THE UNITED REPUBLIC OF TANZANIA MINISTRY OF EDUCATION, SCIENCE AND TECHNOLOGY



FIELD CROP PRODUCTION SYLLABUS FOR ORDINARY SECONDARY EDUCATION VOCATIONAL STREAM FORM I–IV

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Abbreviations and Acronyms

AIDS	Acquired Immunodeficiency Syndrome
BVM	Bag-Valve-Mask
CA	Continuous Assessment
CBET	Competence Based Education and Training
FYM	Farm Yard Manure
GPS	Global Positioning System
HIV	Human Immunodeficiency Syndrome
IDM	Integrated Disease Management
IPM	Integrated Pest Management
IWM	Integrated Weed Management
NECTA	National Examinations Council of Tanzania
TIE	Tanzania Institute of Education
VETA	Vocational Education and Training Authority

Definition of Key Terms

Assessment: The process of collecting evidence and making judgments on whether competency has been achieved, or whether specific skills and knowledge have been achieved that will lead to the attainment of competency.

Circumstantial knowledge: Detailed knowledge, which allows the decision-making in different circumstances and cross cutting issues.

Competence: The ability to use knowledge, understanding, practical and thinking skills to perform effectively to the workplace standards required in employment.

Element: A sub-unit (step), which reflects learning sequence with the aim of achieving broad learning objectives of a unit.

Performance criteria: indicate the expected end results or outcome in form of evaluative statements.

Standard: A set of statements, which if proved true under working conditions, means that an individual is meeting an expected level and type of performance.

Underpinning Knowledge: This is essential knowledge needed in order to demonstrate competences that are associated in performing a given task.

Unit: A statement of broad learning objectives, which prescribe the requirements of a standard in form of practical skills, knowledge and appropriate attitudes.

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For and on behalf of:

Vocational Education and Training Authority

CPA. Anthony M. Kasore **Director General**

1.0. Introduction

Field Crop Production is one of the occupations taught in the Ordinary Secondary Education Vocational Stream. Learning Field Crop Production is essential because Tanzania is rich in land and has a variety of naturally growing and planted crop species. These resources can be utilized to support the growth of the country's economy. Field Crop Production occupation deals with producing, processing and marketing of field crops. Examples of the field crops are Cereal crops (maize, rice, sorghum, wheat, barley and millet), Root and tuber crops (cassava, sweet potatoes, yams and round potatoes), Leguminous crops (beans, soya beans, cowpeas, pigeon peas, green grams, bambara nuts and lentil), Oil crops (sesame, sunflower, groundnuts, coconut, cashew nut and oil palm), fibre crops (sisal and cotton), Beverage crops (coffee, tea and cocoa) and other crops such as sugarcane, pyrethrum and tobacco. By teaching Field Crop Production, students will develop practical skills that enable them to select appropriate site, produce, process and market field crops of high quality. This fosters local industries development, encourages export market and reduces dependency on imported crop products. In return, this will promote economic development, create jobs, promote environmental sustainability, and preserve cultural heritage.

Upon completion of the program, students will possess both theoretical and practical knowledge of site selection, seed selection and planting materials preparation, seedbed and field establishment, soil and water management, soil fertility management, crop pests and diseases management while adhering to safety regulations. Therefore, by undertaking this occupation, the students will be able to engage in different agricultural occupations. For example, one can become a farm land surveyor to assist in the identification and opening of suitable new farms, or a producer and supplier of high-quality seeds and planting materials to farmers involved in field and another crops production. A student can also provide crop pest management services to the farmers or be engaged in the installation of irrigation systems, and marketing of agricultural produce. Additionally, a student can provide farmers with soil, water conservation and water harvesting services.

Therefore, A graduate in this occupation can become self-employed or employed in the government sectors (ministries/departments, training institutions, research institutions, agricultural agencies and projects) and private sectors such as Non-government organizations (NGOs).

The Field Crop Production Syllabus is designed to guide the teaching and learning of field crop production at Ordinary Secondary Education Form I–IV Vocational Stream in the United Republic of Tanzania. The syllabus interprets the competences a student needs to develop

while learning crop production. It contains valuable information that will enable teachers to effectively plan their teaching process and help students develop the intended competences.

2.0. Main Objectives of Education in Tanzania

The main objectives of education in Tanzania are to enable every Tanzanian to:

- (a) Develop and improve his or her personality so that he or she values himself or herself and develops self-confidence;
- (b) Respect the culture, traditions, norms and customs of Tanzania; cultural differences; dignity; human rights; attitudes and inclusive actions;
- (c) Advance knowledge and apply science and technology, creativity, critical thinking, innovation, cooperation, communication and positive attitudes for his or her own development and the sustainable development of the nation and the world at large;
- (d) Understand and protect national values, including dignity, patriotism, integrity, unity, transparency, honesty, accountability and the national language;
- (e) develop life and work-related skills to increase efficiency in everyday life;
- (f) Develop a habit of loving and valuing work to increase productivity and efficiency in production and service provision;
- (g) Identify and consider cross-cutting issues, including the health and well-being of the society, gender equality, as well as the management and sustainable conservation of the environment; and
- (h) Develop national and international cooperation, peace and justice per the Constitution of the United Republic of Tanzania and international conventions.

3.0. General Competencies for Ordinary Secondary Education Vocational Stream

The general competences for Ordinary Secondary Education, Form 1–IV, Vocational Education stream are to:

- (a) Apply the knowledge, skills and attitudes the student developed in the primary school stage to increase his/her understanding of technical skills;
- (b) Apply technical skills in designing, inventing and making various things to cope with life and solve challenges in society;
- (c) Appreciate citizenship and national virtues;
- (d) Use language skills;

- (e) Demonstrate self-confidence in learning in various fields, including science and technology, technical knowledge and technical skills;
- (f) Apply technical knowledge and skills in designing, discovering and making various things to solve challenges in society, including cross cutting issues;
- (g) Appreciate procedures and safety rules in using technical tools correctly; and
- (h) Apply the technical knowledge and skills acquired to develop oneself with vocational and technical education and join the workforce.

4.0. General Competences of the Occupation

Upon completion of this occupation, students are expected to have ability to:

- (a) Maintaining safety of farm workshop and surroundings;
- (b) Performing preventive Maintenance of farm tools, machines and equipment;
- (c) Preparing land for field crops production;
- (d) Sowing and planting field crops;
- (e) Applying fertilizers;
- (f) Controlling pests;
- (g) Managing water for field crops;
- (h) Harvesting field crops;
- (i) Performing post-harvest activities;
- (j) Managing farm activities;
- (k) Processing field crops;
- (l) Packing and marketing processed field crops; and
- (m) Managing farm environment;

5.0. Main and Specific Competences

The main and specific competences to be developed are presented in Table 1

Table 1: Main and Specific Competences for Form I–IV

Main competences	Specific competences
1.0 Maintaining safety in workshop	1.1 Maintaining workshop safety
and surrounding	1.2 Handling accidents and incidents
	1.3 Handling fire accidents
	1.4 Performing First Aid
2.0 Preparing land for field crops	2.1 Conducting investigation for a new farm
production	2.2 Conducting soil analysis

