TRAINING REGULATIONS

RICE MACHINERY OPERATIONS NC II

AGRICULTURE AND FISHERY SECTOR

Technical Education and Skills Development Authority
East Service Road, South Superhighway, Taguig, Metro Manila

TABLE OF CONTENTS

AGRICULTURE, FISHERY SECTOR

RICE MACHINERY OPERATIONS NC II

TRAINING REGULATIONS FOR
RICE MACHINERY OPERATION NC II

SECTION 1 RICE MACHINERY OPERATIONS NC II QUALIFICATION

The **RICE MACHINERY OPERATIONS NC II** Qualification consists of competencies that a person must achieve in the operation and basic routine maintenance of rice machinery for land preparation, crop establishment, crop care, harvesting and threshing, drying and milling.

This Qualification is packaged from the competency map of the **Agri-Fishery Sector** as shown in Annex A.

The units of competency comprising this qualification includes the following:

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

Code	COMMON COMPETENCIES
AGR321201	Apply safety measures in farm operations
AGR321202	Use farm tools and equipment
AGR321203	Perform estimation and calculations

Code	CORE COMPETENCIES
AGR611361	Operate rice land preparation machinery and equipment
AGR611362	Operate rice crop establishment machinery and equipment
AGR611363	Operate rice crop care machinery and equipment
AGR611364	Operate rice harvesting and threshing machinery and equipment
AGR611365	Operate rice drying machinery and equipment
AGR611366	Operate rice mill machinery and equipment

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

- **Rice Land Preparation Machinery Operator (Hand Tractor, 4-Wheel Tractor)**
- **Rice Crop Establishment Machinery Operator (Manual Seeder, Motorized Seeder, Rice Transplanter)**
- **Rice Crop Care Machinery Operator (Irrigation Pump, Cultivator, Sprayer, Fertilizer Applicator)**
- **Rice Harvesting and Threshing Machinery Operator (Reaper, Stripper, Combine, Thresher)**
- **Rice Drying Machinery Operator (Batch, Continuous Flow Dryer)**
- **Rice Mill Machinery Operator (Single-Pass, Multi-Pass)**
- **Rice Machinery Operator**

A person/candidate is granted a National Certificate under this qualification once they achieve all the basic and common units plus any three (3) of the above core units of competency on rice machinery operation.

SECTION 2 COMPETENCY STANDARDS

These guidelines are set to provide the Technical Vocational Education and Training (TVET) providers with information and other important requirements to consider when designing training programs for **RICE MACHINERY OPERATIONS 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
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 to gather 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
2. Participate in workplace meetings and discussions	2.1 Team meetings are attended on time 2.2 Own opinions are clearly expressed and those of others are listened to without interruption 2.3 Meeting inputs are consistent with the meeting purpose and established ***protocols*** 2.4 ***Workplace interactions*** are conducted in a courteous manner 2.5 Questions about simple routine workplace procedures and maters concerning working conditions of employment are asked and responded to 2.6 Meetings outcomes are interpreted and implemented
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

RANGE OF VARIABLES

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

EVIDENCE GUIDE

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. Underpinning Knowledge and Attitudes	2.1. Effective communication 2.2. Different modes of communication 2.3. Written communication 2.4. Organizational policies 2.5. Communication procedures and systems 2.6. Technology relevant to the enterprise and the individual's work responsibilities
3. Underpinning Skills	3.1. Follow simple spoken language 3.2. Perform routine workplace duties following simple written notices 3.3. Participate in workplace meetings and discussions 3.4. Complete work related documents 3.5. Estimate, calculate and record routine workplace measures 3.6. Basic mathematical processes of addition, subtraction, division and multiplication 3.7. Ability to relate to people of social range in the workplace 3.8. Gather and provide information in response to workplace Requirements
4. Resource Implications	4.1. Fax machine 4.2. Telephone 4.3. Writing materials 4.4. Internet
5. Methods of Assessment	5.1. Direct Observation 5.2. Oral interview and written test
6. Context of Assessment	6.1. Competency may be assessed individually in the actual workplace or through accredited institution

UNIT OF COMPETENCY: WORK IN TEAM ENVIRONMENT

UNIT CODE : 500311106

UNIT DESCRIPTOR : This unit covers the skills, knowledge and attitudes to identify role and responsibility as a member of a team.

ELEMENT	PERFORMANCE CRITERIA ***Italicized*** terms are elaborated in the Range of Variables
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
2. Identify own role and responsibility within team	2.1. Individual role and responsibilities within the team environment are identified 2.2. Roles and responsibility of other team members are identified and recognized 2.3. Reporting relationships within team and external to team are identified
3. Work as a team member	3.1. Effective and appropriate forms of communications used and interactions undertaken with team members who contribute to known team activities and objectives 3.2. Effective and appropriate contributions made to complement team activities and objectives, based on individual skills and competencies and ***workplace context*** 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 judgement maybe demonstrated on the job, either individually or in a team environment
2. Sources of information	2.1. Standard operating and/or other workplace procedures 2.2. Job procedures 2.3. Machine/equipment manufacturer's specifications and instructions 2.4. Organizational or external personnel 2.5. Client/supplier instructions 2.6. Quality standards 2.7. OHS and environmental standards
3. Workplace context	3.1. Work procedures and practices 3.2. Conditions of work environments 3.3. Legislation and industrial agreements 3.4. Standard work practice including the storage, safe handling and disposal of chemicals 3.5. Safety, environmental, housekeeping and quality guidelines

EVIDENCE GUIDE

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. Underpinning Knowledge and Attitude	2.1. Communication process 2.2. Team structure 2.3. Team roles 2.4. Group planning and decision making
3. Underpinning Skills	3.1. Communicate appropriately, consistent with the culture of the workplace
4. Resource Implications	The following resources **MUST** be provided: 4.1. Access to relevant workplace or appropriately simulated environment where assessment can take place 4.2. Materials relevant to the proposed activity or tasks
5. Methods of Assessment	Competency may be assessed through: 5.1. Observation of the individual member in relation to the work activities of the group 5.2. Observation of simulation and or role play involving the participation of individual member to the attainment of organizational goal 5.3. Case studies and scenarios as a basis for discussion of issues and strategies in teamwork
6. Context for Assessment	6.1. Competency may be assessed in workplace or in a simulated workplace setting 6.2. Assessment shall be observed while task are being undertaken whether individually or in group

UNIT OF COMPETENCY: PRACTICE CAREER PROFESSIONALISM

UNIT CODE : 500311107

UNIT DESCRIPTOR : This unit covers the knowledge, skills and attitudes in promoting career growth and advancement.

ELEMENT	PERFORMANCE CRITERIA ***Italicized*** terms are elaborated in the Range of Variables
1. Integrate personal objectives with organizational goals	1.1 Personal growth and work plans are pursued towards improving the qualifications set for the profession 1.2 Intra- and interpersonal relationships is are maintained in the course of managing oneself based on performance evaluation 1.3 Commitment to the organization and its goal is demonstrated in the performance of duties
2. Set and meet work priorities	2.1 Competing demands are prioritized to achieve personal, team and organizational goals and objectives. 2.2 ***Resources*** are utilized efficiently and effectively to manage work priorities and commitments 2.3 Practices along economic use and maintenance of equipment and facilities are followed as per established procedures
3. Maintain professional growth and development	3.1 ***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

RANGE OF VARIABLES

VARIABLE	RANGE
1. Evaluation	1.1 Performance Appraisal 1.2 Psychological Profile 1.3 Aptitude Tests
2. Resources	2.1 Human 2.2 Financial 2.3 Technology 2.3.1 Hardware 2.3.2 Software
3. 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. Underpinning Knowledge	2.1 Work values and ethics (Code of Conduct, Code of Ethics, etc.) 2.2 Company policies 2.3 Company-operations, procedures and standards 2.4 Fundamental rights at work including gender sensitivity 2.5 Personal hygiene practices
3. Underpinning Skills	3.1 Appropriate practice of personal hygiene 3.2 Intra and Interpersonal skills 3.3 Communication skills
4. Resource Implications	The following resources **MUST** be provided: 4.1 Workplace or assessment location 4.2 Case studies/scenarios
5. Methods of Assessment	Competency may be assessed through: 5.1 Portfolio Assessment 5.2 Interview 5.3 Simulation/Role-plays 5.4 Observation 5.5 Third Party Reports 5.6 Exams and Tests
6. Context of Assessment	6.1 Competency may be assessed in the work place or in a simulated work place setting

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
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
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 2.3 OHS issues and/or concerns and identified safety hazards are reported to designated personnel in accordance with workplace requirements and relevant workplace OHS legislation

