and time for implementation of safety measures • Different hazards in the workplace • Types of tools, materials and outfits • Preparation of tools, materials and outfits	• Identifying work tasks in farm operations • Determining place and time for implementation of safety measures • Reading labels, manuals and other basic safety information • Identifying effective/functional tools, materials and outfit • Preparing tools, materials and outfits • Discarding defective tools, and materials
2 Apply appropriate safety measures	2.1 Tools and materials are used according to specifications and procedures 2.2 Outfits are worn according to farm requirements 2.3 Effectivity/shelf life/expiration of materials are strictly observed 2.4 Emergency procedures are known and followed	• Uses and functions of tools • Outfits and how to wear it • Expiration/shelf life of materials • Proper disposal of expired materials • Environmental rules and regulations • Emergency procedures	• Using tools and materials in the workplace • Wearing of outfits • Observing expiration/shelf life of materials • Disposing of expired materials • Following emergency procedures

ELEMENT	PERFORMANCE CRITERIA *Italicized terms* are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
	to ensure a safe work requirement 2.5 Hazards in the workplace are identified and reported in line with farm guidelines	• Hazards identification and reporting • Communication skills • OSHS	• Identifying and reporting of hazards in workplace area.
3 Safe keep /dispose tools, materials and outfit	3.1 Used tools and outfit are cleaned after use and stored in designated areas 3.2 Unused materials are properly labeled and stored according to manufacturers recommendation and farm requirements 3.3 Waste materials are disposed according to manufacturers, government and farm requirements	• Procedures of cleaning used tools and outfits • Label and storage unused materials • Disposal of wastes materials • Manufacturers recommendation on keeping materials • Environmental rules and regulations	• Cleaning used tools and outfit • Labeling and storing unused materials • Disposing waste materials

RANGE OF VARIABLES

VARIABLE	RANGE
1. Work tasks	**Work task may be selected from any of the subsectors:** 1.1 Crop production 1.2 Post-harvest 1.3 Agri-marketing 1.4 Farm equipment
2. Place	2.1 Stock room/storage areas/warehouse 2.2 Field/farm/orchard
3. Time	3.1 Fertilizer and pesticides application 3.2 Feed mixing and feeding 3.3 Harvesting and hauling
4. Tools, materials and outfits	4.1 Tools 4.1.1 Wrenches 4.1.2 Screw driver 4.1.3 Pliers 4.2 Outfit 4.2.1 Masks 4.2.2 Gloves 4.2.3 Boots 4.2.4 Overall coats 4.2.5 Hat 4.2.6 Eye goggles
5. Emergency procedures	5.1 Location of first aid kit 5.2 Evacuation 5.3 Agencies contract 5.4 Farm emergency procedures
6. Hazards	6.1 Chemical 6.2 Electrical 6.3 Falls

EVIDENCE GUIDE

1. Critical Aspects of Competency	**Assessment requires evidence that the candidate:** 1.1 Determined areas of concern for safety measures 1.2 Applied appropriate safety measures according to industry requirements 1.3 Prepared tools, materials and outfit needed 1.4 Performed proper disposal of used materials 1.5 Cleaned and stored tools, materials and outfit in designated facilities
2. Resource Implications	**The following resources <u>MUST</u> be provided:** 2.1 Farm location 2.2 Tools, equipment and outfits appropriate in applying safety measures
3. Method of Assessment	**Competency in this unit must be assessed through:** 3.1 Practical demonstration 3.2 Third Party Report
4. Context of Assessment	Assessment may occur in the workplace or in a simulated workplace or as part of a team under limited supervision

UNIT OF COMPETENCY : USE FARM TOOLS AND EQUIPMENT

UNIT CODE : AFF321202

UNIT DESCRIPTOR : This unit covers the knowledge, skills and attitudes required to use farm tools and equipment. It includes selection, operation and preventive maintenance of farm tools and equipment.

ELEMENT	PERFORMANCE CRITERIA ***Italicized terms*** are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
1. Select and use farm tools	1.1 Appropriate ***farm tools*** are identified according to requirement / use 1.2 Farm tools are checked for faults and defective tools reported in accordance with farm procedures 1.3 Appropriate tools are safely used according to job requirements and manufacturers conditions	• Types and uses of farm tools • Characteristics of functional tools • Checking tools for defects/faults • Segregation and reporting defective tools • Uses of tools and equipment	• Identifying farm tools for the work • Checking the conditions of tools • Reporting defective tools • Using tools
2. Select and operate farm equipment	2.1 Identify appropriate ***farm equipment*** 2.2 Instructional manual of the farm tools and equipment are carefully read prior to operation 2.3 ***Pre-operation check-up*** is conducted in line with manufacturers manual 2.4 Faults in farm equipment are identified and reported in line with farm procedures 2.5 Farm equipment used according to its function 2.6 Safety procedures are followed.	• Types and operations of farm equipment • Standards operating procedures of farm equipment • Instructional manual of equipment • Pre-operation check-up • Equipment Specification • Procedures in calibrating and use of equipment • Equipment faults identification and reporting • Operation of equipment • Codes and Regulations on	• Identifying appropriate farm equipment for the work • Reading instructional manual. • Conducting pre-operation check-up • Identifying faults/defects of farm equipment • Reporting on defective farm equipment • Operating farm equipment • Following safety procedures.

ELEMENT	PERFORMANCE CRITERIA ***Italicized terms*** are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
		environmental protection • Safety and keeping of equipment every after use • Safety measures	
3. Perform preventive maintenance	3.1 Tools and equipment are cleaned immediately after use in line with farm procedures 3.2 Routine check-up and maintenance are performed 3.3 Tools and equipment are stored in designated areas in line with farm procedures	• Cleaning procedures of tools and equipment • Maintenance procedures of farm equipment • Storage of tools and equipment • Designated storage areas	• Cleaning tools and equipment • Performing routinary check-up of tools and equipment • Maintaining farm equipment • Storing tools and equipment

RANGE OF VARIABLES

VARIABLE	RANGE
1. Farm equipment	Farm equipment include: 1.1 Engine 1.2 Pumps 1.3 Generators 1.4 Sprayers
2. Farm tools	Farm tools includes: 2.1 Sickle 2.2 Cutters 2.3 Weighing scales 2.4 Hand tools 2.5 Measuring tools 2.6 Garden tools
3. Pre-operation check-up	Pre-operation check –up includes: 3.1 Tires 3.2 Brake fluid 3.3 Fuel 3.4 Water 3.5 Oil 3.6 Lubricants 3.7 Battery

EVIDENCE GUIDE

1. Critical Aspects of Competency	**Assessment requires evidence that the candidate:** 1.1 Correctly identified appropriate farm tools and equipment 1.2 Operated farm equipment according to manual specification 1.3 Performed preventive maintenance
2. Resource Implications	**The following resources <u>MUST</u> be provided:** 2.1 Service/operational manual of farm tools and equipment 2.2 Tools and equipment 2.3 Farm implements
3. Method of Assessment	**Competency in this unit may be assessed through:** 3.1 Direct observation 3.2 Practical demonstration 3.3 Third Party Report
4. Context of Assessment	Assessment may occur in the workplace or in a simulated workplace or as part of a team under limited supervision

UNIT OF COMPETENCY : PERFORM ESTIMATION AND BASIC CALCULATION

UNIT CODE : AFF321203

UNIT DESCRIPTOR : This unit covers the knowledge, skills and attitudes required to perform basic workplace calculations.

ELEMENT	PERFORMANCE CRITERIA ***Italicized terms*** are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
1. Perform estimation	1.1 Job requirements are identified from written or oral communications 1.2 Quantities of materials and resources required to complete a work task are estimated 1.3 The time needed to complete a work activity is estimated 1.4 Accurate estimate for work completion are made 1.5 Estimate of materials and resources are reported to appropriate person	• Job requirements/ labor needs • Calculation of quantities of materials and resources required • Calculation of time for job completion • Preparation of estimate report • Basic mathematical operations • Percentage and ratios • Unit Conversion	• Identifying job requirements/labor • Estimating quantities of materials and resources required • Estimating time for job completion • Performing basic calculation • Compute percentage • Convert English to metric systems of measurement • Preparing estimate report
2. Perform basic workplace calculation	2.1 ***System and units of measurement*** to be followed are ascertained 2.2 Calculation needed to complete work tasks are performed using the ***four basic mathematical operation*** 2.3 Calculate whole fraction, percentage and mixed when are used to complete the instructions 2.4 Number computed is checked following work requirements	• Four basic mathematical operation • System and units of measurement • Fraction, percentage and ratio • Material take off • Materials costing	• Compute bill of materials • Compute project cost

RANGE OF VARIABLES

VARIABLE	RANGE
1. Four basic mathematical operation	1.1 Addition 1.2 Subtraction 1.3 Multiplication 1.4 Division
2. System of measurement	2.1 English 2.2 Metric
3. Units of measurement	3.1 Area 3.2 Volume 3.3 Weight 3.4 Length

EVIDENCE GUIDE

1. Critical Aspects of Competency	**Assessment requires evidence that the candidate:** 1.1 Performed estimation 1.2 Performed basic workplace calculation 1.3 Applied corrective measures as maybe necessary
2. Resource Implications	**The following resources <u>MUST</u> be provided:** 2.1 Relevant tools and equipment for basic calculation 2.2 Recommended data
3. Method of Assessment	**Competency in this unit <u>MUST</u> be assessed through:** 3.1 Practical demonstration 3.2 Written examination
4. Context of Assessment	Assessment may occur in the workplace or in a simulated workplace or as part of a team under limited supervision.

CORE COMPETENCIES

UNIT OF COMPETENCY : CONDUCT VARIETY AND SEED SELECTION

UNIT CODE : AFF611305

UNIT DESCRIPTOR : This unit covers the knowledge, skills and attitudes required to conduct site characterization, select suitable seed variety and select quality seed.

ELEMENT	PERFORMANCE CRITERIA ***Italicized terms*** are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
1. Conduct site characterization	1.1 Soil characterization is performed according to ***soil type classification*** 1.2 ***Ecosystem*** is identified according to established classification 1.3 ***Climatic pattern*** is identified based on Climatic Type from PAG-ASA 1.4 ***Topography*** and elevation of the site are determined based on ocular observation 1.5 Information on the occurrence of prevalent pests and diseases are determined. 1.6 Record keeping is done based on workplace procedures 1.7 ***Available reference*** materials are sourced out based on work requirements.	• Soil characterization procedures ○ Soil Sampling ○ Feel Method ○ Visual examination • Soil type classification • Types of ecosystem • Types of climatic pattern • Climatic types • Types of land topography • Elevation • Pests and diseases profile • Farm record keeping and documentation • Different reference materials and their sources • Ways of sourcing reference materials	• Classifying soil types • Identifying ecosystems • Identifying climatic patterns and types • Determining topography and elevation of the site • Determining previous and current occurrence of prevalent pests and diseases • Communication skills and record keeping skills • Sourcing out of different reference materials
2. Select suitable seed variety	2.1 ***Varietal characterization*** is performed for suitability of variety in the site. 2.2 List of recommended varieties is sourced out for reference in selection process.	• Morphology and growth stages of rice and corn plant • Varietal characteristics • Agronomic characteristics • Disease and insect	• Identifying rice and corn varieties • Determining varietal characteristics • Sourcing of the recommended lists • Selecting variety for

ELEMENT	PERFORMANCE CRITERIA ***Italicized terms*** are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
	2.3 Suited variety is chosen based on site characterization	pest reactions • Adaptability Test • Sources of the recommended lists of rice and corn varieties • Varietal selection procedures • National Seed Industry Council (NSIC) approved seed varieties	the specific site
3. Select quality seed	3.1 ***Classes of seeds*** are enumerated based on NSIC 3.2 Characteristics of ***quality seeds*** are determined based on NSIC 3.3 ***Germination test*** is performed according to established procedures 3.4 Quality seeds are chosen based on NSIC 3.5 Return and exchange of non-germinating seeds to the source is done following industry procedures	• Classes of seeds • NSIC • Characteristics of Quality seeds • Germination Tests ○ Date harvested ○ Computation of seed germination ○ Sampling • Selection procedures for quality seeds • Return and exchange of non-germinating seeds • Communication skills	• Classifying seeds • Determining quality seeds • Conducting seed germination test • Computing seed germination • Selecting quality seeds • Negotiating for the return and exchange of non-germinating seeds to the source

RANGE OF VARIABLES

VARIABLE	RANGE
1. Soil type classification	**Soil type classification include:** 1.1 Sandy loam 1.2 Clay loam 1.3 Silt 1.4 Clay 1.5 Sandy 1.6 Silty clay
2. Ecosystem	**Ecosystem includes:** 2.1 Upland 2.2 Irrigated lowland 2.3 Rain fed lowland 2.4 Saline 2.5 Cool elevated 2.6 Riverine
3. Climatic pattern	**Climatic pattern includes:** 3.1 Wet 3.2 Dry
4. Climatic type	**Climatic Type includes:** 4.1 Type 1 4.2 Type 2 4.3 Type 3 4.4 Type 4
5. Topography	**Topography includes:** 5.1 Hilly 5.2 Flat 5.3 Sloping 5.4 Mountainous 5.5 Plateau
6. Available reference	**Available reference includes:** 6.1 Electronic 6.1.1 Website 6.1.2 Social media 6.1.3 Text messaging 6.2 Prints 6.2.1 Books 6.2.2 Manuals 6.2.3 Production guide 6.2.4 Comics 6.2.5 Pamphlets 6.2.6 Monographs

VARIABLE	RANGE
7. Varietal characteristics	**Varietal characteristics refer to:** 7.1 Agronomic characteristics 7.2 Disease and insect pest reactions 7.3 Seed characteristics
8. Classes of seeds	**Classes of seeds include:** 8.1 Breeder 8.2 Foundation 8.3 Registered 8.4 Certified seeds 8.5 Good seeds
9. Quality seeds	**Quality seeds include:** 9.1 Relatively pure 9.2 Clean 9.3 High germination 9.4 Fewer weed seeds 9.5 Free from seed borne pests and diseases 9.6 Full and uniform in size 9.7 Viable 9.8 Vigor
10. Germination test	**Germination test includes:** 10.1 Rice 10.1.1 Rag doll method 10.1.2 Petri dish 10.2 Corn 10.2.1 Seed box method

EVIDENCE GUIDE

1. Critical aspects of competency	**Assessment requires evidence that the candidate:** 1.1 Characterized site. 1.2 Selected suitable seed variety. 1.3 Selected quality seed. 1.4 Matched rice and corn variety specific to site characteristics
2. Resource implications	**The following resources <u>MUST</u> be provided**: 2.1 Farm site/ simulated workplace 2.2 Different classes of seeds 2.3 NSIC approved rice and corn seed varieties 2.4 PPE 2.5 Tools and equipment relevant to the proposed activity or tasks 2.6 Reference –PNS; Quality Standards and PNS; PhilGap (rice and corn)
3. Methods of assessment	**Competency in this unit may be assessed through:** 3.1 Demonstration 3.2 Written examination 3.3 Oral questioning
4. Context for Assessment	4.1 Competency may be assessed in actual workplace or at the designated TESDA Accredited Assessment Center in a simulated workplace setting.