Main competences	Specific competences
	2.3 Performing land clearance
	2.4 Preforming land tillage
3.0 Applying fertilizers	3.1 Preparing organic fertilizer
	3.2 Applying fertilizers to the plant
4.0 Sowing and planting field	4.1 Selecting quality seeds
crops	4.2 Selecting quality planting materials
	4.3 Performing seed sowing
	4.4 Performing planting of crop materials
5.0 Controlling crop pests	5.1 Controlling weeds
	5.2 Controlling diseases
	5.3 Controlling insect pests
	5.4 Controlling vertebrate pests
6.0 Managing water for field crops	6.1 Harvesting water
	6.2 Performing irrigation
7.0 Harvesting field crops	7.1 Determining maturity indices of
	various field crops
	7.2 Estimating crop yield
	7.3 Harvesting different field crops
8.0 Performing post-harvest	8.1 Handling harvested field crops
activities	8.2 Performing Post- harvest treatments
	8.3 Storing field crops
9.0 Managing farm activities	9.1 Maintaining various farm records
	9.2 Preparing farm project proposal
	9.3 Managing farm business
10.0 Processing field crops	10.1 Processing leguminous crops
	10.2 Processing cereal crops
	10.3 Processing root and tuber crops
	10.4 Processing oil crops
	10.5 Processing fibre crops
	10.6 Processing beverage crops
11.0 Packaging and marketing	11.1 Conducting market surveys
processed field crops	11.2 Preparing packaging material
	11.3 Conducting storage of packed

Main competences	Specific competences
	products
12.0 Managing farm environment	12.1 Performing environmental
	conservation in farm area
	12.2 Performing waste management
	12.3 Managing soil erosion

6.0. The Roles of Teachers, Students and Parents in Teaching and Learning

Good relationship between a teacher, student and parent, or guardian is fundamental to ensuring successful learning. This section outlines the roles of each participant in facilitating effective teaching and learning of Field Crop Production.

6.1. The Teacher

The teacher is expected to:

- (a) Help the student to learn and develop the intended competences in Field Crop Production
- (b) Use teaching and learning approaches that will allow students with different needs and abilities to:
 - (i) Develop the competences needed in the 21st Century; and
 - (ii) Actively participate in the teaching and learning process.
 - Use student-centered instructional strategies that make the student a centre of learning which allow them to think, reflect and search for information from various sources;
 - (d) Create a friendly teaching and learning environment;
 - (e) Prepare and improvise teaching and learning resources;
 - (f) Conduct formative assessment regularly by using tools and methods which assess theory and practice;
 - (g) Treat all the students according to their learning needs and abilities;
 - (h) Protect the student from the risky environment while he or she is at school;
 - (i) Keep track of the student's daily progress;
 - (j) Identify individual student's needs and provide the proper intervention;
 - (k) Involve parents/guardians and the society at large in the student's learning process; and
 - (l) Integrate cross-cutting issues and ICT in the teaching and learning process.

6.2. The Student

The student is expected to:

- (a) Develop the intended competences by participating actively in various learning activities inside and outside the classroom; and
- (b) Participate in the search for knowledge from various sources, including textbooks, reference books and other publications in online libraries.

6.3. The Parent/Guardian

The parent/guardian is expected to:

- (a) Monitor the child's academic progress;
- (b) Where possible, provide a child with the needed academic support;
- (c) Provide a child with a safe and friendly home environment which is conducive for learning;
- (d) Keep track of a child's progress in behaviour;
- (e) Provide the child with any necessary materials required in the learning process; and
- (f) Instill in a child a sense of commitment and positive value towards education and work.

7.0. Teaching and Learning Methods

The teaching and learning methods are instrumental in developing student's competences. This Syllabus suggests teaching and learning methods for each activity, which includes but not limited to brainstorming, demonstration, practical/hands-on activities, observations, group works, discussions, presentations, field visits, research, and project works. However, a teacher is advised to plan and use other appropriate methods based on the environment or context. All the teaching and learning methods should be integrated with student's everyday lives. The focus is expected to be on practical application and developing cognitive, affective, and psychomotor skills through learner-centred methods. Vocational teachers act as facilitators, incorporating both school-based teaching and project work supervision.

8.0. Teaching and Learning Resources

The process of teaching and learning requires different resources. In that regard, both teacher and students should work together to collect or improvise alternative resources available in the school and home environment when needed. Teachers and students are expected to constantly seek for information from various sources to effectively facilitate the teaching and learning process. The list of approved textbooks and reference books shall be provided by the Tanzania Institute of Education (TIE). Assessment is important in teaching and learning of Field Crop Production occupation. It is divided into formative and summative assessments. Formative assessment informs both the teacher and students on the progress of teaching and learning, and in making decisions on improving the teaching and learning process. Teachers are therefore, expected to apply a wide range of formative assessment methods which include but not limited to demonstration, discussions, presentations, oral questions, experiments, observations, practical assignments and projects.

Summative assessment, on the other hand, will focus on determining student's achievement of learning. Teachers are expected to use a variety of summative assessments including Form Two National Assessment, terminal examination, annual examination, mock examination and project. The scores obtained from these assessments will be used as Continuous Assessment (CA). Therefore, the continuous assessments shall contribute 60% and the National Form IV Examination shall be 40% as indicated in Table 2.

Project Work

Project work is a carefully planned and clearly defined task or problem that a student undertakes, either alone or in a group, to enhance and apply the skills and knowledge gained in the classroom, workshop, kitchen, or laboratory. It is based on the principles of "Learning by Doing" and "Learning by Living." In this context, the implementation of Project Work in secondary schools' vocational streams is essential. Projects in the vocational stream should be conducted in the core subject (occupation). To ensure its success, the supervision and assessment of student project work must be consistent with the established guidelines provided by National Examinations Council of Tanzania (NECTA).

Assessment Category	Weight (%)	National
		Examination
Form Two National Assessment (FTNA)	6.0	
Form Three Terminal Examination	5.0	
Form Three Anual Examination	5.0	
Form Four Mock Examination	7.0	
Project	7.0	40.0
Form Two Practical	10.0	
Form Three Practical	10.0	

Table 2: Contribution of Continuous Assessment and National Examination in the final score

Assessment Category	Weight (%)	National
		Examination
Form Four Practical	10.0	
Total	60.0	

10.0. Number of Periods

The Field Crop Production Syllabus for Ordinary Secondary Education Vocational Stream Form I-IV provides time estimates for teaching and learning each specific competence. The estimates consider the complexity of the specific competences and the learning activities. Eight (08) periods of 40 minutes each have been allocated per week, whereby two (02) periods will be used for theory and 6 for practical sessions which may require double periods (e.g., 80). Double periods will allow sufficient time for hands-on activities.

11.0. Teaching and Learning Contents

The contents of the Syllabus are organized into a matrix with seven (07) columns which are main competences, specific competences, learning activities, suggested teaching and learning methods, assessment criteria which is divided into (process assessment, products/service assessment and underpinning knowledge), suggested teaching and learning resources and number of periods as presented in Table 3 to 6.