ELEMENT	PERFORMANCE CRITERIA ***Italicized*** terms are elaborated in the Range of Variables
3. Control hazards and risks	3.1 Occupational Health and Safety (OHS) 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 OHS policies 3.3 ***Personal protective equipment (PPE)*** is correctly used in accordance with organization OHS procedures and practices 3.4 Appropriate assistance is provided in the event of a workplace emergency in accordance with established organization protocol
4. Maintain OHS awareness	4.1 ***Emergency-related drills and trainings*** are participated in as per established organization guidelines and procedures 4.2 ***OHS personal records*** are completed and updated in accordance with workplace requirements

RANGE OF VARIABLES

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

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

EVIDENCE GUIDE

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 (OHS) procedures for controlling hazards/risks in workplace 1.6 Used Personal Protective Equipment (PPE) in accordance with company OHS procedures and practices 1.7 Completed and updated OHS personal records in accordance with workplace requirements
2. Underpinning Knowledge and Attitude	3.1.1. OHS procedures and practices and regulations 3.1.2. PPE types and uses 3.1.3. Personal hygiene practices 3.1.4. Hazards/risks identification and control 3.1.5. Threshold Limit Value -TLV 3.1.6. OHS indicators 3.1.7. Organization safety and health protocol 3.1.8. Safety consciousness 3.1.9. Health consciousness
3. Underpinning Skills	3.1 Practice of personal hygiene 3.2. Hazards/risks identification and control skills 3.3. Interpersonal skills 3.4 Communication skills
4. Resource Implications	The following resources must be provided: 4.1 Workplace or assessment location 4.2 OHS personal records 4.3 PPE 4.4 Health records
5. Methods of Assessment	Competency may be assessed through: 5.1 Portfolio Assessment 5.2 Interview 5.3 Case Study/Situation
6. Context for Assessment	6.1 Competency may be assessed in the work place or in a simulated work place setting

COMMON COMPETENCIES

UNIT OF COMPETENCY: APPLY SAFETY MEASURES IN FARM OPERATIONS

UNIT CODE : AGR321201

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**
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
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 to ensure a safework requirement 2.5 Hazards in the workplace are identified and reported in line with farm guidelines
3. Safekeep/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

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 Safekeep/cleaned tools, materials and outfit in designated facilities
2. Underpinning Knowledge and Attitudes	2.1 Safety Practices 2.1.1 Implementation of regulatory controls and policies relative to treatment of area and application of chemicals 2.1.2 Proper disposal of waste materials 2.2 Codes and Regulations 2.2.1 Compliance to health program of DOH and DENR 2.2.2 Hazard identification 2.2.3 Emergency procedures 2.3 Tools & Equipment: Uses and Specification 2.3.1 Masks, gloves, boots, overall coats for health protection 2.4 Maintenance 2.4.1 Regular check-up and repair of tools, materials and outfit before and after use
3. Underpinning Skills	3.1 Ability to recognize effective tools, materials and outfit 3.2 Ready skills required to read labels, manuals and other basic safety information
4. Method of Assessment	Competency in this unit must be assessed through: 4.1 Practical demonstration 4.2 Third Party Report
5. Resource Implications	5.1 Farm location 5.2 Tools, equipment and outfits appropriate in applying safety measures
6. Context of Assessment	6.1 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 : AGR321202

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**
1. Select and use farm tools	1.1 Identified appropriate farm tools 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 and equipment are safely used according to job requirements and manufacturers conditions
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 Followed safety procedures
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

RANGE OF VARIABLES

VARIABLE	RANGE
1. Farm equipment	1.1 Engine 1.2 Pumps 1.3 Generators 1.4 Sprayers
2. Farm tools	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	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 equipments according to manual specification 1.3 Performed preventive maintenance
2. Underpinning Knowledge and Attitudes	2.1 Safety Practices 2.1.1 Ideal good work habits to demonstrate to workers easy and safety standards during operation of farm equipment 2.2 Codes and Regulations 2.2.1 Environmental Compliance Certificate (ECG) 2.2.2 Effective work supervision in the operations of farm equipment 2.3 Tools & Equipment: Uses and Specification 2.3.1 Knowledge in calibrating and use of equipment 2.3.2 Safety keeping of equipments every after use 2.4 Maintenance 2.4.1 Regular upkeep of equipments 2.4.2 Preventive maintenance skills 2.5 Values 2.5.1 Positive outlook towards work 2.5.2 Possesses pre-emptive/anticipatory skills
3. Underpinning Skills	3.1 Ability to recognized defective farm equipment 3.2 Perform proper management practices of safety measures
4. Method of Assessment	Competency in this unit must be assessed through: 4.1 Direct observation 4.2 Practical demonstration 4.3 Third Party Report
5. Resource Implications	5.1 Service/operational manual of farm tools and equipment 5.2 Tools and equipment 5.3 Farm implements
6. Context of Assessment	6.1 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 : AGR321203

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**
2 Perform estimation	2.1 Job requirements are identified from written or oral communications 2.2 Quantities of materials and resources required to complete a work task are estimated 2.3 The time needed to complete a work activity is estimated 2.4 Accurate estimate for work completion are made 2.5 Estimate of materials and resources are reported to appropriate person
3 Perform basic workplace calculation	3.1 ***Calculations*** to be made are identified according to job requirements 3.2 Correct ***method of calculation*** identified 3.3 ***System and units of measurement*** to be followed are ascertained 3.4 Calculation needed to complete work tasks are performed using the four basic process of addition, division, multiplication and subtraction 3.5 Calculate whole fraction, percentage and mixed when are used to complete the instructions 3.6 Number computed in self checked and completed for alignment

RANGE OF VARIABLES

VARIABLE	RANGE
1. Calculations	1.1 Quantity of Seedlings 1.2 Amount of fertilizer
2. Method of calculation	2.1 Addition 2.2 Subtraction 2.3 Multiplication 2.4 Division 2.5 Ratio and proportion
3. System of measurement	3.1 English 3.2 Metric
4. Units of measurement	4.1 Area 4.2 Volume 4.3 Weight

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. Underpinning Knowledge and Attitudes	2.1 Mathematics 2.1.1 Basic mathematical operations 2.1.2 Percentage and ratios 2.1.3 Unit Conversion 2.2 Systems, Processes and Operations 2.2.1 Knowledge in different management practices and operational procedures 2.3 Values 2.3.1 Safety consciousness 2.3.2 Time consciousness and management 2.3.3 Cost consciousness 2.3.4 Precision
3. Underpinning Skills	3.1 Ability to perform basic calculation 3.2 Communicate effectively
4. Method of Assessment	Competency in this unit must be assessed through: 4.1 Practical demonstration 4.2 Written examination
5. Resource Implications	5.1 Relevant tools and equipment for basic calculation 5.2 Recommended data
6. Context of Assessment	6.1 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: OPERATE RICE LAND PREPARATION MACHINERY AND EQUIPMENT

UNIT CODE : AGR611361

UNIT DESCRIPTOR : This unit covers the knowledge, skills and attitudes required to operate rice land preparation machinery and equipment.

ELEMENT	PERFORMANCE CRITERIA ***Italicized terms*** are elaborated in the Range of Variables
1. Assess field/area	1.1 Field is inspected and prepared as per established practices 1.2 ***Obstructions*** are removed as per established practices
2. Prepare machine for land preparation	2.1 ***Machines*** are checked and adjusted in accordance with manufacturer operator's manual 2.2 ***Tools and materials*** are prepared as work requirements 2.3 ***Implements*** are checked and adjusted in accordance with manufacturer's instruction manual
3. Operate land preparation machinery and monitor performance	3.1 ***Personal Protective Equipment*** are selected and worn as per work requirement 3.2 Machine is operated according to standard practices 3.3 ***Abnormal conditions*** are identified and corrected in accordance with the standard operating procedures 3.4 ***Performances*** are assessed according to set standards or client's specification 3.5 Malfunctions are recorded and referred to appropriate personnel for action 3.6 Machine is shutdown according to standard practices
4. Perform post-operation activities	4.1 Waste generated is managed according to environmental regulations 4.2 Machine and engine are cleaned, checked and stored as per established practices 4.3 Work area is cleaned and maintained according to OHS and enterprise requirements. 4.4 ***Records of information*** are prepared in appropriate format 4.5 ***Basic preventive maintenance*** is performed according to manufacturer's instructions and/or standard practices