UNIT OF COMPETENCY : PERFORM LAND PREPARATION

UNIT CODE : AFF611306

UNIT DESCRIPTOR : This unit covers the knowledge, skills and attitudes required to perform pre- tillage operations, conduct tillage operation and perform post-tillage operation.

ELEMENT	PERFORMANCE CRITERIA ***Italicized terms*** are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
1. Perform pre-tillage operations	1.1 ***Land clearing activities*** are done according to ***topography*** 1.2 ***Tools, materials and equipment*** are made ready for land preparation 1.3 Safety procedures is followed according to OSHS 1.4 Machinery services are sourced out following work requirement 1.5 Dikes are ***constructed and repaired*** according to industry standard procedures	• Land clearing activities ○ Importance of land cleaning in rice and corn production. • Different topography • Tools, materials, and equipment required in land preparations • Procedures in preparation of tools, material and equipment • OSHS • PPE • Different machinery services for land preparations • Philippine Good Agricultural Practices (PhilGAP) • Activities of repairing dikes	• Clearing the area. • Preparing tools, materials and equipment • Practicing OSHS • Wearing PPE • Sourcing of machinery services • Communication skills • Practicing PhilGAP • Constructing and repairing dikes

2. Conduct tillage operations	2.1 ***Tillage operation*** is carried-out according to standard tillage practices. 2.2 Tillage operation is monitored following established industry procedures 2.3 Safety measures are practiced according to OSH standards .	• Tillage operation and practices • Monitoring tillage operation • Characteristics of a well prepared wetland and dryland fields • OSHS • Safety procedures for land preparation	• Performing tillage operation • Monitoring tillage operation • Cleaning the area • Preparing tools, materials and equipment • Practicing OSHS • Wearing PPE • Communication skills • Practicing GAP • Repairing dikes
3. Perform post-tillage operations	3.1 Damaged dikes are ***repaired*** following standard industry procedures. 3.2 Proper wastes disposal is practice following environmental rules and regulations. 3.3 Transaction with the machinery service provider is completed with reference to work contract. 3.4 Record keeping is done following workplace procedures.	• Activities of repairing dikes • Reinforce dikes using bamboo poles procedure • Proper wastes disposal • Procedures in closing transaction with machinery services provider • Communication skills • Simple record keeping	• Repairing damaged dikes • Disposing wastes • Completing transactions with machinery service provider • Performing record keeping

RANGE OF VARIABLES

VARIABLE	RANGE
1. Land clearing activities	**Land clearing activities include:** 1.1 Cleaning of dikes/levees 1.2 Cleaning of irrigation and drainage canals 1.3 Spreading of remaining crop stubbles
2. Topography	**Topography includes:** 2.1 Hilly 2.2 Flat 2.3 Sloping 2.4 Moutainous 2.5 Plateau
3. Tools, Materials, Equipment	**Tools, materials and equipment include:** 3.1 Equipment 3.1.1 Grass cutter 3.1.2 Knapsack sprayer 3.1.3 PPE 3.1.4 Carabao 3.1.5 Farm Attachments 3.1.5.1 Tooth comb-harrow 3.1.5.2 Carabao-drawn plow 3.1.5.3 Puddler 3.1.5.4 Wooden planks 3.2 Tools 3.2.1 Bolo 3.2.2 Scythe 3.2.3 Spade or shovel 3.2.4 Spading fork 3.2.5 Garden hoe 3.2.6 Rake 3.2.7 A-frame (1 unit) 3.3 Materials 3.3.1 Fuel 3.3.2 Engine oil 3.3.3 Sharpening stone
4. Constructing and repairing dikes	**Constructing and repairing dikes include:** 4.1 Sealing rat burrows, cracks and damaged dikes 4.2 Installing screen mesh to water inlets and outlets 4.3 Elevating water dikes
5. Tillage Operation	**Tilling operation includes:** 5.1 Wet tillage practices 5.2 Dry land tillage practices 5.3 Wet and dry tillage practices.
6. Repairing damaged dikes	**Repairing damage dikes include:** 6.1 Sealing and patching rat burrows, cracks, damaged dikes 6.2 Reinforcing dikes 6.3 Using bamboo poles 6.4 Elevating dikes

EVIDENCE GUIDE

1. Critical aspects of competency	**Assessment requires evidence that the candidate:** 1.1 Performed pre- tillage operations 1.2 Conducted tillage operation 1.3 Performed post- tillage operation 1.4 Practiced safety measures following OSH standards 1.5 Performed record keeping
2. Resource Implications	**The following resources <u>MUST</u> be provided**: 2.1 Farm site/ simulated workshop 2.2 Tools, materials, farm implements and equipment for land preparation activities 2.3 PPE 2.4 Operator's manual
3. Method of Assessment	**Competency in this unit may be assessed through:** 3.1 Demonstration 3.2 Written examination 3.3 Oral questioning
4. Context for Assessment	4.1 Competency may be assessed in actual workplace or at the designated TESDA Accredited Assessment Center in a simulated workplace setting.

UNIT OF COMPETENCY: : CARRY OUT CROP ESTABLISHMENT

UNIT CODE: : AFF611307

UNIT DESCRIPTOR : This unit covers the knowledge, skills and attitudes required to germinate seeds, conduct direct seeding operation and establish crop for transplanting.

ELEMENT	PERFORMANCE CRITERIA ***Italicized terms*** are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
1. Germinate seeds	1.1 Seed soaking is done according to industry standards 1.2 ***Seed is incubated*** following industry standards 1.3 Incubated seeds are examined for whitish dot as a sign of germination. 1.4 Germinated seeds are ***handled and transported*** to site following industry standards 1.5 Wearing of PPE is practiced following the OSHS standards	• Procedures of seed soaking • Procedures of seed incubation • Indicators of seed germination • Practice OSHS • Wearing of PPE • Documentation and record keeping • Proper handling and transporting of germinated seeds ○ Avoidance from contamination of chemicals • Proper wastes disposal (Reduce, Reuse, Recycle-3Rs)	• Soaking of seeds • Incubating seeds • Identifying germinated seed • Handling and transporting of germinated seeds • Wearing PPE • Practicing proper wastes disposal
2. Conduct direct seeding operation	2.1 ***Tools, materials and equipment*** are prepared based on work requirements 2.2 ***Field is checked*** for readiness for ***direct seeding*** operation 2.3 Corrective measures are done based on the result of inspection 2.4 Prevention of ***pests*** is employed according to result of inspection 2.5 Direct seeding is performed following	• Preparation of tools, materials and equipment • Ways of checking the field • Corrective measures • Prevention of pests • Direct seeding procedures ○ manual broadcasting	• Preparing tools, materials and equipment • Checking field by ocular inspection • Analytical skills • Preventing pests • Using drum seeders • Broadcasting (manual) seeds • Wearing PPE • Using drum

ELEMENT	PERFORMANCE CRITERIA ***Italicized terms*** are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
	industry recommendations 2.6 Wearing of PPE is practiced according to OSHS standards. 2.7 Drum seeder is used following manufacturer's manual 2.8 ***Post operation activities*** are performed based on workplace procedure.	○ using of drum seeder ● OSHS ○ PPEs for direct seeding operation ● Parts and functions of drum seeder ● Post operation activities	seeder ● Performing post-operation activities
3. Establish crop for transplanting	3.1 ***Tools, materials and equipment*** are prepared based on work requirements 3.2 Seedbed site is selected based on ***recommended criteria*** 3.3 Seedbed is ***prepared*** following industry standards 3.4 Seeds are sown following industry standards 3.5 ***Seedling management*** is applied following industry standards 3.6 Wearing of safety gears are practiced according to OSHS standards 3.7 ***Post operation activities*** are performed based on workplace procedure 3.8 ***Pre- transplanting activities*** are done following industry standards 3.9 Crop ***insurance*** is applied for based on recommendation of the industry	● Preparation of tools, materials and equipment ● Recommended criteria for site selection ● Industry standards in seedbed preparations ● Industry standards in seed sowing ● Industry standards in seedling management ● Computation of fertilizer rate ● Safety gears used in transplanting ● OSHS in transplanting ● Pre- transplanting procedures ● Post-operations activities ● Types of insurances ● Procedures in accomplishing insurance forms	● Preparing tools, materials and equipment ● Selecting seedbed site by ocular inspection ● Preparing seedbed ● Mathematical skills in measuring seedbed area ● Sowing seed ● Applying seedling management ● Computing for fertilizer rate ● Wearing safety gears ● Performing pre-transplanting of seedlings ● Performing post-operation activities ● Applying for crop insurance

RANGE OF VARIABLES

VARIABLE	RANGE
1. Seed soaking	**Seed soaking include:** 1.1 Washing of seeds 1.2 Cleaning of the seeds 1.3 Changing of water
2. Incubation	**Incubation include:** 2.1 Transferring of seeds to sack (half- filled) 2.2 Draining of seeds 2.3 Loosening ties of sacks 2.4 Placing of sacks on top of pallet under shaded area 2.5 Covering of sacks
3. Transporting and handling of germinated seeds	**Transporting and handling of germinated seeds include:** 3.1 Prevent germinated seeds from getting wet 3.2 Avoid too much exposure to sunlight 3.3 Cover the germinated seeds from direct sunlight 3.4 Avoid contamination from chemicals
4. Tools, materials and equipment	**Tools, materials and equipment include:** **<u>Direct Seeding:</u>** 4.1 Tools • shovel • bolo 4.2 Materials • sacks • chemicals • record book • ballpen • germinated seeds • pail/ container 4.3 Equipment • drum seeder • knapsack sprayer • PPE/safety gears **<u>Transplanting:</u>** 4.1 Tools • shovel • bolo • knife 4.2 Materials • sacks • chemicals • recordbook • ballpen • seedlings • pail/container • rope • planting guide • laminated sacks • tying materials for seedlings o leaves of talahib o leaves of cogon o leaves of lapat 4.3 Equipment • Knapsacksprayer • PPE/safety gears • Carabao
5. Checking of Field	**Checking of field includes:**

VARIABLE	RANGE
	5.1 Field levelling 5.2 Excess water for drainage 5.3 presence of pests
6. Direct Seeding	**Direct seeding includes:** 6.1 Manual 6.2 Mechanical
7. Pests	**Pests include:** 7.1 Golden snail 7.2 Rats 7.3 Chicken 7.4 Other stray animals
8. Post operations activities for direct selling	**Post operation activities include:** 8.1 Replanting of open spaces missing hills 8.2 Applying water and nutrient management 8.3 Replanting of open spaces missing hills 8.4 Employing 7s of Good Housekeeping 8.5 Cleaning tools and equipment 8.6 Storage of tools, material and equipment 8.7 Record keeping 8.8 Waste disposal
9. Recommended criteria	**Recommended criteria include:** 9.1 Away from infected area 9.2 Away from artificial lights 9.3 Near water source 9.4 Good soil condition 9.5 Areas with good drainage
10. Seedbed preparation	**Seedbed preparation includes:** 10.1 Dapog 10.2 Modified dapog 10.3 Mat tray 10.4 Wet bed 10.5 Dry bed
11. Safety gears	**Safety gears includes:** 11.1 Masks 11.2 Goggles 11.3 Surgical gloves 11.4 Rubber boots 11.5 Long sleeves shirt 11.6 Hat 11.7 Towel
12. Seedling management	**Seedling management includes:** 12.1 Nutrient management 12.2 Water management 12.3 Pests management

VARIABLE	RANGE
13. Pre-transplanting activities	**Pre-transplanting activities include** 13.1 Flooding of seed bed 13.2 Pulling and tying of seedlings 13.3 Washing of roots 13.4 Hauling and distribution of seedlings
14. Post operation activities for crop establishment	**Post operation activities include:** 14.1 Replanting of missing hills 14.2 Employing 7s of Good Housekeeping 14.3 Cleaning tools and equipment 14.4 Storage of tools, material and equipment 14.5 Record keeping 14.6 Waste disposal
15. Insurance	**Insurance includes:** 15.1 Crop 15.2 Farmer

EVIDENCE GUIDE

1. Critical aspects of competency	**Assessment requires evidence that the candidate:** 1.1 Germinated seeds 1.2 Conducted direct seeding operation 1.3 Established crop for transplanting 1.4 Pulled and transplanted plant 1.5 Applied for crop insurance 1.6 Practiced OSHS
2. Resource Implications	**The following resources <u>MUST</u> be provided**: 2.1 Farm site/ simulated workplace 2.2 Tools, materials and equipment for crop establishment operations 2.3 Seeds and germinated seeds 2.4 Operator's manual 2.5 PPE
3. Method of Assessment	**Competency in this unit may be assessed through**: 3.1 Demonstration 3.2 Written examination 3.3 Oral questioning
4. Context for Assessment	4.1 Competency may be assessed in actual workplace or at the designated TESDA Accredited Assessment Center in a simulated workplace setting.