Form One

Table 3: Detailed contents for Form One

Module Title	Unit Title			Ass	sessment Criteria		Training	Number
(Main Competences)	(Specific Competence s)	Elements (Learning Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Servic e Assessment	Knowledge Assessment	Requirements/ Suggested Resources	of Periods per Unit
1.0 Maintaining Safety of Farm Workshop and Surroundings	1.1 Maintaining Farm Workshop Safety	(a) Maintainin g farm workshop safety rules	Think-ink-pair share: Guide the students to list workshop safety rules Brainstorm: Guide the students to define farm workshop safety rules and explain the importance of maintaining farm workshop safety rules Practical work: Guide the students on how to handle tools, materials, equipment and machines safely How to observe safety rules Activity: Organize the students in manageable groups to maintaining farm workshop safety rules at the farm area in school premises or at another relevant place	 The student should be able to: Select working tools, equipment and safety gear Maintain cleanliness of workshop area Maintain label of tools and equipment List workshop rules and regulations Identify possible accidents and incidents Observe safety precaution Store tools and equipment properly Clean tools and equipment appropriately 	Farm workshop safety rules maintained as per stipulated rules and regulations	Knowledge Evidence: Detailed knowledge of: Method used: The student should be able to explain how to maintain farm workshop safety rules Principles: The student should explain the principles of: Maintaining farm workshop safety rules Maintaining general cleanliness Theories: The student should explain: Importance of observing safety rules and	The following tools, equipment, materials and safety gear are to be available: • First aid kit • Firefighting equipment • Overall • Gum boots • Eye, ear, nose and mouth masks • Gloves • Dust bin • Broom-soft and hard • Cobweb brush • Mop • Safety rules • Safety signs	109

Module Title	Unit Title			Assessment Criteria			Training	Number
(Main Competences)	(Specific Competence s)	(Specific Competence s) Elements (Learning Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Servic e Assessment	Knowledge Assessment	Requirements/ Suggested Resources	of Periods per Unit
						 regulations General concepts of occupational health and safety Importance of using safety gears Important safety tools and equipment in a farm workshop Classes of fire Different firefighting methods Important accessories in first aid kit Circumstantial knowledge: Detailed knowledge about: workshop safety signs and rules 		
		(b) Maintainin	Brainstorm:	The student should be	Farm	Knowledge	The following	
		g farm	Guide the students to list	able to: Maintain algorithmass of	workshop	Evidence:	tools, equipment,	
		worksnop	and identify tools,	form workshop area	working	Detalled	materials and	
		working	for maintaining form	Tarm Workshop area.	environment	Knowledge of:	salety gear are to	
		environme	for maintaining farm	Maintain label of tools	safety	Method used: The	be available:	

Module Title	Unit Title			Ass	sessment Criteria		Training	Number
(Main Competences)	(Specific Competence s)	Elements (Learning Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Servic e Assessment	Knowledge Assessment	Requirements/ Suggested Resources	of Periods per Unit
		nt.	workshop environment Practical work: Guide the students on how to use and handle tools, materials, Equipment and machines to maintaining workshop working environment Activity: Organize the students in manageable groups to maintaining farm workshop working environment at the farm workshop in school premises or at another relevant place	and equipment Maintain labels of the farm workshop working environment List workshop rules and regulations Maintain lighting system Maintain air circulation	maintained as per stipulated rules and regulations	 student should be able to explain how to maintain farm workshop working environment Principles: The student should explain the principles of: Maintaining farm workshop working environment Maintaining general cleanliness Theories: The student should explain: Importance of observing safety rules and regulations General concepts of occupational health and safety Importance of using safety gears 	 First aid kit Firefighting equipment Overall Gum boots Eye, ear, nose and mouth masks Gloves Dust bin Dust pan Broom-soft and hard Cobweb brush Mop Safety rules Safety signs Other cleaning tools and equipment 	

Module Title	Unit Title		Assessment Criteria			Training	Number	
(Main Competences)	(Specific Competence s)	Elements (Learning Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Servic e Assessment	Knowledge Assessment	Requirements/ Suggested Resources	of Periods per Unit
						 Important safety tools and equipment in a farm workshop Important accessories in first aid kit Circumstantial knowledge: Detailed knowledge about: workshop safety signs and rules 		
		(c) Maintainin g personal safety	Brainstorm: Guide the students to list and identify tools, materials and devices for maintaining personal safety Practical work: Guide the students on how to use / wear and handle tools for maintaining personal safety Activity: Organize the students in manageable groups to maintaining personal safety at the farm workshop in school	The student should be able to: Select working tools, materials and safety gears Maintain cleanliness of workshop area Maintain label of tools and equipment List workshop rules and regulations Identify possible accidents and incidents	Personal safety maintained as per stipulated rules and regulations	Knowledge Evidence. Detailed knowledge of: Method used: The student should be able to explain how to maintain personal safety at the farm workshop area Principles: The student should explain the principles of: Maintaining personal safety Maintaining general	The following tools, equipment, materials and safety gear are to be available: • First aid kit • Firefighting equipment • Overall • Gum boots • Eye, ear and nose masks • Gloves	

Module Title	Unit Title			Ass	sessment Criteria		Training	Number
(Main Competences)	(Specific Competence s)	Elements (Learning Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Servic e Assessment	Knowledge Assessment	Requirements/ Suggested Resources	of Periods per Unit
			premises or another relevant area			cleanliness Theories: The student should explain: • Importance of observing safety rules and regulations • General concepts of occupational health and safety • Importance of using safety gears • Important safety tools and equipment in a farm workshop • Important accessories in first aid kit Circumstantial knowledge: Detailed knowledge about: workshop safety signs and rules		
1	1.2	(a) Handling	Brainstorm:	i ne student should be	Farm	Knowledge	The following	109

Module Title	Unit Title			Ass	sessment Criteria		Training	Number
(Main Competences)	(Specific Competence s)	Elements (Learning Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Servic e Assessment	Knowledge Assessment	Requirements/ Suggested Resources	of Periods per Unit
	Handling Accidents and Incidents	farm mechanical hazards	Guide the students to list and identify farm mechanical hazards and the tools / materials and equipment used to handle farm mechanical hazards Practical work: Guide the students on how to use tools / materials and equipment used to handle farm mechanical hazards Activity: Organize the students in manageable groups to identify and handle farm mechanical hazards in school premises	 able to: Carry out first aid to persons involved in accidents related to mechanical hazards Use service manual Interpret workshop rules and regulations Respond correctly and safely when faced with an emergency Identify and apply all emergency equipment and supplies Locate first aid kit Carry out artificial respiration Report to superiors Record accidents Identify hazardous material Handle hazard material Use colour code and know what each colour represents Handle mechanical and electrical equipment Follow compressed air rule Follow good environmental practices 	mechanical hazards handled according to workshop rules and regulations	 Evidence Detailed knowledge of: Method used: The student should be able to explain how to: Handle farm mechanical hazardous materials Carry out first aid Principles: The student should explain principles of: Handling farm mechanical hazardous materials Identifying mechanical hazardous Theories: The student should explain: - Effect of farm mechanical hazards Treatment for burns 	 tools, equipment, materials and safety gear are to be available: First aid kit Firefighting equipment Overall Gum boots Eye masks/glass Gloves Dust bin Dust pan Broom-soft and hard Cobweb brush Mop 	