RANGE OF VARIABLES

VARIABLE	RANGE
1. Obstructions	May include but are not limited to: 1.1 Tall grasses 1.2 Stones 1.3 Foreign materials (e.g. used bottles/cans, plastic bags)
1. Machines	1.1 Hand tractor/power tiller 1.2 4-Wheel tractor
2. Implements	May include but are not limited to: 2.1 Moldboard/disc plow 2.2 Harrow 2.3 Trailer (for transport of implements of hand tractor) 2.4 Rotovator 2.5 Leveller
3. Tools and Materials	May include but are not limited to: 3.1 Wrenches 3.2 Hammer 3.3 Fuel/Oil 3.4 Pressurized water sprayer* 3.5 Grease gun 3.6 Broomstick and dustpan* 3.7 Rags* *For cleaning purposes
4. PPE	4.1 Dust Mask (for dry land preparation)
5. Abnormal Condition	May include but is not limited to: 5.1 Erratic engine speed 5.2 Belt slippage 5.3 Unplowed field/area
6. Output quality and quantity	May include but is not limited to: 6.1 Well plowed field 6.2 Effectively tilled soil 6.3 Acceptable field efficiency

VARIABLE	RANGE
7. Records of information	8.1 Machine failure 8.2 Fuel consumption 8.3 Area tilled 8.4 Hours of operation 8.5 Manpower requirements 8.6 Date of operation
8. Basic preventive maintenance	May include but are not limited to: 8.1 Dismantling and assembling procedures 8.2 Safety and pre-start checks 8.3 Testing 8.4 Tightening 8.5 Minor adjustments and repairs (e.g. belt tension/ pulley alignment, engine speed) 8.6 Routine servicing procedures (e.g. cleaning, lubricating, priming pumps, cleaning filters, checks of cooling systems, fuel, grease and oil, battery levels)

EVIDENCE GUIDE

1. Critical aspects of competency	**Assessment requires evidence that the candidate:** 1.1 Inspected field/area 1.2 Prepared hand tractor and/or 4-wheel tractor 1.3 Used proper field pattern for optimum efficiency 1.4 Operated and shut down machines 1.5 Operated machine at optimum efficiency 1.6 Cleaned and stored machine and engine 1.7 Cleaned and maintained work area 1.8 Prepared record of operation 1.9 Observed OHS procedures 1.9 Performed basic preventive maintenance activities
2. Underpinning knowledge and attitudes	2.1 Compatibility of engine and hand tractor 2.2 Knowledge on occupational health and safety procedure 2.3 5S and 3R applications 2.4 Nomenclature of engine and machines 2.5 Implements adjustment 2.6 Defensive-driving 2.7 Dedication to work and resourcefulness 2.8 Patience, perseverance and environmentally conscious 2.9 Sense of quality and open-mindedness
3. Underpinning Skills	3.1 Using relevant farm tools and machines 3.2 Preparing report 3.3 Appropriate/proper wearing of PPEs 3.4 Performing standard operating procedure of equipment 3.5 Performing safety practices and safe operation 3.6 Applying defensive-driving 3.7 Demonstrating safe and environmentally responsible workplace practices 3.8 Reading and interpreting manual/manufacturer's specifications, work and maintenance plans 3.9 Using appropriate fuel and lubrication requirements 3.10 Computation and communication skills
4. Resource Implications	The following resources MUST be provided: 4.1 Field for plowing 4.2 Machines and implements 4.3 Manufacturer's manual 4.4 Supplies and materials
5. Method of Assessment	Competency may be assessed through: 5.1 Direct observation/Demonstration with Oral Questioning 5.2 Portfolio
6. Context for Assessment	6.1 Competency must be assessed on actual job or accredited assessment center 6.2 Competency assessment must be undertaken in accordance with endorsed TESDA assessment guidelines

UNIT OF COMPETENCY: OPERATE RICE CROP ESTABLISHMENT MACHINERY AND EQUIPMENT

UNIT CODE : AGR611362

UNIT DESCRIPTOR : This unit covers the knowledge, skills and attitudes required to operate rice crop establishment machinery and equipment.

ELEMENT	PERFORMANCE CRITERIA ***Italicized terms*** are elaborated in the Range of Variables
1. Prepare crop establishment machinery	1.1 Field and seeds/seedlings are assessed for readiness in planting or transplanting 1.2 ***Machines*** are checked and adjusted for operation in accordance with standard practices 1.3 ***Tools and materials*** are prepared as per work requirements (seedling preparation) 1.4 ***Accessories*** are checked and adjusted in accordance with operating manual
4 Operate machines and monitor performance	4.1 ***Personal Protective Equipment*** **(PPE)** are selected and worn as per work requirements 4.2 Machine is operated according to standard farm practices 4.3 ***Abnormal conditions*** are identified and corrected in accordance with the standard operating procedures 4.4 ***Performances*** are assessed according to set standards and client's specification 4.5 Malfunctions are recorded and referred for appropriate adjustment by proper personnel 4.6 Machine is shutdown according to standard farm practices
5 Perform post-operation activities	5.1 ***Wastes*** are managed according to environmental regulations 5.2 Machine and engine are cleaned, checked and stored as per established practices 5.3 Work are is cleaned and maintained according to OHS and enterprise requirements 5.4 ***Records of information*** are prepared in appropriate format 3.5 ***Basic preventive maintenance*** is performed according to manufacturer's instructions and/or standard practices

RANGE OF VARIABLES

VARIABLE	RANGE
1. Machines	1.1 Rice Seeder 1.2 Rice Transplanter
2. Accessories	May include but are not limited to: 2.1 Leveler 2.2 Guide stick 2.3 Floater 2.4 Furrow opener and closer
3. Tools and Materials	May include but are not limited to: 3.1 Seeds (dry/pre-germinated) 3.2 Sacks (for seeds and waste) 3.3 Measuring can 3.4 Seedlings 3.5 Tray 3.6 Wrenches 3.7 Hammer 3.8 Fuel/Oil 3.9 Pressurized water sprayer* 3.10 Grease gun 3.11 Broomstick and dustpan* 3.12 Rags* *For cleaning purposes
4. PPE	4.1 Boots 4.2 Dust Mask 4.3 Gloves 4.4 Ear muff 4.5 Protective cap
5. Abnormal Condition	May include but is not limited to: 5.1 Erratic engine speed 5.2 Belt slippage 5.3 Uneven seeds distribution (seeding rate) 5.4 Not uniform transplanted seedlings (direction, number of seedlings/hill) 5.5 Missing hill
6. Performances	May include but are not limited to: 6.1 Even seeding rate 6.2 Straight row planting 6.3 Uniform transplanted seedlings 6.4 Acceptable field efficiency
7. Wastes	May include but are not limited to: 7.1 Excess seeds after operation 7.1 Sacks 7.3 Remaining seedlings after operation

VARIABLE	RANGE
8. Records of information	8.1 Machine failure 8.2 Fuel consumption 8.3 Area planted 8.4 Hours of operation 8.5 Manpower requirements 8.6 Date of operation
8. Basic preventive maintenance	May include but are not limited to: 8.1 Dismantling and assembling procedures 8.2 Safety and pre-start checks 8.3 Testing 8.4 Tightening 8.5 Minor adjustments and repairs (e.g. belt tension/pulley alignment, engine speed) 8.6 Routine servicing procedures (e.g. cleaning, lubricating, priming pumps, cleaning filters, checks of cooling systems, fuel, grease and oil, battery levels)

EVIDENCE GUIDE

1. Critical aspects of competency	**Assessment requires evidence that the candidate:** 1.1 Prepared rice seeder and transplanter 1.2 Operated and shut down machines 1.3 Operated machine at optimum efficiency 1.4 Cleaned and stored machine and engine 1.5 Cleaned and maintained work area 1.6 Prepared record of operation 1.7 Observed OHS procedures 1.8 Performed basic routine preventive maintenance activities
2. Underpinning knowledge and attitudes	2.1 Adaptability of rice seeder and transplanter 2.2 Knowledge on occupational health and safety procedure 2.3 5S and 3R applications 2.4 Nomenclature of engine and machines 2.5 Accessories or components adjustment 2.6 Dedication to work and resourcefulness 2.7 Patience, perseverance and environmentally conscious 2.8 Sense of quality and open-mindedness
3. Underpinning Skills	3.1 Using relevant farm tools and machines 3.2 Preparing report 3.3 Appropriate/proper wearing of PPEs 3.4 Performing standard operating procedure of equipment 3.5 Performing safety practices and safe operation 3.6 Demonstrating safe and environmentally responsible workplace practices 3.7 Reading and interpreting manual/manufacturer's specifications, work and maintenance plans 3.8 Using appropriate fuel and lubrication requirement 3.9 Computation and communication skills
4. Resource Implications	The following resources MUST be provided: 4.1 Well prepared/leveled field for planting 4.2 Well prepared seeds/seedlings 4.3 Machines and implements 4.4 Manufacturer's manual 4.5 Supplies and materials
5. Method of Assessment	Competency may be assessed through: 5.1 Direct observation/Demonstration with Oral Questioning 5.2 Portfolio
6. Context for Assessment	6.1 Competency must be assessed on actual job or accredited assessment center 6.2 Competency assessment must be undertaken in accordance with endorsed TESDA assessment guidelines

UNIT OF COMPETENCY: OPERATE RICE CROP CARE MACHINERY AND EQUIPMENT

UNIT CODE : AGR611363

UNIT DESCRIPTOR : This unit covers the knowledge, skills and attitudes required to operate rice crop care machinery and equipment.