UNIT OF COMPETENCY : MANAGE CROP GROWTH

UNIT CODE: : AFF611308

UNIT DESCRIPTOR : This unit covers the knowledge, skills and attitudes required to conduct nutrient management, perform water management, carry-out pest management, conduct management of abiotic stresses and conduct seed purification activity.

ELEMENT	PERFORMANCE CRITERIA ***Italicized terms*** are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
1. Conduct nutrient management	1.1 Soil fertility is determined using recommended ***assessment methods*** 1.2 ***Kinds of fertilizer*** are selected based on soil analysis and crop requirement 1.3 Amount of fertilizer is ***computed*** based on industry recommendations 1.4 Fertilizer is applied according to recommendations	• Importance of soil analysis • Soil sampling technique/s • Kinds of fertilizer • Ratio and proportion computation for fertilizers • Calendar of fertilizer application o Maturity of variety o Type of soil • Application of fertilizer • Industry recommendations for fertilizer application o Kind o Right amount o Right timing o Right place	• Assessing soil fertility • Selecting fertilizers • Computing for ratio and proportion of amount of fertilizer • Preparing calendar of fertilizer application • Applying fertilizer
2. Perform water management	2.1 Water need is ***assessed*** based on ecosystem 2.2 ***Water management strategy*** is applied based on different cultural crop management 2.3 ***Water conservation*** is employed based on established farm practices 2.4 Ocular monitoring is conducted to observe the	• Importance of water management on the different growth stages of rice and corn • Water requirements in different ecosystems • Water level and content assessment methods • Importance of different water	• Reading or interpreting the measuring instrument for water level • Assessing water level • Applying appropriate management strategies • Employing appropriate water conservation

ELEMENT	PERFORMANCE CRITERIA ***Italicized terms*** are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
	depth of water	management strategies. ○ Calendar of planting ○ Scheduling of farm irrigation activities • Water conservation methods and their applications • Different techniques of water impounding ○ Small farm reservoir ○ Small water impounding project ○ Shallow tube well • Procedures of monitoring activities • Monitoring checklist • Kinds of fertilizer • Ratio and proportion computation for fertilizers • Calendar of fertilizer application ○ Maturity of variety ○ Type of soil	method/s • Conducting monitoring activities
3. Carry-out pest management	3.1 Occurrence of ***pests and diseases is*** assessed following industry standard procedures 3.2 ***Pests and diseases management*** is adopted based on industry standard procedures 3.3 Regular field monitoring is conducted based on industry procedures 3.4 Action is taken to prevent further ***crop damages*** and losses.	• Knowledge on the origin/ occurrence of a particular disease • Management options for a particular pest/ disease (IPM) • Identify/ Classify pests and diseases • Agro ecosystem Analysis (AESA) and its importance as decision making tool for pest and diseases	• Assessing occurrence of pests and diseases • Adopting pests and diseases management • Conducting regular field monitoring • Applying preventive action

ELEMENT	PERFORMANCE CRITERIA ***Italicized terms*** are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
		management • Different techniques of damage assessment ○ Cultural ○ Biological ○ Mechanical ○ Chemical • Preventive actions against pest and diseases	
4. Conduct management of abiotic stresses	4.1 Assessment of ***abiotic stresses*** is done following industry standard procedures 4.2 ***Abiotic stress management*** is adopted based on industry standards 4.3 Regular field monitoring is conducted based on industry procedures 4.4 ***Action*** is taken based on the result of monitoring activities	• Different abiotic stresses • Assessment of abiotic stresses • Abiotic stress management • Field monitoring procedures • Preventive action against abiotic stresses • OHSH practices	• Performing assessment of abiotic stress • Adopting abiotic stress management • Conducting regular field monitoring • Applying regular action against abiotic stress
5. Conduct seed purification activity	5.1 Area is selected for seed purification activity based on recommended ***criteria***. 5.2 ***Off-types*** are removed following established farm procedures 5.3 ***Disposal of off-types*** is done following established farm procedures 5.4 Seeds are harvested based on maturity indices. 5.5 ***Post- harvest*** operations are done separately for seed production	• Selection criteria • Characteristics of off-types • Stages of rice and corn where rouging is best done • Sources of off-types ○ Plant height ○ Color of leaves ○ Presence/absence of awn ○ Panicle ○ Flag leaf ○ Maturity etc. • Harvest and post-harvest operations • Rouging procedures ○ Importance of rouging • PhilGAP for rouging • OSHS • Disposal procedures of off-	• Understanding the importance of rouging • Identify the proper time of rouging • Selecting area for seed purification activity • Identifying different off-types • Rouging of off-types • Proper disposing of off- types • Performing separate harvesting and post-harvesting operations for seed production • Practicing OSHS • Documenting and record keeping

ELEMENT	PERFORMANCE CRITERIA *Italicized terms* are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
		types and weeds • Environmental rules and regulations on solid wastes management • PhilGAP on agri-wastes disposal • Harvesting and post-harvesting procedures for seed production activity • Record keeping	

RANGE OF VARIABLES

VARIABLE	RANGE
1. Assessment methods	**Assessment methods include:** 1.1 Soil analysis 1.2 Minus- One Element Technique 1.3 Leaf Color Chart 1.4 Nutrient Omission Plot Technique 1.5 Rice crop manager (electronic based) 1.6 Leaf tissue analysis
2. Kinds of fertilizer	**Kinds of fertilizers include:** 2.1 Organic 2.2 Inorganic/Synthetic
3. Fertilizer computation	**Fertilizer computation includes:** 3.1. Ratio and proportion 3.2. Simple substitution
4. Methods of fertilizer application	**Methods of fertilizer application include:** 4.1. Basal (First Application) 4.2. Top dressing 4.3. Side dressing 4.4. Foliar Application

VARIABLE	RANGE
5. Recommendations	**Recommendations include:** 5.1 Right kind 5.2 Right amount 5.3 Right Timing 5.4 Right Place
6. Water assessment methods	**Water assessment methods include:** 6.1 Conventional (Level of water in the Paddy) 6.2 Traditional (Stick method, feel method)
7. Water management strategy	**Water management strategy includes:** 7.1 Schedule of irrigation 7.2 Water source 7.3 Water flooding 7.4 Water draining
8. Water conservation	**Water conservation includes:** 8.1 Alternate wetting and drying 8.2 Water impounding 8.3 Mulching
9. Pests and diseases	**Pests and diseases include:** 9.1 Insect pests 9.2 Weeds 9.3 Vertebrate pests (rats and birds) 9.4 Snail
10. Diseases	**Diseases include:** 10.1 Fungal 10.2 Bacterial 10.3 Viral 10.4 Nematodes
11. Pest and diseases management	**Pests and disease management includes:** 11.1 Cultural control 11.2 Biological control 11.3 Chemical control 11.4 Mechanical control
12. Crop damage	**Crop damages include:** 12.1 Diseases infections 12.2 Insect Infestations 12.3 Other crop damages
13. Abiotic stresses	**Abiotic stresses include:** 13.1 Drought 13.2 Extreme temperature 13.3 Light- intensity stress 13.4 Nutrient deficiencies 13.5 Nutrient toxicity

	13.6 Excessive water 13.7 Typhoons/ Strong winds 13.8 Pollutants 13.9 Salinity 13.10 Acidity 13.11 Alkalinity
14. Abiotic stress management	**Abiotic stress management includes:** 14.1 Cultural 14.2 Biological 14.3 Mechanical 14.4 Chemical
15. Action	**Action includes:** 15.1 Exhaust all measures to prevent/ control abiotic stresses 15.2 Report and coordinate with proper authorities for quick response and assistance 15.3 Report and claim crop insurance
16. Selection criteria	**Selection criteria include:** 16.1 Free from pests and diseases 16.2 Accessible to water 16.3 Fertile soil 16.4 Less occurrence of off-types/rogues 16.5 Away from artificial lights
17. Disposal of off-types	**Disposal of off-types includes:** 17.1 Remove and carry 17.2 Composting 17.3 Feeds for livestock 17.4 Remove and burry
18. Post - harvest	**Post- harvest includes:** 18.1 Piling 18.2 Threshing 18.3 Drying 18.4 Cleaning 18.5 Sacking 18.6 hauling 18.7 Storage 18.8 Dehusking 18.9 Shelling 18.10 Record keeping

EVIDENCE GUIDE

1. Critical aspects of competency	**Assessment requires evidence that the candidate:** 1.1 Conducted nutrient management 1.2 Performed water management 1.3 Carried-out pest management 1.4 Conducted management of abiotic stresses 1.5 Conducted seed purification activity
2. Resource Implications	**The following resources <u>MUST</u> be provided:** 2.1 Farm site/simulated workplace 2.2 Storage area 2.3 Tools, materials and equipment for crop management operations (see section 3.4 for list of equipment, tools and materials) 2.4 Operator's manual 2.5 Sack (packaging material) 2.6 PPE
3. Method of Assessment	**Competency in this unit may be assessed through:** 3.1 Written Exam 3.2 Oral questioning 3.3 Demonstration
4. Context for Assessment	4.1 Competency may be assessed in actual workplace or at the designated TESDA Accredited Assessment Center in a simulated workplace setting.

UNIT OF COMPETENCY : CONDUCT HARVEST AND POST-HARVEST OPERATIONS

UNIT CODE : AFF611309

UNIT DESCRIPTOR : This unit covers the knowledge, skills and attitudes required to carry out pre-harvest, carryout harvesting activity and carry out post-harvest operations.

ELEMENT	PERFORMANCE CRITERIA ***Italicized terms*** are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
1. Carry out pre-harvest operation	1.1 Matured crop is determined based on ***physiological growth*** and ***physical indicators*** 1.2 Records of crop ***agronomic history*** is verified and referenced for maturity 1.3 ***Records*** are verified for harvesting activities following established farm procedures 1.4 Weather condition is monitored based on weather forecast 1.5 Rice field is drained of water according to ***recommended industry practices*** 1.6 ***Obstructions*** from the field are removed for efficient harvesting 1.7 ***Harvesting tools and materials*** are prepared following work requirement. 1.8 ***Machinery services*** are obtained for harvest and post-harvest operations.	• Physiological indicators of rice and corn crop maturity • Physical indicators of rice and corn crop maturity • Agronomic characteristics of different rice and corn varieties • Records verification • Weather condition and forecasting • Proper water management before harvest • Types of obstructions from the rice field and corn field • Appropriate harvesting tools and materials for rice and corn • Documentation and farm record keeping • The Art of Negotiating • Machinery service providers for rice and corn	• Determining matured crop o Identifying physiological indicators of rice and corn crop maturity o Identifying physical indicators of rice and corn crop maturity • Verifying information on agronomic history • Verifying records for harvesting activities • Monitoring weather conditions and forecasts • Preparing contingency plan for weather disturbances • Draining of water from the rice field • Removing obstructions from the field • Preparing harvesting tools and materials • Identifying different

ELEMENT	PERFORMANCE CRITERIA ***Italicized terms*** are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
			machineries for harvest and post-harvest operations • Negotiating with machinery service providers for rice • Obtaining machinery services
2. Carry out harvesting activity	2.1 ***Appropriate harvesting methods*** are implemented based on best cultural practices 2.2 Pilling is done based on recommended practices 2.3 PPE is worn according to OSHS 2.4 Harvesting tools are used according to work requirement 2.5 Mechanical harvesting is monitored following work requirement	• Harvesting methods o Manual o Mechanical • Piling practices • Procedures for Safety in the use of tools and equipment • Use of honesty tools • Monitoring procedures	• Identifying factors affecting quality of grain at harvest • Estimating yield • Harvesting rice and corn crop • Implementing appropriate harvesting methods • Pilling of harvested grains • Wearing appropriate PPE • Using harvesting tools • Monitoring mechanized harvesting
3. Carry out post-harvest operations	3.1 ***Postharvest operations*** are done based on recommended technologies 3.2 Use of ***post- harvest equipment and facilities*** are monitored to avoid grain ***damage and losses*** 3.3 Handling and ***packaging*** are done according to variety and destination 3.4 Bags of palay are stored in an appropriate storage area 3.5 Monitoring of storage pests and diseases is done based on ***recommended practices***	• Postharvest equipment and facilities for grains and their uses • Care & maintenance of post-harvest equipment & facilities • Postharvest grain damages and losses • Proper handling and packaging of grains • Proper storing and stacking of grains • Procedures in monitoring storage pest & diseases • Storage pests & diseases	• Performing postharvest operations such as handling/ hauling, threshing, cleaning, drying, milling and storing • Identifying different postharvest equipment & facilities • Distinguishing specific uses of the different postharvest equipment & facilities • Identifying grain

ELEMENT	PERFORMANCE CRITERIA ***Italicized terms*** are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
		• Effective Communication & Coordination	damages and estimating spillage/losses • Packaging, sorting and stacking of milled grain following recommended industry standards • Storing and stacking of grain following industry standards • Cleaning of used and infested sacks of grain • Separating old stocks from new ones • Communicating infestation to proper authorities