Module Title	Unit Title			Ass	sessment Criteria		Training	Number
(Main Competences)	(Specific Competence s)	Elements (Learning Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Servic e Assessment	Knowledge Assessment	Requirements/ Suggested Resources	of Periods per Unit
				 Handle machines Use safety gears Clean tools, equipment and workplace Store tools and equipment 		 Treatment for fractures Treatment for unconscious person Importance of using safety gears Usage of colour code and safety signs Reading manufacture's instruction before operating machine Basic function of human body Respiratory and circulatory systems Circumstantial knowledge: Detailed knowledge about: Safety precautions while handling accidents and incidents Safe handling of tools, equipment 		

Module Title	Unit Title			Ass	essment Criteria		Training	Number
(Main Competences)	(Specific Competence s)	Elements (Learning Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Servic e Assessment	Knowledge Assessment	Suggested Resources	of Periods per Unit
		(b) Handling farm physical hazards	Brainstorm: Guide the students to define, identify physical hazards and materials / tools and equipment used to handle physical hazards. Practical work: Guide the students on how to use and handle tools/materials and equipment for handling and managing physical hazards Activity: Organize the students in manageable groups to identify and handle farm physical hazards in school premises	 The student should be able to: Carry out first aid to person involved in accidents related to physical hazards Use service manual Interpret workshop rules and regulations Respond correctly and safely when faced with an emergency Identify and apply all emergency equipment and supplies Locate first aid kit Report to superiors Record accidents Identify hazardous material Use colour code and know what colour represent Handle mechanical and electrical equipment 	Farm Physical hazards handled according to workshop rules and regulations	and machinesKnowledgeEvidenceDetailedknowledge of:Method used: Thestudent should beable to explain howto:Handle farmphysicalhazardousmaterialsCarry out firstaidPrinciples: Thestudent shouldexplain principlesof:Handling farmphysicalhazardousmaterialsIdentifyinghazardousmaterialsEmergency life	The following tools, equipment, materials and safety gear are to be available: • First aid kit • Firefighting equipment • Overall • Gum boots • Eye masks/glass • Gloves	
				 Follow compressed air rule Follow good environmental 		Theories: The student should explain: - • Effect of		

Module Title	Unit Title			Ass	sessment Criteria		Training	Number
(Main Competences)	(Specific Competence s)	Elements (Learning Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Servic e Assessment	Knowledge Assessment	Suggested Resources	of Periods per Unit
				practices Handle machines Use safety gears Clean tools, equipment and workplace Store tools and equipment		 physicals hazards Treatment for burns Treatment for fractures Treatment for unconscious person Importance of using safety gears Usage of colour code and safety signs Reading manufacture's instruction before operating machine Basic function of human body Respiratory and circulatory systems Circumstantial knowledge: Detailed knowledge about: Safety precautions while handling 		

Module Title	Unit Title			Ass	sessment Criteria		Training	Number
(Main Competences)	(Specific Competence s)	Elements (Learning Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Servic e Assessment	Knowledge Assessment	Requirements/ Suggested Resources	of Periods per Unit
						accidents and incidents Safe handling of tools, equipment and machines		
		(c) Handling agrochemic al hazards	Group discussion: Guide the students to list, identify and define agrochemical materials and hazards Practical work: Guide the students on how to use / handle tools and materials for handling agrochemical hazards safely Activity: Organize the students in manageable groups to handling agrochemical hazards in the field at school premises or another relevant place	 The student should be able to: Carry out first aid to a person involved in agrochemical hazards Use service manual Interpret workshop rules and regulations Respond correctly and safely when faced with an emergency Locate first aid kit Carry out artificial respiration Record accidents Follow compressed air rule Follow good environmental practices Use safety gears Clean tools, equipment and workplace Store tools and 	Agrochemical hazards handled according to workshop rules and regulations	Knowledge Evidence Detailed knowledge of: Method used: The student should be able to explain how to: • Handle agrochemical hazardous materials • Handle agrochemical hazards • Carry out first aid Principles: The student should explain principles of: Identifying and handling agrochemical hazardous materials Theories: The student should explain: -	The following tools, equipment, materials and safety gear are to be available: • First aid kit • Overall • Gum boots • Eye, ear, nose and mouth masks • Gloves • Bath showers / Tape water	

Module Title	Unit Title			Ass	sessment Criteria		Training	Number
(Main Competences)	(Specific Competence s)	Elements (Learning Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Servic e Assessment	Knowledge Assessment	Requirements/ Suggested Resources	of Periods per Unit
				equipment		 Effects of agrochemical hazards Treatment of burns Importance of using safety gears Usage of colour code and safety signs Respiratory and circulatory systems Circumstantial knowledge: Detailed knowledge about: Safety precautions while handling accidents and incidents Safe handling of tools, equipment and machines 		
	1.3. Handling fire accident	(a) Identifying different classes of fire	Brainstorm: Guide the students to identify and define different classes of fire, materials and procedures	 The student should be able to: Select tools, equipment and safety gears Identify common 	Different classes of fire known as per stipulated rules and	Knowledge Evidence Detailed knowledge of: Method used: The	The following tools, equipment, materials and safety gear are to be available:	113
			to identify different classes of fire	classes of fireUse first aid kit	regulations	student should be able to explain	• Firefighting tools	

Module Title	Unit Title			Assessment Criteria			Training	Number
(Main Competences)	(Specific Competence s)	Elements (Learning Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Servic e Assessment	Knowledge Assessment	Suggested Resources	of Periods per Unit
			Guest speaker: Invite a resource person to teach on different classes of fire Practical work: Guide the students on how to identify different classes of fire safely Activity: Organize the students in manageable groups to identify and define different classes of fire at farm workshop in school premises or another relevant place	 Respond correctly and safely when faced with different types of fire Apply right class of firefighting materials Observe safety precautions Store tools, equipment and safety gears 		 different classes of fire Principles: The student should explain the principles of: Differentiating classes of fire Theories: The student should explain: - Different classes of fire, Types and common classes of fire, Circumstantial knowledge: Detailed knowledge about: Safety precautions while handling fire accidents Safe handling of tools and equipment 	 Workshop rules and regulation manuals Different classes of fire Fire extinguishers Firefighting materials First aid kit Gloves Safety boots Overall Safety clear glasses 	
		(b) Handling	Brainstorm:	The student should be	Different	Knowledge	The following	
		firefighting	Guide the students to	able to:	firefighting	Evidence	tools, equipment,	
		equipment	identify and define	Select tools, equipment	materials, tools	Detailed	materials and	
			different tools, materials	and safety gears, Use first	and equipment	knowledge of:	safety gear are to	
			and equipment used to	aid kit,	for different	Method used: The	be available:	