ELEMENT	PERFORMANCE CRITERIA ***Italicized terms*** are elaborated in the Range of Variables
1. Prepare crop care machinery	1.1 ***Machines*** are checked and adjusted for operation in accordance with standard farm practices 1.2 ***Accessories*** are checked, cleaned and installed as per operating manual 1.3. Engine is check for operation in accordance with the standard practices 1.4 ***Resources*** needed are available to meet the work requirements 1.5 ***Tools and materials*** are prepared based on work requirements
2. Operate machines and monitor performance	2.1 Personal protective equipment are selected and worn as per work requirement 2.2 Machine is operated according to standard practices 2.3 ***Abnormal conditions*** are identified and corrected in accordance with standard operating procedures 2.4 ***Performance*** are assessed according to set standards or client's specification. 2.5 Malfunctions are recorded and referred for appropriate action by the proper personnel 2.6 Machine is shutdown according to standard practices
3. Perform post-operation activities	3.1 ***Wastes*** are managed according to environmental regulations 3.2 Machines and engine are cleaned and stored as per established practices 3.3 Work are is cleaned and maintained according to OHS and enterprise requirements 3.4 ***Records of information*** are prepared in appropriate format 3.5 ***Basic preventive maintenance*** is performed according to manufacturer's instructions and/or standard practices

RANGE OF VARIABLES

VARIABLE	RANGE
1. Machines	1.1 Irrigation pump 1.2 Sprayer/Duster 1.3 Weeder/Cultivator
2. Accessories	May include but are not limited to: 2.1 Pressure gauge 2.2 Pipe connector 2.3 Lance 2.4 Nozzle 2.5 Hose
3. Resources	3.1 Water source 3.2 Required field
4. Tools and materials	May include but is not limited to: 4.1 Wrenches 4.2 Teflon tape 4.3 Fertilizer 4.4 Fuel/oil 4.5 Chemicals 4.6 Measuring cup 4.7 Pressurized water sprayer* 4.8 Grease gun 4.9 Rags* 4.10 Broomstick and dustpan* *For cleaning purposes
5. Abnormal condition	May include but is not limited to: 5.1 Erratic engine speed 5.2 Belt slippage 5.3 No water discharged 5.4 Pesticide leaks
6. Performance	May include but is not limited to: 6.1 Discharge capacity 6.3 Efficiency
7. Wastes	May include but are not limited to: 7.1 Pesticide bottle 7.2 Used Teflon seals 7.3 Used fertilizer container/sacks

VARIABLE	RANGE
8. Records	8.1 Date of operation 8.2 Fuel Consumption 8.3 Hours of operation 8.4 Machine Failure 8.5 Area operated 8.6 Manpower requirements
9. Basic preventive maintenance	May include but are not limited to: 9.1 Dismantling and assembling procedures 9.2 Safety and pre-start checks 9.3 Testing 9.4 Tightening 9.5 Minor adjustments and repairs (e.g. belt tension/ pulley alignment, engine speed) 9.6 Routine servicing procedures (e.g. cleaning, lubricating, priming pumps, cleaning filters, checks of cooling systems, fuel, grease and oil, battery levels)

EVIDENCE GUIDE

1. Critical Aspects of competency	**Assessment requires evidence that the candidate:** 1.1 Prepared crop care machinery 1.2 Operated and shutdown machines 1.3 Operated machine at optimum efficiency 1.3 Cleaned and stored machine and equipment 1.4 Cleaned and maintained work area 1.5 Prepared record of operation 1.6 Observed OHS procedures 1.7 Performed basic routine preventive maintenance activities
2. Underpinning Knowledge	2.1 Compatibility of primemover and machines 2.2 Knowledge on occupational health and safety Procedures 2.3 5S and 3R applications 2.4 Nomenclature of engine and machines 2.5 Dedication to work and resourcefulness 2.6 Patience, perseverance and environmentally conscious 2.7 Sense of quality and open mindedness
3. Underpinning Skills	3.1 Using relevant farm tools and equipment 3.2 Preparing report 3.3 Appropriate/proper wearing of PPE's 3.4 Performing standard operating procedure of equipment 3.6 Performing safety practices and safe operation 3.7 Demonstrating safe and environmentally responsible workplace practices 3.8 Reading and interpreting manual/manufacturer's specifications, work and maintenance plans 3.9 Using appropriate fuel and lubrication requirement 3.10 Computation and communication skills
4. Resource Implications	The following resources MUST be provided: 4.1 Machines and Engine 4.2 Water source 4.3 Required field 4.4 Operator's manual
5. Method of Assessment	Competency may be assessed through: 5.1 Observation / Demonstration with oral questioning 5.2 Portfolio
6. Context of Assessment	6.1 Competency must be assessed on actual job accredited assessment center / farm 6.2 Competency assessment must be undertaken in accordance with the endorsed TESDA assessment guidelines

UNIT OF COMPETENCY: OPERATE RICE HARVESTING AND THRESHING MACHINERY AND EQUIPMENT

UNIT CODE : AGR611364

UNIT DESCRIPTOR : This unit covers the knowledge, skills and attitudes required to operate rice harvesting and threshing machinery and equipment.

ELEMENT	PERFORMANCE CRITERIA ***Italicized terms*** are elaborated in the range of variables
1. Prepare harvesting and threshing machinery	1.1 ***Machines*** are checked/adjusted for operation in accordance with standard practices 1.2 ***Tools and materials*** are prepared as per work requirements 1.3 ***Accessories*** are checked and adjusted according to manufacturer operator's manual 1.4 Matured grain plants are inspected as per established practices
2. Operate machines and monitor performance	2.1 ***Personal Protective Equipment (PPE)*** are selected and worn as per work requirements 2.2 Machine is operated according with standard farm practices 2.3 ***Abnormal conditions*** are identified and corrected in accordance with standard operating procedures 2.4 ***Performances*** are assessed according to set standards and client's specifications 2.5 Malfunctions is recorded for appropriate adjustment by proper personnel 9.7 Machine is shutdown according to standard practices
3. Perform post-operation activities	3.1 ***Wastes*** are managed according to environmental regulations 3.2 Machine and engine are cleaned and stored as per established practices 3.3 Work area is cleaned and maintained according to OHS and enterprise requirements 3.4 ***Records* of information** are prepared in appropriate format 3.5 ***Basic preventive maintenance*** is performed according to manufacturer's instructions and/or standard practices

RANGE OF VIABLES

VARIABLE	RANGE
1. Machines	1.1 Reaper 1.2 Stripper 1.3 Combine 1.4 Thresher 1.5 Grain cleaner
2. Accessories	May include but are not limited to: 2.1 Pneumatic tire 2.2 Cage wheel 2.3 Draw bar/towing bar 2.4 Collecting box
3. Tools and Materials	May include but are not limited to: 3.1 Wrenches 3.2 Hammer 3.3 Screw drivers 3.4 Fuel/Oil 3.5 Sacks (for palay and wastes) 3.6 Bag closer or sewing kit 3.7 Collecting net 3.8 Air compressor 3.9 Pressurized water sprayer 3.10 Broomstick and dustpan 3.11 Grease gun 3.12 Rags
4. PPE	4.1 Boots 4.2 Dust Mask 4.3 Gloves 4.4 Ear Muff 4.5 Protective cap 4.6 Long sleeve shirt
5. Abnormal conditions	May include but are not limited to: 5.1 Erratic engine speed 5.2 Belt slippage 5.3 Unharvested grains 5.4 Unthreshed grains 5.5 Unstripped grains 5.6 Unclean grains 5.7 Milled grains 5.9 Excessive vibration 5.10 Excessive grain 5.11 Clogging