RANGE OF VARIABLES

VARIABLE	RANGE
1. Physiological growth	**Physiological growth includes:** 1.1 Days after seeding 1.2 Days after transplanting 1.3 Days after panicle initiation
2. Physical indicators	**Physical indicators include:** 2.1 Change in color from green to golden yellow panicles 2.2 From green to brown husks 2.3 Hardening of grains 2.4 Drying of silk 2.5 Translucent grain
3. Crop agronomic history	**Crop agronomic history includes:** 3.1. Variety 3.2. Planting calendar (days after seeding and days after heading) 3.3. For rice, days after seeding and panicle initiation 3.4. For corn, days after sowing
4. Obstructions	**Obstructions may include but not limited to:** 4.1 Weeds 4.2 Stakes 4.3 Wedges
5. Harvesting tools and materials	**Harvesting tools and materials may include:** 5.1 Scythe 5.2 Sacks 5.3 Twines 5.4 Labels/Markers 5.5 Lumber 5.6 bamboos 5.7 Nails 5.8 Roofing material
6. Records	**Records include:** 6.1 Crop history 6.2 Farm activity calendar 6.3 Farm records
7. Machinery services	**Machinery services include:** 7.1 Harvester 7.2 Thresher 7.3 Mechanical dryer 7.4 Rice and corn mill 7.5 Truck hauler
8. Appropriate harvesting	**Appropriate harvesting methods include:** 8.1 Manual 8.2 Mechanical

VARIABLE	RANGE
9. Postharvest operations	**Postharvest operations include:** 9.1 Handling/Hauling 9.2 Threshing 9.3 Dehusking 9.4 Shelling 9.5 Cleaning 9.6 Drying 9.7 Milling 9.8 Packaging and sacking 9.9 Storing
10. Postharvest equipment and facilities	**Postharvest equipment and facilities include:** 10.1 Thresher 10.2 Mechanical dryer 10.3 Dehusker 10.4 Sheller 10.5 Solar dryer 10.6 Rice and corn mill 10.7 Warehouse
11. Damages and losses	**Damages and losses include:** 11.1 Broken grains 11.2 Discolored grains 11.3 Grain impurities 11.4 Spoiled grains 11.5 Pest-infected grains 11.6 Moldy corn 11.7 Spillage due to improper 11.8 Handling
12. Packaging	**Packaging includes:** 12.1 Sacks 12.2 Plastic bags
13. Appropriate storage area	**Appropriate storage area:** 13.1 Cool 13.2 Dry 13.3 Secured 13.4 Free from pests and diseases 13.5 Clean
14. Recommended practices	**Recommended practices include:** 14.1 Using new sacks or cleaning used sacks by removing insect pests 14.2 Separating old stocks from new ones to prevent infestation 14.3 Reporting to immediate authority when infestation is alarming

EVIDENCE GUIDE

1. Critical aspects of competency	**Assessment requires evidence that the candidate:** 1.1 Carried out pre-harvest operation 1.2 Carried out harvesting activity 1.3 Carried out post-harvest operations
2. Resource Implications	**The following resources MUST be provided:** 2.1 Farm site/simulated workplace 2.2 Storage facilities/simulated workplace 2.3 Tools, materials, equipment and machineries for harvesting and post-harvesting operation 2.4 PPE
3. Method of Assessment	**Competency may be assessed through:** 3.1 Written examination 3.2 Oral questioning 3.3 Demonstration
4. Context for Assessment	4.1 Competency may be assessed in actual workplace or at the designated TESDA Accredited Assessment Center in a simulated workplace setting.

SECTION 3 TRAINING ARRANGEMENTS

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 **GRAINS PRODUCTION NC II.**

They include information on curriculum design; training delivery; trainee entry requirements; tools and equipment; training facilities; and trainer's qualification.

3.1 CURRICULUM DESIGN

TESDA shall provide training on the development of competency-based curricula to enable training providers develop their own curricula with the components mentioned below.

Delivery of knowledge requirements for the basic, common and core units of competency specifically in the areas of mathematics, science/technology, communication/language and other academic subjects shall be contextualized. To this end, TVET providers may develop a Contextual Learning Matrix (CLM) to include also green technology, issues on health and drugs and persons with disabilities (PWD's).

Course Title: **GRAINS PRODUCTION** **NC Level NC II**

Nominal Training Duration:

	20 hrs	**Basic Competencies**
	72 hrs	**Common Competencies**
	331 hrs	**Core Competencies**
Total	**423 hrs**	

Course Description:

This course is designed to enhance the knowledge, desirable attitudes and skills of a rice or corn farmer or rice or corn grower to conduct variety and seed selection, perform land preparation, carry-out crop establishment, manage crop and conduct harvest and post-harvest operations. It covers skills rice and corn farming and growing focusing on manual operations; while for mechanized operations, the farmer has to have competencies in sourcing out services from farm machinery service providers.

To obtain this, all units prescribed for this qualification must be achieved.

BASIC COMPETENCIES
20 HRS

Unit of Competency	Learning Outcomes	Learning Activities	Methodology	Assessment Approach	Nominal Duration
1. Participate in workplace communication	1.1 Obtain and convey workplace information	• Describe Organizational policies	• Group discussion	• Oral evaluation	**4 Hours**
		• Read: o Effective communication	• Lecture	• Written examination	
		o Written communication			
		o Communication procedures and systems			
		• Identify: o Different modes of communication			
		o Medium of communication			
		o Flow of communication			
		o Available technology relevant to the enterprise and the individual's work responsibilities			
		• Prepare different Types of question	• Demonstration	• Observation	
		• Gather different sources of information			
		• Apply storage system in establishing workplace information			
		• Demonstrate Telephone courtesy			

Unit of Competency	Learning Outcomes	Learning Activities	Methodology	Assessment Approach	Nominal Duration
	1.2 Complete relevant work related documents	• Describe Communication procedures and systems	• Group discussion	• Oral evaluation	
		• Read: o Meeting protocols	• Lecture	• Written examination	
		o Nature of workplace meetings	• Lecture	• Written examination	
		o Workplace interactions			
		o Barriers of communication			
		• Complete work related documents	• Demonstration	• Observation	
		• Read instructions on work related forms/documents	• Lecture	• Written examination	
		• Practice:			
		o Estimate, calculate and record routine workplace measures	• Demonstration	• Observation	
		o Basic mathematical processes of addition, subtraction, division and multiplication			
		• Demonstrate office activities in: o workplace meetings and discussions scenario	• Role play	• Oral evaluation • Observation	
		• Perform workplace duties scenario following simple written notices	• Role play	• Oral evaluation • Observation	
		• Follow simple spoken language	• Demonstration	• Observation	
		• Identify the different Non-verbal communication	• Lecture	• Written examination	

Unit of Competency	Learning Outcomes	Learning Activities	Methodology	Assessment Approach	Nominal Duration
		• Demonstrate ability to relate to people of social range in the workplace	• Demonstration	• Observation	
		• Gather and provide information in response to workplace requirements			
	1.3 Participate in workplace meeting and discussion	• Identify: o types of workplace documents and forms	• Lecture	• Written examination	
		o kinds of workplace report			
		o Available technology relevant to the enterprise and the individual's work responsibilities			
		• Read and follow instructions in applying basic mathematical concepts			
		• Follow simple spoken language	• Demonstration	• Observation	
		• Gather and provide information in response to workplace requirements			
2. Work in a team environment	2.1 Describe and identify team role and responsibility in a team.	• Describe the team role and scope	• Group discussion	• Oral evaluation	**4 Hours**

Unit of Competency	Learning Outcomes	Learning Activities	Methodology	Assessment Approach	Nominal Duration
		• Read o Definition of Team o Difference between team and group o Objectives and goals of team	• Lecture	• Written examination	
		• Identify different sources of information			
	2.2 Describe work as a team	• Describe team goals and objectives	• Group discussion	• Oral evaluation	
		• Perform in setting team goals and expectations scenario	• Role play	• Oral evaluation • Observation	
		• Identify o individual role and responsibility	• Lecture	• Written examination	
		• Practice Interacting effectively with others	• Group discussion	• Oral evaluation	
		• Read: o Fundamental rights at work including gender sensitivity o Understanding individual competencies relative to teamwork o Types of individuals o Role of leaders	• Lecture	• Written examination	
3. Practice career professionalism	3.1 Integrate personal objectives with organizational goals	• Describe performance evaluation	• Group discussion	• Oral evaluation	**6 Hours**
		• Read:	• Lecture	• Written examination	
		o Work values and ethics (Code of Conduct, Code of Ethics, etc.)			

Unit of Competency	Learning Outcomes	Learning Activities	Methodology	Assessment Approach	Nominal Duration
		○ Understanding personal objectives			
		○ Understanding organizational goals			
		• Demonstrate Intra and Interpersonal skills at work	• Demonstration	• Observation	
		• Demonstrate personal commitment in work			
	3.2 Set and meet work priorities	• Describe company policies, operations, procedures and standards	• Group discussion	• Oral evaluation	
		• Read: ○ Time Management	• Lecture	• Written examination	
		○ Basic strategic planning concepts			
		○ Resource utilization and management			
		• Apply managing goals and time	• Demonstration	• Observation	
		• Practice: ○ economic use of resources and facilities ○ time management	• Demonstration	• Observation	
	3.3 Maintain professional growth and development	• Describe company recognition and incentives	• Group discussion	• Oral evaluation	
		• Read: ○ Career development opportunities	• Lecture	• Written examination	

Unit of Competency	Learning Outcomes	Learning Activities	Methodology	Assessment Approach	Nominal Duration
		○ Information on relevant licenses and or certifications			
		○ personal career development needs			
		• Determine personal career development needs	• Group discussion	• Oral evaluation	
4. Practice occupational health and safety	4.1 Identify hazard and risks	• Describe OSH procedures, practices and regulations	• Group discussion	• Oral evaluation	**6 Hours**
		• Read ○ OSH indicators ○ Organizational contingency practices	• Lecture	• Written examination	
		• Practice hazards/risks identification and control			
	4.2 Evaluate hazard and risks	• Describe effects of safety hazards	• Group discussion	• Oral evaluation	
		• Read ○ Threshold Limit Value – TLV	• Lecture	• Written examination	
		• Practice reporting safety hazards	• Role play	• Observation	
		• Demonstrate evaluating hazards and risks using communication equipment	• Demonstration	• Observation	
	4.3 Control hazards and risks	• Describe: ○ Organization safety and health protocol	• Group discussion	• Oral evaluation	

Unit of Competency	Learning Outcomes	Learning Activities	Methodology	Assessment Approach	Nominal Duration
		○ Company emergency procedure practices			
		• Practice personal hygiene	• Demonstration	• Observation	
		• Practice drills on responding to emergency	• Demonstration • Simulation	• Observation	
	4.4 Maintain occupational health and safety awareness	• Identify emergency-related drills information	• Lecture	• Written examination	
		• Practice occupational safety and health standards on personal records in the workplace	• Role play	• Observation	
		• Practice emergency related drills in the workplace	• Demonstration • Simulation	• Observation	

COMMON COMPETENCIES
72 HRS

Unit of Competency	Learning Outcome	Learning Activities	Methodology	Assessment Method	Nominal Duration
1. Apply safety measures in farm operations	1.1 Determine areas of concern for safety measures	• Identify work tasks in farm operations	• Lecture • Discussion • Incomplete worksheet • Power point presentation • Video presentation	• Written examination • Interview • Oral questioning • Demonstration	**(Total-7 hrs)** **1 hr**
		• Discuss safety measures in a workplace during farm operations	• Lecture • Discussion • Incomplete worksheet • Power point presentation • Video presentation • Role playing	• Written examination • Interview • Oral questioning • Demonstration	**1 hr**
		• Explain farm operations situations and period when to observe safety	• Lecture • Discussion • Incomplete worksheet • Power point presentation • Video presentation • Role playing	• Written examination • Interview • Oral questioning • Demonstration	**1 hr**
		• Identify appropriate tools, materials and outfits to be used	• Lecture • Discussion • Incomplete worksheet • Power point	• Written examination • Interview • Oral questioning	**2 hrs**

Unit of Competency	Learning Outcome	Learning Activities	Methodology	Assessment Method	Nominal Duration
			• presentation • Video presentation	• Demonstration	
		• Prepare tools, materials and outfits for the farm operation	• Lecture • Discussion • Power point presentation • Video presentation • Demonstration	• Written examination • Interview • Oral questioning • Demonstration	**2 hrs**
	1.2 Apply appropriate safety measures	• Enumerate uses and functions of tools and materials	• Discussion • Power point presentation • Video presentation • Demonstration	• Written examination • Interview • Oral questioning • Demonstration	**(Total -11 hrs.)** **1 hr**
		• Explain procedures of wearing personal protective equipment	• Discussion • Power point presentation • Video presentation • Incomplete worksheet	• Written examination • Interview • Oral questioning	**1 hr**
		• Discuss topics on • effectivity, shelf life and expirations of materials to be used.	• Discussion • Power point presentation • Video presentation • Incomplete worksheet	• Written • examination • Interview • Oral questioning	**1 hr**

		• Identify the emergency procedures	• Discussion • Power point presentation • Video presentation • Incomplete worksheet	• Written examination • Interview • Oral questioning	**2 hrs**
		• Identify hazards in a farm workplace	• Discussion • Power point presentation • Video presentation • Incomplete worksheet	• Written examination • Interview • Oral questioning	**2 hrs**
		• Use tools and materials	• Discussion • Power point presentation • Video presentation • Incomplete worksheet • Demonstration • Hands-on	• Written examination • Interview • Oral questioning • Demonstration	**2 hrs**
		• Wear personal protective equipment	• Discussion • Power point presentation • Video presentation • Incomplete worksheet • Demonstration	• Written examination • Interview • Oral questioning • Demonstration	**0.5 hr**