Module Title	Unit Title			Ass	sessment Criteria		Training	Number
(Main Competences)	(Specific Competence s)	Elements (Learning Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Servic e Assessment	Knowledge Assessment	Suggested Resources	of Periods per Unit
			fight different classes of fire Practical work: Guide the students on how to use / handle tools, materials and equipment for fighting different classes of fire safely Activity: Organize the students in manageable groups to handle firefighting tools, materials and equipment in school premises or other places	Respond correctly and safely when faced with different types of fire, identify different types of fire extinguisher, apply right class of fire extinguisher, handle different types of fire, Apply right class of firefighting materials, Check and test firefighting equipment, Observe safety precautions, Store tools, equipment and safety gears	classes of fire handled correctly as per stipulated rules and regulations.	 student should be able to explain how to handle different firefighting equipment Principles: The student should explain the principles of: Checking and testing different firefighting equipment, Applying right class of fire extinguishers, Theories: The student should explain: - Importance of handling firefighting equipment, Handle different types of fire, Importance of checking and servicing firefighting equipment, Importance of checking and servicing firefighting equipment, 	 Firefighting rules and regulations Workshop rules and regulations Different firefighting equipment Firefighting materials First aid kit Gloves Safety boots Overall Safety clear glasses 	

Module Title	Unit Title			Ass	essment Criteria		Training	Number
(Main Competences)	(Specific Competence s)	e (Learning Activities) Suggested Teaching and Learning Methods	Process Assessment	Product/Servic e Assessment	Knowledge Assessment	Suggested Resources	of Periods per Unit	
		(c) Handling	Brainstorm:	The student should be	Different	firefighting materials, Circumstantial knowledge: Detailed knowledge about: Safety precautions while handling fire accidents Knowledge	The following	
		different classes of fire	Guide the students to Identify different classes of fire, different tools, materials and equipment used to handle different classes of fire Practical work: Guide the students on how to use / handle tools and materials for handling different classes of fire safely Activity: Organize the students in manageable groups to handle different classes of fire in school premises or at another relevant place	 able to: Select tools, equipment and safety gears Identify common classes of fire Respond correctly and safely when faced with different types of fire Identify different types of fire extinguisher Apply right class of fire extinguisher Handle different types of fire Apply right class of firefighting materials Check and test fire extinguishers Observe safety precautions Store tools, equipment and safety 	classes of fire handled as per stipulated rules and regulations	Evidence Detailed knowledge of: Method used: The student should be able to explain how to handle different classes of fire accidents Principles: The student should explain the principles of: Handling different classes of fire, Checking and testing fire extinguishers, Applying right class of fire extinguishers, Theories: The student should	 tools, equipment, materials and safety gear are to be available: Firefighting rules and regulations Workshop rules and regulations Fire extinguishers Firefighting materials Different classes of fire First aid kit Gloves Safety boots Overall Safety clear glasses 	

Module Title	Module Title				sessment Criteria		Training	Number
(Main Competences)	(Specific Competence s)	Elements (Learning Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Servic e Assessment	Knowledge Assessment	Requirements/ Suggested Resources	of Periods per Unit
				gears		 explain: - Importance of handling fire accidents, Importance of checking and servicing fire extinguishers, Importance of differentiating firefighting materials Circumstantial knowledge: Detailed knowledge about: Safety precautions while handling fire accidents Safe handling of tools and equipment 		
	1.4 Performing first aid	(a) Performing artificial respiration	Brainstorm: Guide the students to identify and define different tools, materials and equipment used to performing artificial respiration Guest speaker: Invite a specialized doctor in school to describe the	The student should be able to: Select tools, materials and equipment Perform artificial respiration Sterilize first aid kit tools Observe safety precautions Store first aid tools and equipment	Artificial respiration performed conforms to medical requirements	Knowledge Evidence Detailed knowledge of: - Method used: The student should be able to explain how to perform artificial respiration Principles: The student should explain principles	The following tools, equipment, materials and safety gear are to be available: • First aid Kit • Stretcher • Light blanket • Sterilizer • bag-valve- mask (BVM),	105

Module Title	Unit Title			Ass	essment Criteria		Training	Number
(Main Competences)	(Specific Competence s)	e (Learning Activities) Suggested Teaching and Learning Methods		Process Assessment	Product/Servic e Assessment	Knowledge Assessment	Requirements/ Suggested Resources	of Periods per Unit
			recommended and principles of performing artificial respiration Use video clips Display different methods of artificial respiration Practical work: Guide the students on how to use / handle tools, materials and equipment to performing artificial respiration safely Activity: Organize the students in manageable groups to performing artificial respiration in school premises or another relevant place			 of: - Performing artificial respiration Providing first aid Theories: The student should explain: - Different types of accidents Types of artificial respiration The use of accessories in a first aid kit Importance of first aid Circumstantial knowledge: Detailed knowledge about: Safety precautions to be observed while performing first aid Safe handling of first aid kit 	mechanical ventilator, • Towel, • Overall • Medical gloves • Safety boots	
		(b) Performing	Brainstorm:	The student should be	First aid to	Knowledge	The following	
		first aid to	Guide the students to list	able to:	minor wound	Evidence Detailed	tools, equipment,	
		minor	and identify different	• Select tools, materials	offered	knowledge of: -	materials and	
		wound	types of wounds with	and equipment.	conforms to	wiethod used: The	safety gear are to	
			emphasize on minor	• Identify types of	medical	student should be	be available:	
			wounds	injuries	requirements	able to explain how	First aid Kit	

Module Title	Unit Title (Specific Competence s)	Unit Title (Specific competence s) Elements (Learning Activities) Suggested Learnir		Ass	Training	Number		
(Main (A Competences) Co			Suggested Teaching and Learning Methods	Process Assessment	Product/Servic e Assessment	Knowledge Assessment	Requirements/ Suggested Resources	of Periods per Unit
			Identify different tools and materials in first aid kit for handling minor wound Guest of hour: Invite a medical doctor to train the students on how to handling minor wound Practical work: Guide the students on how to use / handle tools and materials in performing first aid to minor wound safely Activity: Organize the students in manageable groups to perform first aid to minor wound in school premises	 Attend minor wounds. Sterilize first aid kit tools Observe safety precautions Store first aid tools and equipment 		to perform first aid to minor wound Principles: The student should explain principles of: - • Attending minor wounds • Providing first aid Theories: The student should explain: - • Different types of wounds • The use of accessories in a first aid kit • Importance of first aid Circumstantial knowledge: Detailed knowledge about: • Safety precautions to be observed while performing first aid • Safe handling of first aid kit	 Sterilizer Overall Medical gloves Safety boots 	

Module Title	Unit Title			Ass	Training	Number			
(Main Competences)	(Specific Competence s)	Elements (Learning Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Servic e Assessment	Knowledge Assessment	Requirements/ Suggested Resources	Requirements/ Suggested Resources	of Periods per Unit
2.0 Preparing land for field crops production	2.1 Conducting investigation for new farm	(a) Identifying landscape	Brainstorm: Guide the students to list and identify different types of tools, materials and equipment required to identifying landscape Identify different features of the landscape important for opening new farm Practical work: Guide the students on how to use / handle tools and materials in identifying landscape properly Activity: Organize the students in manageable groups to identifying landscape in school premises or new farm area	 The student should be able to: Walk around inspecting the field Locate physical features found in the field Draw sketch map of the surveyed area Make decision of the suitability of the place 	New farm land is identified for field crop establishment	 Knowledge Evidence Detailed knowledge of: Method used: The student should be able to explain how to identifying landscape Principles: The student should explain the principles of identifying landscape Theories: The student should explain: Importance of investigating a new farm General concepts of selecting site in crop production Relationship between soil types of a given area and vegetation cover Relationship between the natural 	The following tools, equipment, materials and safety gear are to be available: • Gum boot • Overall • Farm area • Note book • Pen • Pencil • Global Position System (GPS)	105	