VARIABLE	RANGE
6. Performances	May include but is not limited to: 6.1 Capacity of machines 6.2 Effectively cleaned grains 6.3 Effectively harvested field 6.4 Effectively threshed grains 6.5 Efficiency (field, threshing, etc.)
7. Wastes/losses	7.1 Unharvested grains 7.2 Unthreshed grains 7.3 Rice straw 7.4 Grain impurities
8. Records	8.1 Machine failure 8.2 Fuel consumption 8.3 Area harvested 8.4 Hours of operation 8.5 Manpower requirements 8.6 Volume of grain processed
9. Basic preventive maintenance	May include but are not limited to: 9.1 Dismantling and assembling procedures 9.2 Safety and pre-start checks 9.3 Testing 9.4 Tightening 9.5 Minor adjustments and repairs (e.g. belt tension/ pulley alignment, engine speed) 9.6 Routine servicing procedures (e.g. cleaning, lubricating, priming pumps, cleaning filters, checks of cooling systems, fuel, grease and oil, battery levels)

EVIDENCE GUIDE

1. Critical Aspect of competency	**Assessment requires evidence that the candidate:** 1.1 Prepared harvesting and threshing machine 1.2 Operated and shut down machines 1.3 Operated machine at optimum efficiency 1.4 Cleaned and stored machine and equipment 1.5 Cleaned and maintained work area 1.6 Prepared record of operations 1.7 Observed OHS procedures 1.8 Performed basic routine preventive maintenance
2. Underpinning Knowledge and Attitudes	2.1 Compatibility of machines and engines 2.2 Knowledge on Occupational Health and Safety Procedures 2.3 5S and 3R applications 2.4 Nomenclature of engine and machines 2.5 Components adjustments 2.6 Dedication to work and resourcefulness 2.7 Patience, perseverance and environmentally conscious 2.8 Sense of quality and open mindedness 2.9 Preventive Maintenance
3. Underpinning Skills	3.1 Using relevant farm tools and equipment 3.2 Preparing report 3.3 Appropriate/proper wearing of PPEs 3.4 Performing standard operating procedure of equipment 3.5 Performing safety practices and safe operation 3.6 Demonstrating safe and environmentally responsible workplace practices 3.7 Reading and interpreting manual/manufacturer's specifications, work and maintenance plans 3.8 Using appropriate fuel and lubrication requirement 3.9 Basic computation and communication skills 3.10 Troubleshooting
4. Resource Implications	The following resources MUST be provided**:** 4.1 Machines and engine 4.2 Rice field for harvesting 4.3 Rice materials for threshing/stripping 4.4 Rice for cleaning 4.5 Manufacturer's manual 4.6 Supplies and materials
5. Method of Assessment	Competency may be assessed through**:** 5.1 Direct observation / demonstration with oral questioning 5.2 Portfolio
6. Context of Assessment	6.1 Competency must be assessed on actual job or accredited assessment center 6.2 Competency assessment must be undertaken in accordance with the endorsed TESDA assessment guidelines

UNIT OF COMPETENCY: OPERATE DRYING MACHINERY AND EQUIPMENT

UNIT CODE : AGR611365

UNIT DESCRIPTOR : This unit covers the knowledge, skills and attitudes required in operating rice drying machinery and equipment.

ELEMENT	PERFORMANCE CRITERIA ***Italicized terms*** are elaborated in the Range of Variables
1. Prepare rice drying machinery	1.1 ***Machines*** are checked/adjusted in accordance with established standards and manufacturer's manual 1.2 ***Accessories*** are prepared and checked as per work requirement and established standards and manufacturer's manual 1.3 ***Tools and materials*** are prepared as per work requirements
2. Operate machines and monitor performance	2.1 ***Personal Protective Equipment (PPE)***are selected and worn as per work requirement 2.2 Machine is operated according to established standards and manufacturer's manual 2.3 ***Abnormal conditions*** are identified and corrected in accordance with the standard operating procedures 2.4 ***Performances*** are assessed according to set standards and clients' specifications 9.6 Malfunctions are recorded for appropriate adjustment by proper personnel 2.6 Machine is shutdown according to established standards and manufacturer's manual
3. Perform post-operation activities	3.1 ***Wastes*** are managed according to environmental regulations 3.2 Machine and engine are cleaned and stored as per established standards and manufacturer's manual 3.3 Work area is cleaned and maintained according to OHS and enterprise requirements 3.4 ***Records of information*** are prepared in appropriate format 3.5 ***Basic preventive maintenance*** is performed according to manufacturer's instructions and/or standard practices

RANGE OF VARIABLES

VARIABLE	RANGE
1. Machines	1.1 Batch-type dryer 1.2 Continuous flow dryer 1.3 Flash dryer
2. Accessories	May include but are not limited to: 2.1 Moisture meter 2.2 Thermometer 2.3 Tachometer 2.4 Velometer 2.5 Mamometer 2.6 Hygrometer
2. Tools and Materials	May include but are not limited to: 2.1 Wrenches 2.2 Shovel 2.3 Fresh palay 2.4 Oil/fuel 2.5 Sacks (for grains and waste) 2.6 Plastic twine 2.7 Sack needle 2.8 Vacuum cleaner 2.9 Broomstick and dustpan 2.10 Rags 2.11 Grease gun
3. PPE	3.1 Dust mask 3.2 Gloves 3.3 Ear muff 3.4 Long sleeve shirt 3.5 Protective cap
4. Abnormal conditions	May include but are not limited to: 4.1 Erratic engine speed 4.2 Belt spillage 4.3 Prolonged drying time 4.4 High moisture gradiant 4.5 Low airflow/low drying air temperature 4.6 Clogging
5. Performances	May include but are not limited to: 5.1 Moisture reduction rate 5.2 Drying capacity 5.3 Loading capacity 5.4. Product quality 5.5 Drying rate 5.5 Spillage 5.6 Heating system efficiency 5.7 Drying efficiency 5.8 Moisture gradiant

VARIABLE	RANGE
6. Wastes	6.1 Ashes 6.2 Impurities 6.3 Used plastic twine and sacks
7. Records of information	7.1 Machine failure 7.2 Fuel consumption 7.3 Drying time 7.4 Hours of operation 7.5 Manpower requirements 7.6 Quality and quantity 7.7 Drying air temperature 7.8 Initial and final moisture of rains
8. Basic preventive maintenance	May include but are not limited to: 8.1 Dismantling and assembling procedures 8.2 Safety and pre-start checks 8.3 Testing 8.4 Tightening 8.5 Minor adjustments and repairs (e.g. belt tension/ pulley alignment, engine speed) 8.6 Routine servicing procedures (e.g. cleaning, lubricating, priming pumps, cleaning filters, checks of cooling systems, fuel, grease and oil, battery levels)

EVIDENCE GUIDE

1. Critical aspects of competency	**Assessment requires evidence that the candidate:** 1.1 Prepared dryer machinery 1.2 Operated and shut down machine 1.3 Operated machine at optimum efficiency 1.3 Cleaned and stored machine and engine 1.4 Cleaned and maintained work area 1.5 Prepared record of operation 1.6 Observed OHS procedures 1.8 Performed basic routine preventive maintenance
2. Underpinning Knowledge and Attitudes	2.1 Compatibility of engine and dryer machinery 2.2 Knowledge on occupational health and safety procedure 2.3 5S and 3R applications 2.4 Nomenclature of engine and dryer machinery 2.5 Performance of the machine 2.6 Quality assessment output 2.7 Dedication to work and resourcefulness 2.8 Patience, perseverance and environmentally conscious 2.9 Sense of quality and open-mindedness
3. Underpinning Skills	3.1 Using relevant tools and dryer equipment 3.2 Operating and maintaining the machine 3.3 Reading test instruments such as moisture meter, tachometer, etc. 3.4 Preparing report 3.5 Appropriate/proper wearing of PPEs 3.6 Performing standard operating procedures of equipment 3.7 Performing safety practices and safe operation 3.8 Demonstrating safe and environmentally responsible workplace practices 3.9 Reading and interpreting manual/manufacturer's specifications, work and maintenance plans 3.10 Using appropriate fuel and lubrication requirement 3.11 Basic computation and communication skills
4. Resource Implications	The following resources MUST be provided: 4.1 Dryer machinery 4.2 Manufacturer's manual 4.3 Supplies and materials (rice samples, etc)
5. Method of Assessment	Competency may be assessed through: 5.1 Direct observation/Demonstration with Oral Questioning 5.2 Portfolio
6. Context for Assessment	6.1 Competency must be assessed on actual job or accredited assessment center 6.2 Competency assessment must be undertaken in accordance with endorsed TESDA assessment guidelines

UNIT OF COMPETENCY : OPERATE RICE MILL MACHINERY AND EQUIPMENT

UNIT CODE : AGR611366

UNIT DESCRIPTOR : This unit covers the knowledge, attitudes and skills required to operate rice milling machinery and equipment.