		• Prepare report on hazards in the workplace	• Discussion • Power point • presentation • Video presentation • Incomplete worksheet	• Written examination • Interview • Oral questioning • Demonstration	**1 hr**
		• Report on hazards in the workplace	• Discussion • Power point presentation • Video presentation • Incomplete worksheet • Role playing	• Written examination • Interview • Oral questioning • Demonstration	**0.5 hr**
	1.3 Safekeep/ dispose of tools, materials and outfit	• Explain cleaning and storing procedures of the used tools and outfit	• Discussion • Power point presentation • Video presentation • Incomplete worksheet	• Written examination • Interview • Oral questioning	**(Total – 6 hrs)** **1 hr**
		• State labelling and storing procedures for unused materials	• Discussion • Power point presentation • Video presentation • Incomplete worksheet	• Written examination • Interview • Oral questioning	**1 hr**
		• Explain proper wastes disposal	• Discussion • Power point presentation • Video presentation • Incomplete worksheet	• Written examination • Interview • Oral questioning	**1 hr**

		• Clean and store used tools and outfit	• Discussion • Power point presentation • Video presentation • Incomplete • worksheet • Demonstration • Hands-on	• Written examination • Interview • Oral questioning • Demonstration	**1 hr**
		• Label and store unused materials	• Discussion • Power point presentation • Video presentation • Incomplete worksheet • Demonstration • Hands-on	• Written examination • Interview • Oral questioning • Demonstration	**1 hr**
		• Dispose waste materials	• Discussion • Power point presentation • Video presentation • Incomplete worksheet • Demonstration • Hands-on	• Written examination • Interview • Oral questioning • Demonstration	**1 hr**
2. Use farm tools	2.1 Select and use farm tools	• Identify farm tools	• Discussion • Power point presentation • Video presentation • Incomplete worksheet • Demonstration	• Written examination • Interview • Oral questioning • Demonstration	**(Total -6 hrs)** **1 hr**

		• Describe faults and defective tools	• Discussion • Power point presentation • Video presentation • Incomplete worksheet • Demonstration	• Written examination • Interview • Oral questioning • Demonstration	**1 hr**
		• Discuss using of tools and equipment relating to manufacturer's manual	• Discussion • Power point presentation • Video presentation • Incomplete worksheet • Demonstration • Hands-on	• Written examination • Interview • Oral questioning • Demonstration	**1 hr**
		• Check farm tools for faults and defects	• Discussion • Power point presentation • Video presentation • Incomplete worksheet • Demonstration • Hands-on	• Written examination • Interview • Oral questioning • Demonstration	**1 hr**
		• Use tools and equipment relating to manufacturer's manual	• Discussion • Power point presentation • Video presentation • Incomplete worksheet • Demonstration • Hands-on	• Written examination • Interview • Oral questioning • Demonstration	**2 hrs**

	2.2 Select and operate farm equipment	• Identify farm equipment	• Discussion • Power point presentation • Video presentation • Incomplete worksheet	• Written examination • Interview • Oral questioning	**(Total -19 hrs)** **1 hr**
		• Explain importance of reading manufacturer's manual	• Discussion • Power point presentation • Video presentation • Incomplete worksheet	• Written examination • Interview • Oral questioning	**1 hr**
		• Discuss pre-operation check and its importance	• Discussion • Power point presentation • Video presentation • Incomplete worksheet	• Written examination • Interview • Oral questioning	**1 hr**
		• Identify different types of faults in farm equipment	• Discussion • Power point presentation • Video presentation • Incomplete worksheet	• Written examination • Interview • Oral questioning	**1 hr**
		• Enumerate reporting procedures	• Discussion • Power point presentation • Video presentation • Incomplete worksheet • Role playing	• Written examination • Interview • Oral questioning • Demonstration	**1 hr**

		• Enumerate procedures in using farm equipment	• Discussion • Power point presentation • Video presentation • Incomplete worksheet	• Written examination • Interview • Oral questioning	**1 hr**
		• Discuss safety procedures for farm operation	• Discussion • Power point presentation • Video presentation • Incomplete worksheet	• Written examination • Interview • Oral questioning	**1 hr**
		• Read manufacturer's manual	• Discussion • Power point presentation • Video presentation • Incomplete worksheet • Demonstration	• Written examination • Interview • Oral questioning • Demonstration	**1 hr**
		• Conduct pre-operation check-up	• Discussion • Power point presentation • Video presentation • Incomplete worksheet • Demonstration • Hands-on	• Written examination • Interview • Oral questioning • Demonstration	**1 hr**
		• Report identified faults	• Discussion • Power point presentation • Video presentation • Incomplete worksheet • Demonstration • Hands-on	• Written examination • Interview • Oral questioning • Demonstration	**1 hr**

		• Operate farm equipment	• Discussion • Power point presentation • Video presentation • Incomplete worksheet • Demonstration • Hands-on • Field visit	• Written examination • Interview • Oral questioning • Demonstration	**8 hrs**
		• Follow safety procedures	• Discussion • Power point presentation • Video presentation • Incomplete worksheet • Demonstration • Hands-on	• Written examination • Interview • Oral questioning • Demonstration	**1 hr**
	2.3 Perform preventive maintenance	• Enumerate cleaning procedures for tools and equipment	• Discussion • Power point presentation • Video presentation • Incomplete worksheet	• Written examination • Interview • Oral questioning • Demonstration	**(Total -7 hrs)** **1 hr**
		• Discuss significance of routine check-up and maintenance	• Discussion • Power point presentation • Video presentation • Incomplete worksheet	• Written examination • Interview • Oral questioning • Demonstration	**1 hr**
		• Explain procedures in storing tools and equipment	• Discussion • Power point presentation • Video presentation • Incomplete worksheet	• Written examination • Interview • Oral questioning	**1 hr**

		• Clean tools and equipment	• Discussion • Power point presentation • Video presentation • Incomplete worksheet • Demonstration • Hands-on	• Written examination • Interview • Oral questioning • Demonstration	**2 hrs**
		• Perform routine check –up and maintenance	• Discussion • Power point presentation • Video presentation • Incomplete worksheet • Demonstration • Hands-on	• Written examination • Interview • Oral questioning • Demonstration	**1 hr**
		• Store tools and equipment	• Discussion • Power point presentation • Video presentation • Incomplete worksheet • Demonstration • Hands-on	• Written examination • Interview • Oral questioning • Demonstration	**1 hr**
3. Perform estimation and basic calculation	3.1 Perform estimation	• Identify job requirements and work task/activity	• Lecture • Discussion	• Written exam • Oral questioning	**(Total -8 hrs)** **1 hr**
		• Identify materials and resources of job requirements	• Lecture • Discussion	• Written exam • Oral questioning	**1 hr**
		• Estimate time to complete work task/activity	• Lecture • Discussion • Demonstration • Video presentation	• Written exam • Oral questioning	**2 hrs**

		• Estimate quantities of materials and resources	• Lecture • Discussion • Demonstration	• Written exam • Oral questioning	**2 hrs**
		• Prepare and submit bill of materials	• Lecture • Discussion • Demonstration	• Written exam • Oral questioning • Demonstration	**2 hrs**
	3.2 Perform basic workplace calculation	• Describe different types of calculation	• Lecture • Discussion	• Written exam • Oral questioning	**(Total -8 hrs)** **1 hr**
		• Discuss different methods of calculation	• Lecture • Discussion	• Written exam • Oral questioning	**1 hr**
		• Describe system and unit of measurement	• Lecture • Discussion	• Written exam • Oral questioning	**2 hrs**
		• Compute quantity of feeds, amount of fertilizer and amount of medicines using methods of calculation, system of measurement and units of measurement	• Lecture • Discussion • Demonstration	• Written exam • Oral questioning	**4 hrs**

CORE COMPETENCIES
331 HRS

Unit of Competency	Learning Outcomes	Learning Activities	Methodology	Assessment Method	Nominal Duration
1. Conduct variety and seed selection	1.1 Conduct site characterization	• Classify soil types • Conduct soil type characterization procedures	• Lecture / discussion • Demonstration • Field Visits • Video presentation • Power point presentation • Research activity • Incomplete worksheet • Role playing • Hands-on	• Demonstration • Written examination • Oral questioning	**(Total-45 hrs) 9 hrs**
		• Identify types of grain growing ecosystem	• Lecture / discussion • Demonstration • Field Visits • Video presentation • Power point presentation • Research activity • Incomplete worksheet • Role playing • Hands-on	• Demonstration • Written examination • Oral questioning	**1 hr**
		• Explain the different climatic types ○ Weather disturbances • Identify climatic patterns	• Lecture / discussion • Demonstration • Field Visits • Video presentation • Power point presentation • Research activity • Incomplete • worksheet • Role playing • Hands-on	• Demonstration • Written examination • Oral questioning	**1 hr**
		• Describe the different types of land	• Lecture / discussion • Demonstration	• Demonstration • Written	**9 hrs**

Unit of Competency	Learning Outcomes	Learning Activities	Methodology	Assessment Method	Nominal Duration
		topography ○ Elevation • Determine site topography and elevation through ocular observation	• Field Visits • Video presentation • Power point presentation • Research activity • Incomplete worksheet Role playing • Hands-on	examination • Oral questioning	
		• Enumerate prevalent pests and diseases • Determine the prevalent pests and diseases • Gather pests and diseases – specimens/samples	• Lecture / discussion • Demonstration • Field Visits • Video presentation Power point presentation • Research activity • Incomplete worksheet • Role playing • Hands-on	• Demonstration • Written examination • Oral questioning	**6 hrs**
		• Prepare sample farm record	• Lecture / discussion • Demonstration • Field Visits • Video presentation • Power point presentation • Research activity • Incomplete worksheet • Role playing • Hands-on	• Demonstration • Written examination • Oral questioning	**1 hr**
	1.2 Select suitable seed variety	• Familiarize on grain varieties ○ agronomic characteristic ○ disease and insect pest reaction	• Lecture / discussion • Demonstration • Field Visits • Video presentation Power point presentation	• Demonstration • Written examination • Oral questioning	**3 hrs**
		• Discuss characteristics of newly released	• Research activity • Incomplete worksheet	• Demonstration • Written	**4 hrs**

Unit of Competency	Learning Outcomes	Learning Activities	Methodology	Assessment Method	Nominal Duration
		varieties • Perform varietal characterization • List recommended varieties • Access the sources of table of recommended varieties • Discuss adaptability test • Use the table of recommended varieties	• Role playing • Hands-on • Lecture / discussion • Demonstration • Field Visits • Video presentation • Power point presentation • Research activity • Incomplete worksheet • Role playing	examination • Oral questioning	
		• Select varieties	• Hands-on • Lecture / discussion • Demonstration • Field Visits • Video presentation Power point presentation • Research activity • Incomplete worksheet • Role playing • Hands-on	• Demonstration • Written examination • Oral questioning	**1 hr**
	1.3 Select quality seeds	• Enumerate the classes of seeds and their color tags • Explain PLSSC standards	• Lecture / discussion • Demonstration • Field Visits • Video presentation • Power point • presentation • Research activity Incomplete worksheet • Role playing • Hands-on	• Demonstration • Written examination • Oral questioning	**2 hrs**
		• Determine	• Lecture / discussion	• Demonstration	**1 hr**

Unit of Competency	Learning Outcomes	Learning Activities	Methodology	Assessment Method	Nominal Duration
		characteristics of quality seeds	• Demonstration • Field Visits • Video presentation Power point presentation • Research activity • Incomplete worksheet • Role playing • Hands-on	• Written examination • Oral questioning	
		• Explain sampling and germination test • Conduct sampling for the germination test • Conduct germination test	• Lecture / discussion • Demonstration • Field Visits • Video presentation • Power point presentation • Research activity • Incomplete worksheet • Role playing • Hands-on	• Demonstration • Written examination • Oral questioning	**2 hrs**
		• Select quality seeds	• Lecture / discussion • Demonstration • Field Visits • Video presentation • Power point presentation • Research activity • Incomplete worksheet • Role playing • Hands-on	• Demonstration • Written examination • Oral questioning	**1 hr**
		• Discuss procedures and guidelines in returning and exchanging non – germinating seeds	• Lecture / discussion • Demonstration • Field Visits • Video presentation	• Demonstration • Written examination • Oral questioning	**2 hrs**

Unit of Competency	Learning Outcomes	Learning Activities	Methodology	Assessment Method	Nominal Duration
		• Determine non-germinating seeds result of germination test • Return and exchange non- germinating seeds	• Power point presentation • Research activity • Incomplete worksheet • Role playing • Hands-on	• Demonstration • Written examination • Oral questioning	**2 hrs**
2. Perform land preparation	2.1 Perform pre-tillage operations	• Discuss proper land cleaning activities	• Lecture / discussion • Demonstration • Field Visits • Video presentation • Power point presentation • Role playing • Incomplete Worksheet	• Demonstration • Written examination • Oral questioning • Interview	**(Total-36 hrs)** **1 hr**
		• Identify tools, material and equipment • Prepare tools, material and equipment	• Lecture / discussion • Demonstration • Field Visits • Video • presentation • Power point presentation • Role playing • Incomplete Worksheet	• Demonstration • Written examination • Oral questioning	**1hr**
		• Discuss OSHS ○ PPE • Practice OSHS	• Lecture / discussion • Demonstration • Field Visits • Video presentation • Power point presentation • Role playing • Incomplete Worksheet	• Demonstration • Written examination • Oral questioning	**1hr**
		• Enumerate different machinery services Source out machinery	• Lecture / discussion • Demonstration	• Demonstration • Written examination	**2hrs**