Module Title	Unit Title	Unit Title (Specific Competence s) Elements (Learning Activities)		Ass	Training	Number		
(Main Competences)	(Specific Competence s)		Suggested Teaching and Learning Methods	Process Assessment	Product/Servic e Assessment	Knowledge Assessment	Requirements/ Suggested Resources	of Periods per Unit
						 vegetation and the crop to be grown Concept of environment Land scape formation Circumstantial knowledge: Detailed Knowledge about: Factors to be considered when investigating new farm for crop establishment Crop requirements Environmental impact Biotic and abiotic factors 		
		(b) Identifying water source	Brainstorm: Guide the students to Identify different tools, materials and equipment to identifying water sources Practical work: Guide the students on how to use / handle tools	 The student should be able to: Walk around inspecting the field Locate and define water sources found in the area Draw sketch map of the average of th	Water sources located and documented according to land survey principles	Knowledge Evidence Detailed knowledge of: Method used: The student should be able to be able to explain how to investigate for identifying water	The following tools, equipment, materials and safety gear are to be available: • Gum boot • Overall • Field Area	

Module Title	Iodule Title (Main ompetences)Unit Title (Specific Competence s)Elements (Learning Activities)	Init Title		Ass	Training	Number		
(Main Competences)		Suggested Teaching and Learning Methods	Process Assessment	Product/Servic e Assessment	Knowledge Assessment	Requirements/ Suggested Resources	of Periods per Unit	
			and materials in identifying water sources Activity: Organize the students in manageable groups to identifying water sources in a new farm area or school premises	 locate water sources and other features Make decision of the suitability of the place 		sources for a new farm Principles: The student should explain the principles of investigating a new farm Theories: The student should explain: • Types of water the quality of water • Water availability • Water sources and regulations • General concepts of selecting site in crop production • Concept of environment Circumstantial knowledge: Detailed knowledge about: • Factors to be considered when investigating for water sources • Crop requirements • Environmental	 Pen Pencil Global Position System (GPS) Area resource map Flip chart 	

Module Title	e Unit Title (Specific s) Competence s)			Ass	Training	Number		
(Main (Sp Competences) Comj		(Specific (Specific Competence s)	Elements (Learning Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Servic e Assessment	Knowledge Assessment	Requirements/ Suggested Resources
						impactBiotic and abiotic factors		
		(c) Identifying natural vegetation	Brainstorm: Guide the students to list and identify different types of tools, materials and equipment for identifying natural vegetation. Identify and list different types of natural vegetation and their features Practical work: Guide the students through the use of resource map to identify natural vegetation Activity: Organize the students in manageable groups to identifying natural vegetation	 The student should be able to: Select tools and equipment for identifying natural vegetation Walk around inspecting the field Describe different types of natural vegetation in new farm Draw sketch map of the surveyed area Make decision of the suitability of the place 	Natural vegetation identified and described according to the laid down guidelines and principles	 Knowledge Evidence Detailed knowledge of: Method used: The student should be able to be able to explain how to investigate and select a new farm Principles: The student should explain the principles of investigating a new farm with natural vegetation Theories: The student should explain: Importance of investigating a new farm General concepts of selecting site in crop production Relationship between the 	The following tools, equipment, materials and safety gear are to be available: • Gum boot • Overall • Field Area • Note book • Pen • Pencil • Global • Position	
Module Title	Unit Title	Unit Title Specific ompetence s) Elements (Learning Activities)		Ass	essment Criteria		Training Requirements/	Number
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(Main Competences)	(Specific Competence s)		(Learning Activities) Suggested Teaching and Learning Methods		Process Assessment	Product/Servic e Assessment	Knowledge Assessment	Requirements/ Suggested Resources
						 natural vegetation and the crop to be grown Concept of environment Land scape formation Circumstantial knowledge: Detailed knowledge about: Factors to be considered when investigating new farm for crop establishment Environmental impact 		
	2.2 Conducting soil analysis	(a) Collecting soil samples	Brainstorm: Guide the students to Identify and define different types of tools, materials and equipment for collecting soil samples wound Demonstration: Demonstrate to the students on how to collect soil samples Practical work:	 The student should be able to: Select tools, materials and equipment Collect soil samples Observe safety precaution Clean the instruments Store the instruments 	Soil samples collected conforms to laid down standard operating procedures	Knowledge Evidence Detailed knowledge of Method used: The student should be able to explain how to collect soil samples in the field Principles: The student should explain principles of	 The following tools, equipment, materials and safety gear are to be available: Gum boot, Overall, Soil kit, Marker pen, note book Pegs, Hand hoe, Soil 	105

Module Title	Unit Title	Unit Title Elements		Ass		Training Requirements/ Suggested Resources	Number	
(Main Competences)	(Specific Competence s)	(Learning Activities) Suggested Teaching and Learning Methods		Process Assessment	Product/Servic e Assessment		Knowledge Assessment	of Periods per Unit
			Guide the students on how to use field map for collecting soil sampling Activity: Organize the students in manageable groups to collecting soil samples in school premises or new field			 collecting soil sample for new farm establishment Theories: The student should explain: Procedures for soil sampling, Circumstantial knowledge: Detailed Knowledge about: Occupational health and safety policy Safe precautions in using soil kit and dealing with soil samples 	sample container, Cap • Soil auger, Plastic bags, Bush knife, Bucket, • Field map locating sites for soil sample collection	
		(b) Preparing soil sample	Brainstorm: Guide the students to list and identify different tools, materials, devices and equipment required to preparing soil samples Practical work: Guide the students on how to use / handle tools, materials, devices	 The student should be able to: Select tools and equipment Prepare soil samples for analysis Observe safety precaution Clean the instruments Store the instruments 	Soil samples prepared conforms to standard operating procedures	Knowledge Evidence Detailed knowledge of Method used: The student should be able to explain how to prepare soil sample Principles: The	The following tools, equipment, materials and safety gear are to be available: • Overall • Soil kit • Marker pen • Soil sample container	

Module Title	Unit Title	it Title Elements		Ass	essment Criteria		Training Boguiroments/	Number
(Main Competences)	(Specific Competence s)	Elements (Learning Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Servic e Assessment	Knowledge Assessment	Requirements/ Suggested Resources	of Periods per Unit
			and equipment to preparing soil samples Activity: Organize the students in manageable groups to preparing soil samples at school laboratory or other relevant places			student should explain principles involved in preparing soil samples Theories: The student should explain: • Procedures for soil sample preparation. • Types of soil Circumstantial knowledge: Detailed knowledge about: • Occupational health and safety policy • Safe precautions when dealing with soil samples	 Cap Soil auger Plastic bags Sieving equipment Soil sample grinding tools Mark pen / pencil 	
		(c) Conducting	Brainstorm:	The student should be	Soil analysis	Knowledge	The following	
		son test	List different parameters	• Select tools materials	results presented	Detailed	materials and	
			to be tested when	and equipment	conforms to	knowledge of	safety gear are to	
			conducting soil test	• Prepare soil samples	laid down	Method used: The	be available:	
			Identify different	for analysis		student should be	Gum boot	
			methods and approaches	• Determine soil colour		able to explain how	• Overall	
			used in conducting soil	• Determine soil		to analyse soil in the	• Soil sample	