ELEMENT	PERFORMANCE CRITERIA ***Italicized terms*** are elaborated in the Range of Variables
1. Prepare rice milling machine	1.1 ***Machines*** are checked and adjusted in accordance with established standards and manufacturer's manual 1.2 ***Accessories and components*** are checked and adjusted according to established standards and manufacturer's manual 1.3 ***Tools and materials*** are prepared as work requirements
2. Operate machine and monitor performance	2.1 ***Personal Protective Equipment*** are selected and worn as per work requirements 2.2 Machine is operated according to established standards and manufacturer's manual 2.3 ***Abnormal conditions*** are identified and corrected in accordance with standard operating procedures 2.4 ***Performances*** are assessed according to set standards and client's specification 2.7 Malfunctions are recorded for appropriate adjustment by concerned personnel 2.6 Machine is shutdown according to established standards and manufacturer's manual
3. Perform post-operation activities	3.1 ***Wastes*** generated from operation and cleaning procedures is reused or recycled according to environmental regulations 3.2 Machines and engine are cleaned and stored as per established standards and manufacturer's manual 3.3 Work are is cleaned and maintained according to OHS and enterprise requirements 3.4 ***Records of information*** are prepared in appropriate format 3.5 ***Basic preventive maintenance*** is performed according to manufacturer's instructions and/or standard practices

RANGE OF VARIABLES

VARIABLE	RANGE
1. Machines	1.1 Single-pass rubber roll 1.2 Multi-pass rubber roll 1.3 Steelhuller engelberg mill 1.4 Centrifugal rice mill
2. Accessories and components	May include but is not limited to: 2.1 Cleaner 2.2 Destoner 2.3 Polisher 2.4 Whitener 2.5 Separator 2.6 Grader 2.7 Bagger 2.8 Engines 2.9 Motor 2.10 Huller 2.11. Vacuum cleaner 2.12. Broomstick and dustpan 2.13. Sacks (for wastes) 2.14. Grease gun 2.15. Rags 2.16 Weighing scale 2.17 Dust collection system 2.18 Rice hull/by-products compartment
3. Tools and Materials	May include but is not limited to: 3.1 Basic toolkit (wrench,hammer,screw driver, etc.) 3.2 Fuel,oil 3.3 Palay samples
4. PPE	4.1 Dust mask 4.2 Ear plug 4.3 Protective cap 4.4 Appropriate clothing
5. Abnormal Condition	5.1 Erratic engine/motor speed 5.2 Belt slippage 5.3 Clogging 5.4 High losses 5.5 Excessive broken/return paddy

VARIABLE	RANGE
6. Performances	May include but is not limited to: 6.1 Milling recovery 6.2 Milling degree 6.3 Percent head rice index 6.4 Hulling efficiency 6.5 Milled rice quality
7. Wastes	7.1 Impurities 7.2 Biomass waste
8. Records of information	8.1 Grain quantity & quality 8.2 Machine Failure 8.3 Fuel/electricity consumption 8.4 Hours of operation 8.5 Labor requirement
9. Basic preventive maintenance	May include but are not limited to: 9.1 Dismantling and assembling procedures 9.2 Safety and pre-start checks 9.3 Testing 9.4 Tightening 9.5 Minor adjustments and repairs (e.g. belt tension/ pulley alignment, engine speed) 9.6 Routine servicing procedures (e.g. cleaning, lubricating, priming pumps, cleaning filters, checks of cooling systems, fuel, grease and oil, battery levels)

EVIDENCE GUIDE

1. Critical Aspects of competency	**Assessment requires evidence that the candidate :** 1.1 Prepared rice mill machine 1.2 Operated rice mill machine 1.3 Operated machine at optimum efficiency 1.4 Cleaned and stored machine and equipment 1.5 Cleaned and maintained work area 1.6 Prepared records of operation 1.7 Observed OHS practices and procedures 1.8 Performed basic routine preventive maintenance activities
2. Underpinning Knowledge and Attitudes	2.1 Knowledge on milling system process flow 2.2 Knowledge on Occupational Health and Safety Procedures 2.3 5S and 3R applications 2.4 Nomenclature of machine and motor/engine 2.5 Adjustments on mill machine 2.6 Quality assessment of mill product 2.7 Performance of the milling system 2.8 Dedication to work and resourcefulness 2.9 Patience, perseverance and environmental Consciousness 2.10 Sense of quality and open mindedness
3. Underpinning Skills	3.1 Using relevant tools and equipment 3.2 Operating and maintaining milling system 3.3 Preparing report 3.4 Proper wearing of PPEs 3.5 Performing standards operating procedures of equipment 3.6 Performing safety practices and safe operation 3.7 Demonstrating safe and environmentally responsible workplace practices 3.8 Reading and interpreting manual/manufacturer's specifications, work and maintenance plans 3.9 Using appropriate fuel and lubrication requirement 3.10 Computation and communication skills
4. Resource Implications	The following resources MUST be provided: 4.1 Properly dried palay 4.2 Milling machine 4.3 Power / Engine 4.4 Manufacturer's manual 4.5 Supplies and materials
5. Method of Assessment	Competency may be assessed through: 5.1 Direct observation/demonstration with oral questioning 5.2 Portfolio
6. Context of Assessment	6.1 Competency must be assessed on actual job or accredited assessment center 6.2 Competency assessment must be undertaken in accordance with the endorsed TESDA assessment guidelines

SECTION 3 TRAINING STANDARDS

These guidelines are set to provide the Technical and Vocational Education and Training (TVET) providers with information and other important requirements to consider when designing training programs for **RICE MACHINERY OPERATIONS NC II.**

3.1 CURRICULUM DESIGN

Course Title: RICE MACHINERY OPERATIONS NC Level: NC II

Nominal Training Duration: 232 Hours

Course Description:

This course is designed to enhance the knowledge, desirable attitudes and skills of rice machine operator in accordance with industry standards. It covers the operation and basic maintenance of rice machinery for ***land preparation, crop establishment, crop care, harvesting and threshing, drying and milling*****.**

BASIC COMPETENCIES
(18 Hours)

Unit of Competency	Learning Outcomes	Methodology	Assessment Approach
1. Participate in workplace communication	1.1 Obtain and convey workplace information. 1.2 Complete relevant work related documents. 1.3 Participate in workplace meeting and discussion.	Group discussion Interaction	• Demonstration • Observation • Interviews/ questioning
2. Work in a team environment	2.1 Describe and identify team role and responsibility in a team. 2.2 Describe work as a team member.	Discussion Interaction	• Demonstration • Observation • Interviews/ questioning
3. Practice career professionalism	3.1 Integrate personal objectives with organizational goals. 3.2 Set and meet work priorities. 3.3 Maintain professional growth and development.	Discussion Interaction	• Demonstration • Observation • Interviews/ questioning
4. Practice occupational health and safety	4.1 Evaluate hazard and risks 4.2 Control hazards and risks 4.3 Maintain occupational health and safety awareness	Discussion Plant tour Symposium	• Observation • Interview

COMMON COMPETENCIES
(14 Hours)

Unit of Competency	Learning Outcomes	Methodology	Assessment Approach
1. Apply safety measures in farm operations	1.1. Determine areas of concern for safety measures 1.2. Apply appropriate safety measures 1.3. Safekeep/maintain/ dispose tools, materials and outfit.	Self-paced/modular Lecture/Discussion Interaction Practical Demonstration Visit/tour	Oral/Written Interviews Direct Observation Practical Demonstration
2. Use farm tools and equipment	2.1. Prepare and use farm tools 2.2. Prepare and operate farm equipment 2.3. Perform preventive maintenance procedures/practices	Self-paced/modular Lecture/Discussion Interaction Practical Demonstration Visit/tour	Oral/Written Interviews Direct Observation Practical Demonstration
3. Perform estimation and basic calculation	3.1. Perform estimation 3.2. Perform basic workplace calculation 3.3. Apply corrective measures as necessary	Self-paced/modular Lecture/Discussion Interaction Practical Exercise	Oral/Written examination Practical exercise

CORE COMPETENCIES
(200 Hours)