Unit of Competency	Learning Outcomes	Learning Activities	Methodology	Assessment Method	Nominal Duration
		services	• Field Visits • Video presentation • Power point presentation • Research activity • Incomplete worksheet • Role playing	• Oral questioning	
		• Identify characteristics of a well prepared wetland rice and corn field • Describe the activities of preparing/repairing dikes • Prepare/ Repair dikes	• Lecture / discussion • Demonstration • Field Visits • Video presentation • Power point presentation • Research activity • Incomplete worksheet	• Demonstration • Written examination • Oral questioning	**9hrs**
	2.2 Conduct tillage operations	• Discuss three tillage operations • Apply appropriate tillage practices	• Lecture / discussion • Demonstration • Field Visits • Video presentation • Power point presentation • Role playing • Incomplete Worksheet • Hands-on	• Demonstration • Oral questioning • Written examination • Interview	**10 hrs**
		• Discuss OSHS o PPE • Practice OSHS	• Lecture / discussion • Demonstration • Field Visits • Video presentation • Power point presentation • Research activity • Incomplete worksheet	• Demonstration • Written examination • Oral questioning	**1hr**

Unit of Competency	Learning Outcomes	Learning Activities	Methodology	Assessment Method	Nominal Duration
	2.3 Perform post-tillage operations	• Enumerate activities of preparing dikes • Repair dikes • Discuss relevance of proper wastes disposal as post-operation activities • Dispose wastes • Explain procedures in completing transaction with machinery services • Complete transaction • Enumerate record keeping procedures • Perform record keeping	• Lecture / discussion • Demonstration • Field Visits • Video presentation • Power point presentation • Research activity • Incomplete worksheet	• Demonstration • Written examination • Oral questioning	**11 hrs**
3. Carry out crop establishment	3.1 Germinate seeds	• Discuss processes of seed soaking • Demonstrate seed soaking	• Lecture / discussion • Demonstration • Video presentation • Power point presentation • Incomplete • Worksheet • Hands-on	• Demonstration • Written examination • Oral questioning	**(Total 70.5 hrs)** **9 hrs**
		• Describe the procedures of seed incubation • Conduct seed incubation	• Lecture / discussion • Demonstration • Video presentation • Power point presentation • Incomplete • Worksheet • Hands-on	• Demonstration • Written examination • Oral questioning	

Unit of Competency	Learning Outcomes	Learning Activities	Methodology	Assessment Method	Nominal Duration
		• Describe the features of germinated seeds • Examine seeds for signs of germination	• Lecture / discussion • Demonstration • Video presentation • Power point presentation • Incomplete • Worksheet • Hands-on	• Demonstration • Written examination • Oral questioning	**1 hr**
		• Enumerate procedures of transporting and handling of germinated seeds • Handle and transport germinated seeds	• Lecture / discussion • Demonstration • Video presentation • Power point presentation • Incomplete • Worksheet • Hands-on	• Demonstration • Written examination • Oral questioning	**2 hrs**
		• Identify areas to be checked on the field • Check field for readiness for direct seeding	• Lecture / discussion • Demonstration • Video presentation • Power point presentation • Incomplete • Worksheet • Hands-on	• Demonstration • Written examination • Oral questioning	**5 hrs**

Unit of Competency	Learning Outcomes	Learning Activities	Methodology	Assessment Method	Nominal Duration
		• Identify the corrective measure to be used based on the result of inspection • Conduct corrective measures where necessary	• Lecture / discussion • Demonstration • Video presentation • Power point presentation • Incomplete • Worksheet • Hands-on	• Demonstration • Written examination • Oral questioning	**2hrs**
		• Differentiate manual direct seeding or broadcasting from mechanical seeding	• Lecture / discussion • Demonstration • Video presentation • Power point presentation • Incomplete • Worksheet • Hands-on	• Demonstration • Written examination • Oral questioning	**11hrs**
		• Explain PPE and its uses and functions • Use appropriate PPE	• Lecture / discussion • Demonstration • Video • Power point presentation • Incomplete • Worksheet • Hands-on • presentation	• Demonstration • Written examination • Oral questioning	**1hr**
		• Identify different kinds of pests and their natural enemies • Apply appropriate pests control measures	• Lecture / discussion • Demonstration • Video presentation • Power point presentation • Incomplete	• Demonstration • Written examination • Oral questioning	**2hrs**

Unit of Competency	Learning Outcomes	Learning Activities	Methodology	Assessment Method	Nominal Duration
			• Worksheet • Hands-on		
		• Identify the parts and functions of drum seeder • Perform manual direct seeding or broadcasting- • Apply mechanical direct seeding	• Lecture / discussion • Demonstration • Video presentation • Power point presentation • Incomplete • Worksheet • Hands-on	• Demonstration • Written examination • Oral questioning	**8hrs**
		• Enumerate post operation activities • Conduct post-operation activities	• Lecture / discussion • Demonstration • Video presentation • Power point presentation • Incomplete • Worksheet • Hands-on	• Demonstration • Written examination • Oral questioning	**5hrs**
	3.3 Establish seedling for transplanting	• Identify tools and equipment to be used for sowing • Prepare tools, materials and equipment to be used	• Lecture / discussion • Demonstration • Video presentation • Power point presentation • Incomplete • Worksheet • Hands-on	• Demonstration • Written examination • Oral questioning	**5hrs**
		• Discuss industry standards in seedbed preparations • Prepare seedbed	• Lecture / discussion • Demonstration • Video presentation • Power point presentation • Incomplete Worksheet • Hands-on	• Demonstration • Written examination • Oral questioning	

Unit of Competency	Learning Outcomes	Learning Activities	Methodology	Assessment Method	Nominal Duration
		• Explain industry standards in sowing • Sow seeds	• Lecture / discussion • Demonstration • Video presentation • Power point presentation • Incomplete • Worksheet • Hands-on	• Demonstration • Written examination • Oral questioning	**3hrs**
		• Explain industry standards in seedbed and seedling management • Apply seedbed and seedling management	• Lecture / discussion • Demonstration • Video presentation • Power point presentation • Incomplete • Worksheet • Hands-on	• demonstration • written examination • oral questioning	**5hrs**
		• Elaborate OSHS and GAP for sowing • Wear safety gears	• Lecture / discussion • Demonstration • Video presentation • Power point presentation • Incomplete • Worksheet • Hands-on	• Demonstration • Written examination • Oral questioning	**1.5hrs**
		• Enumerate post operation activities • Conduct post- operation activities	• Lecture / discussion • Demonstration • Video presentation • Power point presentation • Incomplete • Worksheet • Hands-on	• Demonstration • Written examination • Oral questioning	**5hrs**
		• Enumerate pre-	• Lecture / discussion	• Demonstration	**5hrs**

Unit of Competency	Learning Outcomes	Learning Activities	Methodology	Assessment Method	Nominal Duration
		transplanting procedures • Demonstrate pre-transplanting procedures	• Demonstration • Video presentation • Power point presentation • Incomplete • Worksheet • Hands-on	• Written examination • Oral questioning	
4. Manage crop growth	4.1 Conduct nutrient management	• Identify / Define different assessment methods for soil fertility • Assess soil fertility using recommended assessment method/s	• Lecture-discussion • Hands-on • Video presentation • Demonstration • Power point presentation • Visual Aids • Field activity on proper soil sampling	• Demonstration • Written exam • Oral questioning • Interview	**(Total - 105.5 hrs) 6 hrs**
		• Differentiate organic fertilizers from Inorganic Fertilizers • Identify different fertilizer formulations available in the locality • Select appropriate kind of fertilizer	• Lecture-discussion • Video presentation • Power point presentation	• Demonstration • Written exam • Oral questioning • Interview	**2 hrs**
		• Determine way for computing fertilizer recommendations • Compute for fertilizer rate	• Lecture-discussion • Video presentation • Power point presentation	• Demonstration • Written exam • Oral questioning	**2 hrs**

Unit of Competency	Learning Outcomes	Learning Activities	Methodology	Assessment Method	Nominal Duration
		• Enumerate the types and methods of fertilizer application • Use knapsack sprayer • Apply fertilizer according to recommendations	• Video presentation • Lecture discussion • Power point presentation • Demonstration • Hands-on	• Written exam • Oral questioning • Demonstration • Interview	**4 hrs**
	4.2 Perform water management	• Identify water assessment methods • Discuss the water requirements of the different growth stages • Enumerate indicators of water stress • Explain water requirements in different ecosystems • Assess water need based on the result of assessment	• Lecture • Discussion • Actual field visit and observation • Power point presentation • Demonstration • Hands-on	• Written exam • Interview • Demonstration • Oral questioning	**4 hrs**
		• Enumerate the types and methods of fertilizer application • Use knapsack sprayer • Apply fertilizer according to recommendations	• Video presentation • Lecture-discussion • Power point presentation • Demonstration • Hands-on	• Written exam • Oral questioning • Demonstration • Interview	**4 hrs**
		• Identify and discuss different water management strategies • Apply appropriate water management strategy/ies	• Lecture discussion • Field visit • Demonstration • Hands-on • PPT presentation • Video presentation	• Written exam • Interview • Demonstration • Oral questioning	**5hrs**

Unit of Competency	Learning Outcomes	Learning Activities	Methodology	Assessment Method	Nominal Duration
		• Enumerate/Explain different water conservation methods and their applications • Enumerate and describe different water impounding techniques • Apply water conservation methods	• Lecture-discussion • Video presentation; • Field visit • Hands-on • Demonstration	• Written exam • Interview • Demonstration • Oral questioning	**6 hrs**
	4.3 Carry out pest management	• Identify different types of rice and corn pests and diseases • Enumerate and discuss methods of assessing occurrence of pests and diseases • Assess occurrence of pests and disease in the rice field and cornfield	• Lecture-discussion • Field visit/ observation • PPT presentation • Video presentation • Demonstration • Hands-on	• Written exam • Interview • Demonstration • Oral questioning	**7 hrs**
		• Identify different management options for a particular pest/disease • Explain GAP on rice and corn pests and diseases management • Discuss IPM • Classification/identification of harmful and beneficial insects • Enumerate and explain FPA regulations on the use of chemicals • Wear PPE and practice OSHS	• Lecture-discussion • Audio-visual aids video/power point presentations • Field visit and observation • Demonstration • Hands-on	• Written exam • Interview • Demonstration • Oral questioning	**9 hrs**

Unit of Competency	Learning Outcomes	Learning Activities	Methodology	Assessment Method	Nominal Duration
		• Apply pest and diseases management			
		• Discuss the importance of regular field monitoring using AESA and other damage assessment techniques • Conduct regular field monitoring	• Lecture-discussion • Audio-visual aids video/power point presentations • Field visit and observation • Demonstration • Hands-on	• Written exam • Interview • Demonstration • Oral questioning	**6 hrs**
		• Identify extent of crop damages and yield losses • Identify and apply the different preventive and control measures for occurrence of pests and diseases	• Lecture-discussion • Audio-visual aids video/power point presentations • Field visit and observation • Demonstration • Hands-on	• Written exam • Interview • Demonstration • Oral questioning	**5 hrs**
	4.4 Conduct management of Abiotic stress	• Discuss the classification of abiotic stress ○ strong winds ○ extreme temperature ○ drought ○ flood/submergence ○ nutrient deficiency/ toxicity ○ salinity/acidity/ alkalinity • Identify assessment techniques • Assess presence of abiotic stresses	• Lecture-discussion • Demonstration • Video presentation • Hands-on • Field visit	• Written exam • Interview • Demonstration • Oral questioning	**9 hrs**

Unit of Competency	Learning Outcomes	Learning Activities	Methodology	Assessment Method	Nominal Duration
		• Discuss different abiotic stress management • Discuss use of knapsack sprayer • Explain GAP on abiotic stress management • Explain FPA regulations for abiotic stress management • Wear PPE and practice OSHS • Carry –out abiotic stress management	• Lecture-discussion • Demonstration • Video presentation • Hands-on • Field visit	• Written Exam • Oral questioning • demonstration	**9 hrs**
		• Discuss different remedial actions • Explain importance of proper documentation • Explain communication and coordination procedures • Prepare sample damage/calamity report • Carry-out remedial actions • Apply for crop insurance claim	• Lecture-discussion • Demonstration • Video presentation • Hands-on • Field visit, • Role play	• Written Exam • Interview • Oral questioning • demonstration	**4.5 hrs**

	4.5 Conduct purification activity	• Explain selection criteria • Select area for seed purification activity	• Lecture-discussion • Video presentation • Field visit	• Written Exam • Interview • Oral questioning • Demonstration	**1.5 hrs**
		• Describe the characteristics of off-types • Identify off-types in the field • Explain/discuss the importance and proper timing of roguing • Discuss roguing procedures • Explain GAP for roguing • Wear PPE and practice OSHS 5.9 Remove off-types	• Lecture-discussion • Demonstration • Video presentation • Hands-on • Field visit,	• Written Exam • Interview • Oral questioning • demonstration	**10 hrs**

		• Enumerate disposal procedures
		  ○ remove and carry
		  ○ composting
		  ○ feeds for livestock
		  ○ remove and bury
		• Discuss environmental rules and regulations
		• Explain GAP on Agri-wastes disposal
		• Conduct proper disposal off-types
			• Lecture discussion
			• Field visit and observation
			• Hands-on
			• PPT presentation
			• Demonstration
				• Written Exam
				• Interview
				• Oral questioning
				• Demonstration
					5 hrs