Module Title	Unit Title			Ass	Assessment Criteria			
(Main Competences)	(Specific Competence s)	(Learning Activities)	(Learning Activities) Suggested Teaching and Learning Methods	Process Assessment	Product/Servic e Assessment	Knowledge Assessment	Requirements/ Suggested Resources	of Periods per Unit
			test for different parameters List different materials, tools, devices and equipment for conducting soil test Practical work: Guide the students on how to use / handle tools, materials, devices and equipment to conducting soil test Activity: Organize the students in manageable groups to conducting soil test at school laboratory or other relevant places	texture Determine soil pH Interpret results Observe safety precaution Clean the instruments Store the instruments 		field Principles: The student should explain principles involved in determination of soil nutrients status Theories: The student should explain: • Procedures for soil sampling • Soil fertility • Types of soil • Procedure for soil analysis Circumstantial knowledge: Detailed knowledge about: • Occupational health and safety policy • Safety precautions when analysing soil samples	container • Cap • Plastic bags • Sieving equipment • Soil testing devices • Soil pH meter • Colour chart • Measuring cylinders • Water • Litmus paper	
	2.3	(a) Identifying	Brainstorm:	The student should be	Farm tools,	Knowledge	The following	113
	Performing	farm tools,	Guide the students to list	able to:	equipment and	Evidence	tools, equipment,	
	land	equipment	different types of farm	• List and identify	machinery for	Detailed	materials and	
	clearance	and	tools, materials and	different types of	land clearance	knowledge of:	safety gear are to	
		machinery	equipment to performing	farm tools, equipment	well identified	Method used: The	be available:	

Module Title	Module Title Unit Title Elements			Ass	sessment Criteria		Training	Number
(Main Competences)	(Specific Competence s)	Elements (Learning Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Servic e Assessment	Knowledge Assessment	Requirements/ Suggested Resources	of Periods per Unit
			land clearance Group Discussion: Guide the students on how to identify and describe farm tools and equipment Hand-on-activities: Organize the students in manageable groups to identify farm tools, Materials, equipment and machinery in school premises or at other places	 and machine Observe safety precautions pertaining the use of implements Clean tools, equipment and machine Store tools, equipment and machines. 	according to crop husbandry practices	 student should be able to explain how to perform: Hand Clearance Chemical clearance Mechanical clearance Principles: The student should explain the principles of clearing land Theories: The student should explain: Importance of clearing land Rules and regulations of land clearing Implements used in land clearing Types of tools, equipment and machines used in clearing land.	 Tractor Plough (Mould board or disc) chisel Harrows Hand hoes Bush knife (panga) Gum boots Overalls Gloves Caps Chain saw Spades Axe Ranging poles Pegs And others 	

Module Title	Unit Title	t Title ecific petence s) Elements (Learning Activities) Suggested Teaching and Learning Methods		Assessment Criteria			Training Requirements/	Number
(Main Competences)	(Specific Competence s)		Process Assessment	Product/Servic e Assessment	Knowledge Assessment	Suggested Resources	of Periods per Unit	
		(b) Perform manual or hand clearance	Brainstorm: Guide the students to list and identify different types of tools and materials for manual or hand land clearance Practical work: Guide the students on how to use / handle tools and materials in performing manual or hand land clearance safely Activity: Organize the students in manageable groups to perform manual or hand	 The student should be able to: Select farm tools and materials for manual or hand land clearance Remove stumps Remove grasses trees Burn the removed stumps and grasses Refill the holes Level the land Observe safety precautions pertaining the use of implements Clean tools, 	Manual or hand land clearance performed according to crop husbandry practices	of soil Permeability of different types of soils Circumstantial knowledge: Detailed knowledge about: Occupational health and safety policy Observe land clearing safety rules and regulations Knowledge Evidence Detailed knowledge of: Method used: The student should be able to explain how to perform: Hand / manual land clearance Principles: The student should explain the principles of manual or hand land clearance Theories: The	The following tools, equipment, materials and safety gear are to be available: • Hand hoes • Bush knife (panga) • Gum boots • Overalls • Gloves • Caps • Spades • Axe • Ranging poles	

Module Title Unit Title				Ass		Training Requirements/	Number	
(Main Competences)	(Specific Competence s)	Elements (Learning Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Servic e Assessment	Knowledge Assessment	Requirements/ Suggested Resources	of Periods per Unit
			land clearance in the field or new farm	equipment and machine • Store tools, equipment and machines		 students should explain: Importance of manual / hand land clearance Rules and regulations of land clearing Implements used in manual /hand land clearing Types of tools, equipment and machines used in clearing land Circumstantial Knowledge: Detailed knowledge about: Occupational health and safety policy. Observe land clearing safety rules and regulations 	• Pegs	
		(c) Performing	Brainstorm:	The student should be	Chemical land	Knowledge	The following	
		cnemical	Identify different tools	able to:	clearance	Evidence Detailed	tools, equipment,	
		clearance	materials and equipment	• Select farm tools,	according to	knowledge of	safety gear are to	
		clearance	for chemical land	equipment and	according to	Mothod used: The	be available:	
			clearance	machine	husbandry	student should be	Tractor	
			clearance	Cut trees	nusbandry	student should be	• I ractor	

Module Title	Unit Title			Ass	Assessment Criteria			
(Main Competences)	(Specific Competence s)	Elements (Learning Activities)	Suggested Teaching and Learning Methods Practical work:	Process Assessment	Product/Servic e Assessment Knowledg Assessment	Knowledge Assessment	Requirements/ Suggested Resources	of Periods per Unit
			Practical work: Guide the students on how to use / handle tools and materials in performing chemical land clearance safely Activity: Organize the students in manageable groups to perform chemical land clearance in school premises	 Remove stumps Refill holes Apply chemical land clearance Observe safety precautions pertaining the use of chemicals and farm equipment Clean tools, equipment and machines Store tools, equipment and machines 	practices	able to explain how to perform: • Chemical clearance Principles: The student should explain the principles of chemical land clearing Theories: The student should explain: • Importance of chemical land clearing • Rules and regulations of land clearing • Tools and equipment used in chemical land clearing Circumstantial knowledge: Detailed knowledge about: • Biodiversity conservation	 Sprayer Boom sprayer Bush knife (panga) Gum boots Chemicals for land clearance Overalls Gloves Caps Ranging poles Pegs Water, Measuring cylinders Weighing balance 	