Unit of Competency	Learning Outcomes	Methodology	Assessment Approach
1. Operate rice land preparation machinery and equipment	1.1 Inspect field/area 1.2 Prepare land machinery 1.3 Operate machinery 1.4 Monitor performance 1.5 Perform post-operation activities	• Lecture • Discussion • Practical Demonstration	• Interview • Written examination • Demonstration of practical skills • Direct observation
2. Operate rice crop establishment machinery and equipment	2.1 Prepare crop establishment machinery 2.2 Operate machinery 2.3 Monitor performance 2.4 Perform post-operation activities	• Lecture • Discussion • Practical Demonstration	• Interview • Written examination • Demonstration of practical skills • Direct observation
3. Operate rice crop care machinery and equipment	3.1 Prepare crop care machinery 3.2 Operate machinery 3.3 Monitor performance 3.4 Perform post-operation activities	• Lecture • Discussion • Practical Demonstration	• Interview • Written examination • Demonstration of practical skills • Direct observation
4. Operate rice harvesting and threshing machinery and equipment	4.1 Prepare harvesting and threshing machinery 4.2 Operate machinery 4.3 Monitor performance 4.4 Perform post-operation activities	• Lecture • Discussion • Practical Demonstration	• Interview • Written examination • Demonstration of practical skills • Direct observation
5. Operate rice drying machinery and equipment	5.1 Prepare drying machinery 5.2 Operate machinery 5.3 Monitor performance 5.4 Perform post-operation activities	• Lecture • Discussion • Practical Demonstration	• Interview • Written examination • Demonstration of practical skills • Direct observation

Unit of Competency	Learning Outcomes	Methodology	Assessment Approach
6. Operate rice mill machinery and equipment	6.1 Prepare milling machine 6.2 Operate machinery 6.3 Monitor performance 6.4 Perform post-operation activities	• Lecture • Discussion • Practical Demonstration	• Interview • Written examination • Demonstration of practical skills • Direct observation

3.2 TRAINING DELIVERY

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

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

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

- The dualized mode of training delivery is preferred and recommended. Thus programs would contain both in-school and in-industry training or fieldwork components. Details can be referred to the Dual Training System (DTS) Implementing Rules and Regulations.
- Modular/self-paced learning is a competency-based training modality wherein the trainee is allowed to progress at his own pace. The trainer facilitates the training delivery
- Peer teaching/mentoring is a training modality wherein fast learners are given the opportunity to assist the slow learners.
- Supervised industry training or on-the-job training is an approach in training designed to enhance the knowledge and skills of the trainee through actual experience in the workplace to acquire specific competencies prescribed in the training regulations.
- Distance learning is a formal education process in which majority of the instruction occurs when the students and instructor are not in the same place. Distance learning may employ correspondence study, or audio, video or computer technologies.
- Project-Based Instruction is an authentic instructional model or strategy in which students plan, implement and evaluate projects that have real world applications.

3.3 TRAINEE ENTRY REQUIREMENTS

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

- Able to read and write;
- With good moral character;
- Ability to communicate, both oral and written; and
- Physically fit and mentally healthy as certified by a Public Health Officer

NOTE: These lists does not include specific institutional requirements such as educational attainment and others that may be required from the trainees by the training school delivering the TVET Program.

3.4 LIST OF TOOLS, EQUIPMENT AND MATERIALS

RICE MACHINERY OPERATION NC II

Recommended list of tools, equipment and materials for the training of 25 trainees for Rice Machinery Operation NC II

QTY	TOOLS	QTY	EQUIPMENT	QTY	MATERIALS
5	Sets of Wrench	2	Hand Tractor	20 ltr	Fuel and Oil
	- 36" Pipe		(Lowland &	5	Stop Watch
	Wrench		Upland) w/		**PPE:**
	- 18" Pipe		Implements*	25	Protective Cap
	Wrench	2	Hydro/Turtle Tiller	25	Boots
	- 12" Adjustable	2	Rota Tiller	25	Dust Mask
	Wrench	1	4-Wheel Tractor	25	Hand Gloves
5	Hammer		W/ Implements*	25	Earmuff
5	Vice Grip	2	Reaper	25	Raincoat
5	Plier	2	Stripper	25	Long Sleeve Shirt
5	Screw Driver	1	Combine		
5	Ballpeen		Harvester	5	Steel Tape Measure
	Hammer	2	Rice Thresher	25	Pail
5	Locking Plier	5	Knapsack Sprayer	25	Empty Can, 20 ltrs.
5	Grease Gun	2	Centrifugal Pump	25	Sack, 50kg
2	Screw driver	5	Cultivator	5	Collecting Net
1	Combination Wrench	5	Fertilizer Applicator	3	Teflon Tape
1 pc	Adjustable Wrench	5	Weeder	1 qt	Grease
1 pc	Tachometer	2	Pressure Gauge	50kg	Fertilizer
1 pc	Shovel	2	Weighing Scale	1	Suction Hose
1 pc	Wheel Barrow	1	Computer	1 set	Required set of pipe
1 pc	Allen Wrench	1	LCD		and connectors
		1	Screen Projector	1	Pesticide Measuring
		2	Tachometer		Cup
		1	Moisture Meter	1 btl	Chemical
1 pc	Moisture Meter				
1 pc	Temperature Gauge				

QTY	TOOLS	QTY	EQUIPMENT	QTY	MATERIALS
	Screwdriver, philip, flat	2	Thermometer	100 kgs	Seedlings
	Pipe Wrench	2	Transplanter		
	Portable grinder	2	Seeder	40kgs	Seeds
	Portable drill	1	Diesel engine 12.5hp	25	Envelope
	Arc electric welding	1	Furnace	3rms	Bond Paper
	Oxy-acetylene outfit	1	Blower	1	White Board
		1	Rice mill (Single-pass,	5	White Board
			Multi-pass)		Pen Maker
		1	Mechanical dryer	1	Pad Paper
			(Batch-type, flash,		Diesel Fuel
			Continuous)	1	Graduated Cylinder
				1 pair	Engine Base
					Rice Hull
				1 Pack	Matches
				1 Pair	Engine Base
				9 pcs.	Bolt w/ nut 1/2x2
				1 pc	Pulley
				2 pcs.	Belt
				1 pc	Needle
					Twine
					Rice samples/seeds for milling/drying

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

3.5 TRAINING FACILITIES

RICE MACHINERY OPERATION NC II

Based on a class size of 25 students/trainees

SPACE REQUIREMENT	SIZE IN METERS	AREA IN SQ. METERS	TOTAL AREA IN SQ. METERS
• Student/Trainee Working Space	2.00 x 2.00 per student/trainee	4.00 per student	100.00
• Lecture Room	7.00 x 5.00	35.00	35.00
• Learning Resource Center	3.00 x 5.00	15.00	15.00
• Facilities/Equipment/ Circulation Area	-	-	----
• Farm Machinery Shed	10 x 20	200	200
• Field Area	-	10,000	10,000*
TOTAL AREA			**10,350**

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

3.6 TRAINER'S QUALIFICATIONS FOR AGRICULTURE SECTOR

RICE MACHINERY OPERATION NC II

TRAINER QUALIFICATION (TQ II)

- Must be a holder of BS Agricultural Engineering or its equivalent qualification
- Must have undergone training on Training Methodology II (TM II)
- *Must be computer literate
- Must be physically and mentally fit
- *Must have at least 2 years job/industry experience
- Must be a civil service eligible (for government position or appropriate professional license issued by the Professional Regulatory Commission)

**Optional*. Only when required by the hiring institution.

Reference: TESDA Board Resolution No. 2004 03

3.7. INSTITUTIONAL ASSESSMENT

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

SECTION 4 ASSESSMENT AND CERTIFICATION ARRANGEMENTS

4.1. To attain the National Qualification of **Rice Machinery Operation NC II**, the candidate must demonstrate competence in the operation of at least three (3) types of rice machinery as listed below. Successful candidates shall be awarded a National Certificate signed by the TESDA Director General.

4.2 Individuals aspiring to be awarded the qualification of **Rice Machinery Operation NC II** must acquire Certificate of Competency (COCs) in any three (3) of the following core units of the Qualification. Candidates may apply for assessment in any accredited assessment center.

4.2.1 Operating Rice Land Preparation Machinery and Equipment

4.2.2 Operating Rice Crop Establishment Machinery and Equipment

4.2.3 Operating Rice Crop Care Machinery and Equipment

4.2.4 Operating Rice Harvesting and Threshing Machinery and Equipment

4.2.5 Operating Rice Drying Machinery and Equipment

4.2.6 Operating Rice Mill Machinery and Equipment

Successful candidates shall be awarded Certificates of Competency (COCs).

4.3 Upon accumulation and submission of all COCs required for the qualification, an individual shall be issued the corresponding National Certificate.