		• Discuss harvest and post-harvest operations for seed production • Practice OSHS	• Lecture-discussion • Video presentation • Hands-on • Field visit	• Written Exam • Interview • Oral questioning	**6.5 hrs**

		• Prepare sample documentation and record keeping • Conduct harvesting and post-harvesting operations for seed production activities	• Demonstration	• Demonstration	
5. Conduct harvest and post- harvest operations	5.1 Carry out pre-harvest operations	• Enumerate physiological indicators of rice and corn crops maturity • Describe physical indicators of rice and corn crop maturity	• Lecture-discussion • Power point presentation • Visual aids • Video presentation • Practicum • (Actual identification of physiological indicators in pictures) • Lecture-discussion • Power point presentation • Visual aids	• Written examination • Oral questioning	**(Total -74 hrs)** **2 hrs**
		• Discuss and describe agronomic characters of different rive varieties		• Written examination Oral questioning	**1hr**

		• Explain the importance of record keeping • Identify the uses of different farm records • verify records for harvesting	• Lecture-discussion • Video presentation • Power point presentation • Hands -on	• Written examination • Oral questioning • Demonstration	**2.5hrs**
		• Describe weather condition and its effect on harvestable crop • Explain Contingency Management Strategies for adverse weather condition • Monitor weather condition	• Lecture-discussion • Power point presentation • Illustrations • Field demonstration/ visit • Photographs	• Observation and oral questioning • Written examination	**3hrs**
		• Explain recommended draining procedures before harvest including its importance • Drain the rice and corn field	• Lecture-discussion • Power point presentation • Field visit • Hands-on • Video presentation • Hands- on	• Written examination • Oral questioning • Demonstration	**5hrs**
		• Identify the type of obstructions in the field • Remove obstructions from the rice and corn fields	• Power point presentation • Video presentation • Practicum/ hands on	• Written examination • Oral questioning • Demonstration	**6.5hrs**
		• Identify the use of harvesting tools and materials • Prepare the harvesting tools and materials	• Power point presentation • Video presentation • Practicum/hands-on	• Written examination • Oral questioning	**5hrs**

	5.2 Carry out harvesting activity	• Describe harvesting process • Enumerate methods of determining the right time to harvest • Identify factors affecting grain quality at harvest • Estimate yield • Harvest rice and corn crops	• Lecture discussion • Power point presentation • Audio visual presentation • Field visit with observation • Demonstration • Hands -on	• Demonstration • Written examination • Oral questioning	**2.5hrs**
		• Explain harvesting methods • Discuss GAP for harvesting • Implement appropriate harvesting methods	• Lecture-discussion • Video presentation • Field visit/practicum • Power point presentation • Demonstration	• Written examination • Oral questioning • Demonstration	**7.5hrs**
		• Describe the types and procedures of pilling • Pile harvested rice and corn	• Lecture discussion • Demonstration • Power point presentation • Video presentation • Hands-on	• Written examination • Oral questioning • Demonstration	**10 hrs**
		• Describe the recommended PPE for harvesting rice and corn	• Lecture discussion • Demonstration • Video/Power point presentation • Field visit • Hands- on	• Written examination • Oral questioning • Demonstration	**5 hrs**
	5.3 Carry out postharvest activity	• Illustrate and explain postharvest operations • Perform post-harvest operations for rice and corn	• Lecture-discussion • Video/power point presentation • Hands on • Role playing • Demonstration • Field visit • Visual aids	• Written examination • Oral questioning • Demonstration	**2 hrs**

		• Identify the different postharvest equipment and facilities for rice and corn • Describe the uses of the different postharvest equipment & facilities for rice and corn • Enumerate causes of grain damage and yield losses • Explain proper monitoring procedures on the use of postharvest equipment and operations • Monitor the use and operation of the postharvest equipment and facilities	• Lecture discussion • Video/ power point presentation • Practicum /hands on • Field visit with observation • Demonstration	• Written examination • Oral questioning • Demonstration	**10hrs**
		• Describe appropriate storage area • Discuss the procedures of storing and stacking • Demonstrate proper storing and stacking bags of palay and milled rice and corn	• Lecture-discussion • Video/power • point presentation • Role playing • Field visit • Hands-on	• Written examination • Oral questioning • Demonstration	**3.5 hrs**
		• Discuss handling and packaging of palay and milled rice • FIFO • Apply proper handling and packaging of palay and milled rice	• Lecture discussion • Video/power point presentation • Hands – on Demonstration	• Written examination • Interview • Demonstration • Oral questioning	**2 hrs**

		• Describe the recommended practices in monitoring storage pests & diseases • Monitor storage pests and diseases • Prepare sample monitoring report • Report infestation to proper authorities	• Lecture discussion • Video/power point presentation • Practicum • Demonstration • Field visit	• Written examination • Interview • Demonstration • Oral questioning	**2 hrs**
		• Explain the principles of marketing • Discuss various marketing strategies for palay, milled rice and corn • 3Identify several market outlets for palay, milled rice and corn in the locality • Negotiate with a palay and milled rice and corn trader • Market palay and milled rice and corn	• Lecture discussion • Video/power point presentation • Role Playing • Demonstration	• Written examination • Interview • Demonstration • Oral questioning	**4.5 hrs**

3.2 TRAINING DELIVERY

1. The delivery of training shall adhere to the design of the curriculum. Delivery shall be guided by the principles of competency-based TVET.

   a. Course design is based on competency standards set by the industry or recognized industry sector; (Learning system is driven by competencies written to industry standards)

   b. Training delivery is learner-centered and should accommodate individualized and self-paced learning strategies;

   c. Training can be done on an actual workplace setting, simulation of a workplace and/or through adoption of modern technology (Video Conferencing, Webinar, etc).

   d. Assessment is based in the collection of evidence of the performance of work to the industry required standards;

   e. Assessment of competency takes the trainee's knowledge and attitude into account but requires evidence of actual performance of the competency as the primary source of evidence.

   f. Training program allows for recognition of prior learning (RPL) or current competencies;

   g. Training completion is based on satisfactory performance of all specified competencies.

2. 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 and their variations/components may be adopted singly or in combination with other modalities when designing and delivering training programs:

   2.1. **Institution- Based:**

   - Classroom-based or School-based training coordinated study other the school or center, with classroom and/or laboratory components.

   - Dual Training System (DTS) / Dualized Training Program (DTP) which contain both in-school and in-industry training or fieldwork components.

   - Supervised Industry Training (SIT) or on-the-job training (OJT) 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 as prescribed in the training regulations. It is imperative that the deployment of trainees in the workplace is adhered to training programs agreed by the institution and enterprise and status and progress of trainees are closely monitored by the training institutions to prevent opportunity for work exploitation.

- Project-based instruction is an authentic instructional model or strategy in which students plan, implement and evaluate projects that have real world applications.

2.2. **Enterprise-Based:**

Enterprise-based training may also be taken to mean a school or training center with one or more partner enterprise or an enterprise or group of enterprises setting up a common training facility or partnering with a school or training center.

- **Formal Apprenticeship** – Training within employment involving a contract between an apprentice and an enterprise on an approved apprenticeable occupation.

- **Informal Apprenticeship** - is based on a training (and working) agreement between an apprentice and a master craftsperson wherein the agreement may be written or oral and the master craftsperson commits to training the apprentice in all the skills relevant to his or her trade over a significant period of time, usually between one and four years, while the apprentice commits to contributing productively to the work of the business. Training is integrated into the production process and apprentices learn by working alongside the experienced craftsperson.

- **Enterprise-based Training** - where training is implemented within the company in accordance with the requirements of the specific company.

2.3. **Community-Based –**refers to a short program conducted or coordinated by NGOs, LGUs, training centers and other TVET providers which are intended to address the specific needs of a community. Such programs are usually conducted in informal settings such as barangay hall, basketball courts and other available venues in a community. These programs can also be mobile training programs (MTP).

3.3 TRAINEE ENTRY REQUIREMENTS

Trainees or students who want to enroll in this course should possess the following requirements:

- Able to read and write
- Able to communicate, both orally and in writing
- Basic mathematical skills
- Physically able

3.4 TOOLS AND EQUIPMENT

GRAINS PRODUCTION NC II

Recommended list of tools, equipment and materials for the training of 25 trainees for Grains Production NC II are as follows:

Full Qualification

A. School equipment, tools and materials

1 unit Digital light projection
1 unit System unit (computer)
1 White board
1 set White board marker and eraser
1 unit Audio system
1 lot Internet connection
References

- Books
- Charts
- Slides
- Manuals
- Codes and regulations

B. Farm tools, equipment and materials

TOOLS		EQUIPMENT		MATERIALS	
QTY	**Description**	**QTY**	**Description**	**QTY**	**Description**
5 pcs	Calculator	2 units	Electric fan	25pcs	Petri dish
15 pcs	Scythe	1 unit	Stand projector	100g	Rice and Corn Seeds
15 pcs	Shovel	1 unit	Lapel	1Roll	Paper Towel
25 pcs	A-Frame	1 unit	Digital camera	1 set	White board marker and eraser
15 pcs	Bolo	2 units	Hand tractor	2 bottles	Alcohol
5 units	Farmalite	3 units	Plow	100g in roll	Cotton
5 units	Magnifying lens	3 units	Harrow	10 pcs	Cartolina
5 pcs	Sack needle	1 unit	Draft animals *	10 pcs	Manila paper
5 sets	Rodent trap	1unit	Rotavator	10 pcs	Permanent marker
1 unit	Moisture meter	1unit	Paddling	25 pcs	Record book
5 pcs	Sharpening stones	1unit	Spiral/auger	25pcs	Ballpen
5 pcs	Triangular files	1unit	Multi tiller *	1 pack	Plastic cellophane

TOOLS		EQUIPMENT		MATERIALS	
QTY	**Description**	**QTY**	**Description**	**QTY**	**Description**
10 pcs	Sickle	1 pc	Drum seeder	5 packs	Index card
		4pc	Knapsack sprayer	5pcs	Pallet
		5 sets	PPE/safety gears	12kg	Certified Seeds
		1 unit	Weeder	5 pcs	Pails
		1 unit	Weighing scale	15pcs	Sacks (5 kg)
		1 unit	Electric fan	5m	Nets
		1 unit	Shed House	12 pcs	Banana leaves
			• bamboo	1 sack	Carbonized rice hull
			• coconut leaves/nipa	1bot	Chemicals
			• cogon	1bot	Fungicide
			• coco lumber	1bot	Herbicide
			• nails	5bot	Insecticide
			• rattan	1bot	Molluscicide
				1bot	Rodenticide
				2 sacks	Rice straw
				2 sacks	Rice hull
				1 bundle	Tying materials - lapat/cogon
				5pcs	Pail
				5 pcs	Plastic bags (for fertilizer application)
					Inorganic Fertilizer
				10kg	-urea
				64kg	-complete
				10kg	-ammophos
				2 sets	First aid kit
				5set	MOET Kit
				1 set	STK Kit
				5 set	LCC
				35 pcs	Polyethylene seedling bags (4x8)
				5 pcs	Meter stick
				5 pcs	Insect nets
				15 pcs	Sacks (packaging material)

TOOLS		EQUIPMENT		MATERIALS	
QTY	**Description**	**QTY**	**Description**	**QTY**	**Description**
				5 pcs	Drying nets
				1 roll	Plastic twine
				5 pcs	Winnower
				5 sets	Cleaning materials ○ Brooms ○ Dust pan ○ Feather Duster
				50 L	Fuel
				1L	Oil
				3 pcs	Wooden plank
				Training Materials	
				25 sets	Training kits
				25 copies	Table of Released Popular Varieties
				1 set	Flip chart and posters
				1 set	Beneficial and harmful insects chart
				1 set	Major Diseases of Rice and Corn Chart
				1 set	Common Weeds of Lowland Rice Chart
				1 set	Nutrient Deficiency Diagnostic Table
				1 set	References and Manuals
				1 set	Palay Check Modules

COC 1. MANAGE GRAINS PRODUCTION

TOOLS		EQUIPMENT		MATERIALS	
QTY	**Description**	**QTY**	**Description**	**QTY**	**Description**
5 pcs	Calculator	2 units	Electric fan	25pcs	Petri dish
15 pcs	Shovel	1 unit	Stand projector	100g	Rice and corn seeds
5 pcs	Sharpening stones	1 unit	Lapel	1Roll	Paper towel
15 pcs	Bolo	1 unit	Digital camera	1 set	White board marker and eraser
5 units	Farmalite	1 pc	Drum seeder	2 bottles	Alcohol
5 units	Magnifying lens	4 pcs	knapsack sprayer	100g in roll	Cotton
		5 sets	PPE/safety gears	10 pcs	Cartolina
		1 unit	Weeder	10 pcs	Manila paper
		1 unit	Weighing scale	10 pcs	Permanent marker
				25 pcs	Record book
				25pcs	Ballpen
				1 pack	Plastic cellophane
				5pcs	pallet
				12kg	Certified Seeds
				5 pcs	Pails
				15pcs	Sacks (5 kg)
				5m	Nets
				12 pcs	Banana leaves
				1 sack	Carbonized rice hull
				1bot	Chemicals
				1bot	Fungicide
				1bot	Herbicide
				1bot	Insecticide
				1bot	Molluscicide
				1bot	rodenticide
				2 sacks	Rice straw
				2 sacks	Rice hull
				1 bundle	Tying materials - lapat/cogon
				5pcs	pail
				5 pcs	Plastic bags (for fertilizer application)