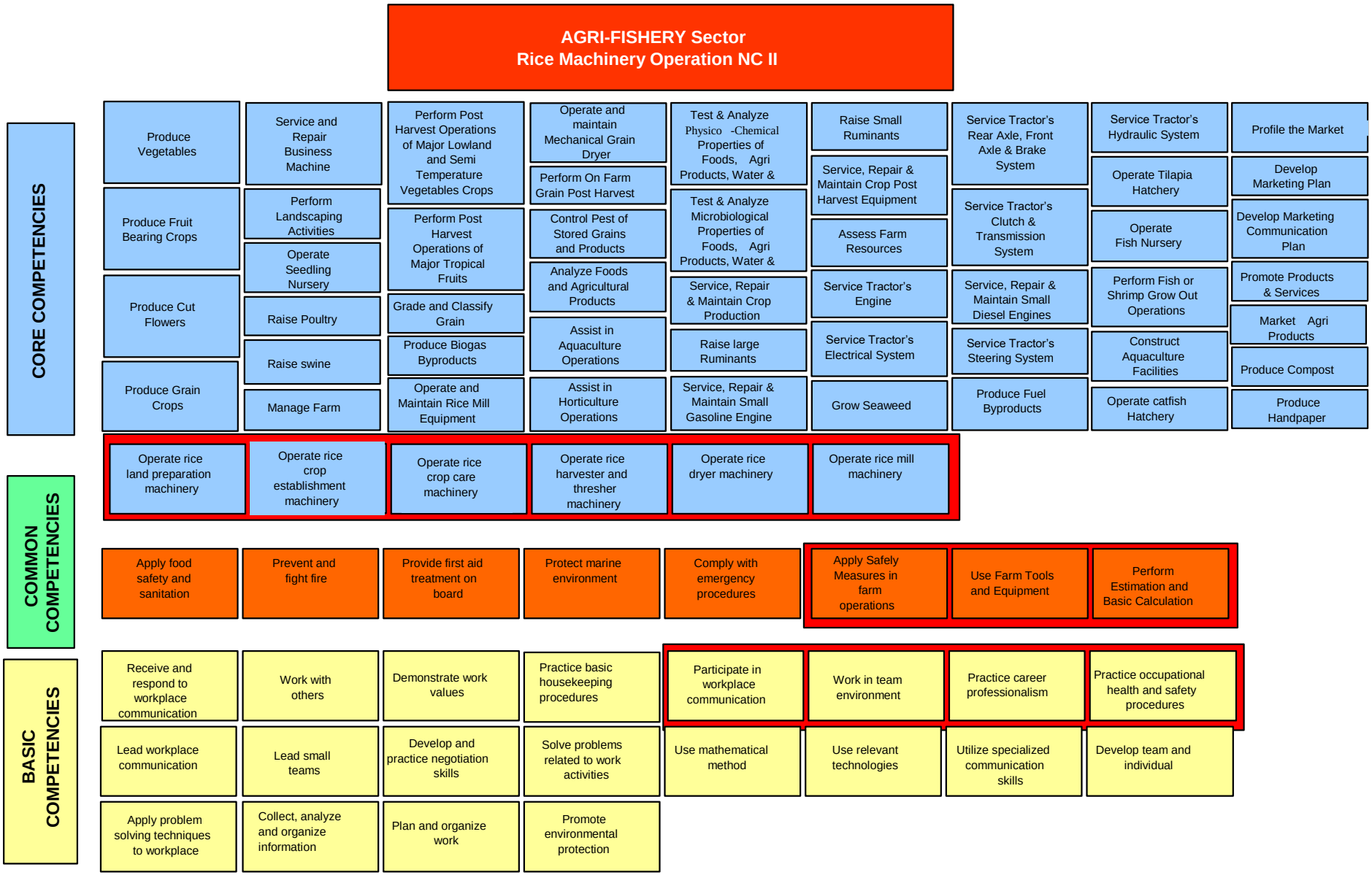
4.4 Assessment shall focus on the core units of competency. The basic and common units shall be integrated or assessed concurrently with the core units.

4.1 The following are qualified to apply for assessment and certification:

4.5.1 Graduates of formal, non-formal and informal including enterprise-based training programs

4.5.2 Experienced Workers (wage employed or self-employed)

4.6 The guidelines on assessment and certification are discussed in detail in the Procedures Manual on Assessment and Certification and Guidelines on the Implementation of the Philippine TVET Qualification and Certification System (PTQCS).


AGRI-FISHERY Sector
Rice Machinery Operation NC II
CORE COMPETENCIES
Produce Vegetables
Produce Fruit Bearing Crops
Produce Cut Flowers
Produce Grain Crops
Service and Repair Business Machine
Perform Landscaping Activities
Operate Seedling Nursery
Raise Poultry
Raise swine
Manage Farm
Perform Post Harvest Operations of Major Lowland and Semi Temperature Vegetables Crops
Perform Post Harvest Operations of Major Tropical Fruits
Grade and Classify Grain
Produce Biogas Byproducts
Operate and Maintain Rice Mill Equipment
Operate and maintain Mechanical Grain Dryer
Perform On Farm Grain Post Harvest
Control Pest of Stored Grains and Products
Analyze Foods and Agricultural Products
Assist in Aquaculture Operations
Assist in Horticulture Operations
Test & Analyze Physico -Chemical Properties of Foods, Agri Products, Water &
Test & Analyze Microbiological Properties of Foods, Agri Products, Water &
Service, Repair & Maintain Crop Production
Raise large Ruminants
Service, Repair & Maintain Small Gasoline Engine
Raise Small Ruminants
Service, Repair & Maintain Crop Post Harvest Equipment
Assess Farm Resources
Service Tractor's Engine
Service Tractor's Electrical System
Grow Seaweed
Service Tractor's Rear Axle, Front Axle & Brake System
Service Tractor's Clutch & Transmission System
Service, Repair & Maintain Small Diesel Engines
Service Tractor's Steering System
Produce Fuel Byproducts
Service Tractor's Hydraulic System
Operate Tilapia Hatchery
Operate Fish Nursery
Perform Fish or Shrimp Grow Out Operations
Construct Aquaculture Facilities
Operate catfish Hatchery
Profile the Market
Develop Marketing Plan
Develop Marketing Communication Plan
Promote Products & Services
Market Agri Products
Produce Compost
Produce Handpaper
Operate rice land preparation machinery
Operate rice crop establishment machinery
Operate rice crop care machinery
Operate rice harvester and thresher machinery
Operate rice dryer machinery
Operate rice mill machinery
COMMON COMPETENCIES
Apply food safety and sanitation
Prevent and fight fire
Provide first aid treatment on board
Protect marine environment
Comply with emergency procedures
Apply Safely Measures in farm operations
Use Farm Tools and Equipment
Perform Estimation and Basic Calculation
BASIC COMPETENCIES
Receive and respond to workplace communication
Work with others
Demonstrate work values
Practice basic housekeeping procedures
Participate in workplace communication
Work in team environment
Practice career professionalism
Practice occupational health and safety procedures
Lead workplace communication
Lead small teams
Develop and practice negotiation skills
Solve problems related to work activities
Use mathematical method
Use relevant technologies
Utilize specialized communication skills
Develop team and individual
Apply problem solving techniques to workplace
Collect, analyze and organize information
Plan and organize work
Promote environmental protection

GLOSSARY OF TERMS

Engine – mechanical device that converts heat energy produced by combustion of fuel into mechanical energy

4-Wheel Tractor – wheeled power source having two axles, design to carry work by pulling or propel various agricultural machines and implements. They are classified according to horsepower rating

Hand Tractor – machine with power ranging 3 – 16 hp used for tilling and other form of farm task such as cultivating, planting, irrigating and harvesting. These are also known as power tiller, two- wheel tractor or walking tractor

Land Preparation Machinery – machines designed to carry out farm work either by pulling or propel agricultural implements for the purpose of preparing the soil for seedbed

Crop Establishment Machinery – machinery device whether self-propelled or pulled/hitch to a wheeled vehicle, used to place seeds or plant into the soil for propagation and production of crops

Crop Care Machinery – machinery device whether self-propelled or hitch to a wheeled vehicle, to provide plant condition free from weeds, pest diseases, including provision to supply for water and nutrients

Dryer Machinery – machinery device powered either by electric motor or internal combustion engine used to lower down or remove available water from the grains through evaporation by the application of heated air

Rice Mill Machinery – machinery device to process conversion of paddy into rice which involves the removal of husk and bran to produce milled rice

Moldboard Plow – an implement consisting of a warped surface equipped with a cutting edge which crumbles and inverts the soil

Tillage Implements –implement pulled either by a four or two- wheel tractor used to break and loosen the soil to a desired depth. It includes the mouldboard, disc, chisel, subsoiler and middlebreakers

Field Pattern – an established and efficient plowing pattern, the objective is to minimize the amount of non-working turns and travel distance in a turn

Harvesting – the process of gathering the useful portion of the crop from the field. In the case of rice, it refers to the gathering of the matured panicles preparatory to threshing

Combine Harvesting – harvesting and threshing are done by a single machine called combine

Stripping – the method of removing or gathering the grains from the panicles without cutting or uprooting the plants

Threshing – involves the detachment of the seeds from the panicles either by rubbing, impact and stripping

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