					Inorganic Fertilizer
				10kg	-urea
				64kg	-complete
				10kg	-ammophos
				2 sets	First aid kit
				5set	MOET Kit
				1 set	STK Kit
				5 set	LCC
				35 pcs	Polyethylene seedling bags (4x8)
				5 pcs	Meter stick
				5 pcs	Insect nets
				15 pcs	sacks (packaging material)
				5 sets	Cleaning materials ○ Brooms ○ Dust pan ○ Feather Duster
				Training Materials	
				25 sets	Training kits
				25 copies	Table of Released Popular Varieties
				1 set	Flip chart and posters
				1 set	Beneficial and harmful insects chart
				1 set	Major Diseases of Rice and Corn Chart
				1 set	Common Weeds of Lowland Rice Chart
				1 set	Nutrient Deficiency Diagnostic Table
				1 set	References and Manuals
				1 set	Palay Check Modules

COC 2: PERFORM LAND PREPARATION

TOOLS		EQUIPMENT		MATERIALS	
QTY	**Description**	**QTY**	**Description**	**QTY**	**Description**
15 pcs	Scythe	2 units	Hand tractor	50 L	Fuel
15 pcs	Shovel	3 units	Plow	1L	Oil
25 pcs	A-Frame	3 units	Harrow	3 pcs	Wooden plank
15 pcs	Bolo	1 unit	Draft animals *		
		1 unit	Rotavator		
		1 unit	Paddling		
		1 unit	Spiral/auger		
		1unit	Multi tiller *		

COC 3: CONDUCT OF HARVEST AND POST-HARVEST OPERATIONS

TOOLS		EQUIPMENT		MATERIALS	
QTY	**Description**	**QTY**	**Description**	**QTY**	**Description**
10 pcs	Scythe	1 unit	Solar dryer	15 pcs	sacks
10 pcs	Bolo	1 unit	Electric fan	5 pcs	Drying nets
5 pcs	Sack needle	1 unit	Weighing scale	1 roll	Plastic twine
5 sets	Rodent trap	5 sets	PPE	5 pcs	Winnower
1 unit	Moisture meter	1 unit	Extension cord	5 sets	Cleaning materials • Brooms • Dust pan • Feather Duster
5 pcs	Sharpening stones	2 units	Fire Extinguisher	5 bots	Insect spray
5 pcs	Triangular files	1 unit	Shed House • bamboo • coconut leaves/nipa • cogon • coco lumber • nails • rattan	2 sets	First aid kit
10 pcs	Sickle			25 pcs	Record book
				25 pcs	Ballpen
				5 pcs	Permanent marker
				5 packs	Index card

* NOTE: Access to and use of equipment /facilities can be provided through cooperative arrangements or MOA with other partner-farms/companies.

3.5 TRAINING FACILITIES

Based on a class size of 25 students/trainees.

SPACE REQUIREMENT	SIZE IN METERS	AREA IN SQ. METERS	TOTAL AREA IN SQ. METERS	GRAND TOTAL AREA IN SQ. METERS
A. Building (permanent)				**161**
• Lecture Room	2.00 x 1.00 per student/trainee	2.00 per student	50.00	
• Learning Resource Center	6.00 x 5.00		30.00	
• Store Room	3.00x4.00	12.00	12.00	
• Wash Room	3.00x5.00 (Male) 3.00x5.00 (Female)	15.00 15.00	30.00 30.00	
• Laboratory	3.00x3.00	9.00	9.00	
B. Demo Farm				**2,500**
• Field plot and Working shed (100sq.m.)	10 x 10 per trainee	100 per trainee	2500.00	
Total				**2,661**

NOTE: Access to and use of equipment /facilities can be provided through cooperative arrangements or MOA with other partner-farms/companies**.**

3.6 TRAINER'S QUALIFICATIONS FOR AGRICULTURE, FORESTRY SECTOR

Trainers who will deliver the training on **GRAINS PRODUCTION NCII** should possess the following Qualifications:

- Must be a holder of National TVET Trainer Certificate I Level I (TM I) in Grains Production NCII)
- Must have at least two (2) years relevant industry experience for the last five (5) years

3.7 INSTITUTIONAL ASSESSMENT

Institutional Assessment is undertaken by trainees in a structured learning program to determine their achievement of units of competencies. It is administered by the trainer/assessor at end of each learning module.

The result of the institutional assessment may be considered as evidence for the assessment for national certification.

As a matter of policy, graduates of programs registered with TESDA under these training regulations are required to undergo mandatory national competency assessment upon completion of the program.

SECTION 4 ASSESSMENT AND CERTIFICATION ARRANGEMENT

Competency Assessment is the process of collecting evidence and making judgments whether competency has been achieved. The purpose of assessment is to confirm that an individual can perform to the standards expected at the workplace as expressed in relevant competency standards.

The assessment process is based on evidence or information gathered to prove achievement of competencies. The process may be applied to a full qualification or employable unit(s) of competency in partial fulfillment of the requirements of the national qualification.

4.1. NATIONAL ASSESSMENT AND CERTIFICATION ARRANGEMENTS

4.1.1 The Full National Qualification of **GRAINS PRODUCTION NC II** shall be acquired through the accumulation of Certificates of Competency in the following clusters/units of competencies:

COC 1 Manage Grains Production

- Conduct variety and seed selection
- Carry-out crop establishment
- Manage crop

COC 2 Perform Land Preparation

COC 3 Conduct Harvest and Post-Harvest Operation

4.1.2 Upon accumulation and submission of all the above COCs acquired, an individual shall be issued the corresponding National Certificate signed by the TESDA Director General. Certificates of Competency (COCs) shall be issued to candidates who have been assessed as competent in any of the above COCs (COC 1, COC 2, COC 3).

4.1.3 Assessment shall focus on the core units of competency. The basic and common units shall be integrated or assessed concurrently with the core units.

4.1.4 Recognition of Prior Learning (RPL). Candidates who have gained competencies through education, informal training, work or life experiences may apply for recognition in a particular qualification through competency assessment.

4.1.5 The following are qualified to apply for assessment :

4.1.5.1 Graduating students/trainees of WTR-registered programs, graduates of NTR programs or graduates of formal/non-formal/informal including enterprise-based trainings related to grains production

4.1.5.2 Industry workers in grains production

4.1.6 Re-assessment shall focus only on the specific area/s where the candidate has not satisfactorily achieved the required level of competence AND must be undertaken within two (2) years during the period of validity of the Training Regulations.

4.1.7 A candidate who fails the assessment for two (2) consecutive times shall be advised to go through a refresher course before taking another assessment.

4.2. COMPETENCY ASSESSMENT REQUISITE

4.2.1 **Self-Assessment Guide**. The self-assessment guide (SAG) is accomplished by the candidate prior to actual competency assessment. SAG is a pre-assessment tool to help the candidate and the assessor determine what evidence is available, where gaps exist, including readiness for assessment.

This document can:

a) Identify the candidate's skills and knowledge
b) Highlight gaps in candidate's skills and knowledge
c) Provide critical guidance to the assessor and candidate on the evidence that need to be presented
d) Assist the candidate to identify key areas in which practice is needed or additional information or skills that should be gained prior to assessment.

4.2.2 **Accredited Assessment Center.** Only Assessment Center accredited by TESDA is authorized to conduct competency assessment. Assessment centers undergo a quality assured procedure for accreditation before they are authorized by TESDA to manage the assessment for National Certification.

4.2.3 **Accredited Competency Assessor**. Only accredited competency assessor is authorized to conduct assessment of competence. Competency assessors undergo a quality assured system of accreditation procedure before they are authorized by TESDA to assess the competencies of candidates for National Certification.

4.2.3.1 Qualification of Competency Assessors

For Trainer-Assessor

- Holder of National TVET Trainer Certificate Level I (NTTC) in Grains Production NC II
- Have at least 2 years relevant industry experience for the last five (5) years
- Have assisted in the actual conduct of assessment to at least two (2) candidates.

For Industry-Assessor

- Holder of National Certificate in Grains Production NCII
- Holder of Certificate of Competency (COC) in Conduct Competency Assessment under the Trainers Methodology Level I (TM I)
- Have at least two (2) years relevant industry experience for the last five (5) years
- Have assisted in the actual conduct of assessment to at least two (2) candidates.

COMPETENCY MAP – AGRICULTURE, FORESTRY AND FISHERY SECTOR
GRAINS PRODUCTION NC II

ANNEX A

BASIC COMPETENCY

Receive and Respond to Workplace Communication	Participate in Workplace Communication	Lead Workplace Communication	Use relevant technologies	Develop Team and Individual	Work With Others	Work in a Team Environment	Lead Small Team	Solve problems related to work activities	Apply Problem Solving Techniques in the Workplace
Practice basic housekeeping procedures	Demonstrate work values	Develop and practice negotiation skills	Use mathematical concepts and techniques	Plan and Organize Work	Practice career professionalism	Practice occupational health and safety procedures			

COMMON COMPETENCY

Apply safety measures in farm operations	Use farm tools and equipment	Perform estimation and calculation	Apply basic first aid	Process farm wastes	Perform record keeping

CORE COMPETENCY									
Supervise agronomic crop maintenance	Produce fruit bearing crops	Undertake agronomical crop maintenance activities	Implement vertebrate pest control program	Implement a plant establishment program	Maintain the workplace	Perform post harvest operations of major tropical fruits	Undertake agronomic crop harvesting activities	Monitor and operate water treatment processes	Transport, handle and store chemicals
Support agronomic crop work	Perform post harvest operation of major lowland and semi-temperate vegetable crops	Save, prepare and store agricultural seed	Collect samples for a rural production of horticulture monitoring program	Supervise agricultural crop establishment	Support horticultural crop work	Prepare land for agricultural crop production	Undertake field budding and grafting	Save, prepare and store agricultural seed	Implement and monitor quality assurance procedures
Support irrigation work	Prepare and apply chemicals	Coordinate a horticultural crop maintenance program	Undertake agronomic crop maintenance activities	Support and review business structures and relationships	Support nursery work	implement a plant nutrition program	Establish horticultural crops	Coordinate machinery and equipment maintenance and repair for agricultural crops	Promote plant health
Conduct pre-horticultural farm operations	Control weeds	Undertake a propagation program	Operate pertigation equipment	Implement and monitor a property improvement plan	Produce vegetables	Implement a post-harvest program	Coordinate horticultural crop harvesting	Operate within a budget framework	Supervise maintenance of machinery and equipment
Plan & implement a chemical use program	Establish agronomic crops	Supervise horticultural crop harvesting	Comply with industry quality assurance requirements	Keep records for a farm business	Apply basic first aid	Implement vertebrate pest control program	Control weeds, pests and /or diseases in crops	Supervise agronomic crop harvesting	Analyze and interpret production data
Conduct Variety and Seed Selection	Perform Land preparation	Carry-out Crop Establishment	Manage crop	Conduct of Harvest and Post-Harvest Operations					

GLOSSARY OF TERMS

1. **3Rs**- Reduce, Re-use, and Recycle
2. **ABIOTIC**- Non living thing the abiotic factor at the environment include light temperature and atmospheric gases
3. **AWD**- Alternate wet and dry
4. **BIOTIC**- of or having to do with or living organism, produce or caused by living organism
5. **CLIMATE CHANGE** – records changes over decades to millions of years
6. **CLIMATE** – average and variations of weather over a long period of time (30 years)
7. **CLEANING-** removal of unnecessary materials/debris in the field; is an essential postharvest operation which is done by removing foreign seeds and other impurities
8. **CRH-** Carbonized Rice Hull
9. **DEHUSKING** –process of removing outer covering of corn ears
10. **DIKES-** levees or bunds enclosing a field
11. **DRY LAND TILLAGE** – plowing and harrowing dry soil or upland fields
12. **DRYING** – the process of reducing moisture content through the process of heat transfer by converting water in the grains to a vapor which is brought to the atmosphere
13. **FARMALITE** –a tool use to directly sow corn seeds
14. **GRAIN QUALITY** –is a combination of physical and chemical characteristics which are considered desirable
15. **HARVEST** - the process or period of gathering in mature crops by cutting the panicles attached to the stalks
16. **LAND PREPARATION** – the process of preparing the soil for planting.
17. **MILLING** – involves the removal of hull and bran from rough rice to produce milled rice or white rice
18. **MOISTURE CONTENT**–is the quantity of water contained in a material or grain at a given time
19. **OFF TYPE**- Means any seed or plant not a part of the variety in that deviates

20. **OSHS**- Occupational Safety Hazzard Standard

21. **PhilGAP** – Philippine Good Agricultural Practices

22. **PPE-** Protective Polyethylene Equipment

23. **POSTHARVEST** –encompasses the sequence of activities and operations from the time and place of harvest to the time and place of consumption

24. **RIVERINE** – area of crop production along the river banks

25. **SHELLING** – removal of grains from the cob

26. **SICKLE** – a farming tool with a long curved blade and long handle that is used for cutting grains

27. **SIDE PLOWING** – passing the plow along the edges of the field (near the dikes)

28. **SIPS- S**oak, **I**ncubate, **P**repare the area for sowing and **S**ow the pre-germinated seeds

29. **STORAGE** – the preservation of quality and quantity of palay/rice for future use.

30. **TILLAGE** – is the process of mechanically altering some physical characteristics of the soil to obtain a condition more appropriate for growing crops

31. **THRESHING** – the process of detaching and separating rice grains from the panicle

32. **UPLAND**- a land area that does not impound water, not confined to higher elevation alone.

33. **WEATHER** – all natural phenomena within the atmosphere at a given time (hours to days)

34. **WETLAND TILLAGE** – preparing the soil of lowland fields in a saturated or flooded condition

35. **WEED -** weed is a plant considered undesirable in a particular situation a plant in the wrong place.

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