Module Title	Unit Title	Unit Title (Specific Elements	Elements (Learning Activities) Suggested Teaching and Learning Methods	Assessment Criteria			Training Requirements/	Number
(Main Competences)	(Specific Competence s)	(Learning Activities) Sugg		Process Assessment	Product/Servic e Assessment	Knowledge Assessment	Suggested Resources	of Periods per Unit
	s)	(d) Performing mechanical land clearance	Brainstorm: Guide the students to list and identify different tools, materials, equipment and machines used in performing mechanical land clearance Practical work: Guide the students on how to use / handle tools and machines in performing mechanical land clearance Activity: Organize the students in manageable groups to perform mechanical land clearance in a new farm	 The student should be able to: Select farm tools, equipment and machine Perform mechanical land clearance Cut trees Remove stumps Remove grasses trees Burn the removed stumps and grasses Refill the holes Level the land Observe safety precautions pertaining the use of implements Clean tools, equipment and machine Store tools, equipment and 	Assessment Mechanical land clearance performed according to crop husbandry practices	clearing safety rules and regulations Knowledge Evidence Detailed knowledge of: Method used: The student should be able to explain how to perform: Mechanical land clearance Principles: The student should explain the principles of mechanical land clearing Theories: The student should explain: • Importance of mechanical land clearing. • Rules and	The following tools, equipment, materials and safety gear are to be available: • Tractor • Plough (Mould board or disc) chisel • Harrows • Hand hoes • Bush knive (panga) • Gum boots • Overalls • Gloves • Caps • Chain saw • Spades • Axe • Ranging	per Unit
				machines		 regulations of mechanical land Implements used in land clearing 	• Pegs	

Module Title	Unit Title	it Title Elements	ents ning sties) Suggested Teaching and Learning Methods	Assessment Criteria			Training	Number
(Main Competences)	(Specific Competence s)	Elements (Learning Activities)		Process Assessment	Product/Servic e Assessment	Knowledge Assessment	Suggested Resources	of Periods per Unit
	2.4 Land tillage	(a) Conducting ploughing	Brainstorm: Guide the students to list and identify different types of tools, equipment and machines used in conducting tillage Practical work: Guide the students on how to use / handle tools, equipment and machines when conducting land tillage Activity: Organize the students in manageable groups to conducting ploughing in school premises or at	The student should be able to: • Select farm tools equipment and machines • Conduct ploughing • Observe safety precautions • Clean tools, equipment and machines • Store tools equipment and machines	Land ploughed according to crop husbandry practices	 Types of tools, equipment and machines used in mechanical land clearing land Circumstantial Knowledge: Detailed Mowledge about: Observe mechanical land clearing safety rules and regulations Knowledge Evidence Detailed Knowledge of: Method used: The student should be able to explain how to perform land tillage for field crops Principles: The student should explain principles applied in conducting land ploughing Theories: 	The following tools, equipment, materials and safety gear are to be available: • Tractor, • Gum boot • Overall • Harrows • Cultivators • Ridger • Rotary hoes • Power tillers • Plough (mould board or disc) chisel	113

Module Title	Unit Title	t Title Assessment Criteria				Training	Number	
(Main Competences)	(Specific Competence s)	Elements (Learning Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Servic e Assessment	Knowledge Assessment	Requirements/ Suggested Resources	of Periods per Unit
			other relevant places			 The student should explain: Effect of tillage on soil Conventional Equipment and tools used in conducting ploughing Rules and regulations of land ploughing Circumstantial knowledge Detailed knowledge about: Obstacles in tilling the land Observing rules and regulations of tillage Observe land tilling safety rules and regulation 		
		(b) Conducting harrowing	Brainstorm: Guide the students to identify different tools, equipment and machines used for conducting	 The student should be able to: Select farm tools equipment and machines 	Harrowing performed according to crop husbandry	Knowledge Evidence Detailed knowledge of: Method used: The	The following tools, equipment, materials and safety gear are to be available:	
			Practical work:	Conduct harrowingObserve safety	practices	able to explain how	Gum bootOverall	

Module Title	Unit Title		Assessment Criteria Train				Training	Number
(Main Competences)	(Specific Competence s)	Elements (Learning Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Servic e Assessment	Knowledge Assessment	Suggested Resources	of Periods per Unit
			Guide the students on how to use / handle tools, machines and equipment used in conducting harrowing safely Activity: Organize the students in manageable groups to conducting harrowing in the field at school premises or other relevant places	precautions Clean tools equipment and machines Store tools equipment and machines 		to perform land harrowing for field crops Principles: The student should explain principles involved in land Theories: The student should explain: • Effect of tillage on soil • Conventional tillage • Conservation tillage • (covered in methods) • Uses of equipment and tools • Rules and regulations of land preparations Circumstantial knowledge about: • Obstacles in tilling the land • Adherence with	 Harrows Cultivators Rotary hoes Power tillers Tractor 	

Module Title	Unit Title	nit Title Elements		Ass		Training Requirements/	Number	
(Main Competences)	(Specific Competence s)	Elements (Learning Activities)	(Learning Activities) Suggested Teaching and Learning Methods	Process Assessment	Product/Servic e Assessment	Knowledge Assessment	Suggested Resources	of Periods per Unit
		(c) Preparing seedbed	Brainstorm: Guide the students to Identify different tools, materials, equipment and machines used in preparing seedbeds Practical work: Guide the students on how to use / handle tools, equipment and machines used in preparing seedbeds Activity: Organize the students in manageable groups to preparing seedbeds in school premises	 The student should be able to: Select farm tools equipment and machines Conduct seedbed preparation Make ridges Make different types of nursery beds Make farrows Make bands Observe safety precautions Clean tools equipment and machines Store tools equipment and machines 	Seedbeds prepared according to crop husbandry practices	 rules and regulations of tillage Occupational health safety policy Observe initial land tilling safety rules and regulation Knowledge Evidence Detailed knowledge of: Method used: The student should be able to explain how to prepare seedbed Principles: The student should explain principles of seedbed preparation Theories: The student should explain: Uses of equipment and tools in seedbeds preparation Rules and 	The following tools, equipment, materials and safety gear are to be available: • Tractor, • Gum boot • Overall • Pegs • Tape Measure • Ropes • Cultivators • Ridger • Hand hoes • Power tillers	

Module Title	Unit Title			Ass	sessment Criteria		Training Requirements/ Number	Number
(Main Competences)	(Specific Competence s)	Elements (Learning Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Servic e Assessment	Knowledge Assessment	Requirements/ Suggested Resources	of Periods per Unit
						regulations of land preparations		
						Circumstantial knowledge Detailed knowledge about: • Obstacles in tilling the land • Adherence with rules and regulations of tillage • Occupational health safety policy • Observe initial land tilling safety rules and regulation		
		(d) Preparing ridges	Brainstorm: Guide the students to Identify different types of tools, equipment and machines used to preparing ridges Practical work: Guide the students on	 The student should be able to: Select farm tools equipment and machines Conduct harrowing Make ridges Observe safety 	Ridges prepared according to crop husbandry practices	Knowledge Evidence Detailed knowledge of: Method used: The student should be able to explain how to perform land	The following tools, equipment, materials and safety gear are to be available: • Gum boot • Overall • Pegs	
			how to use / handle tools, equipment and	Observe safety precautionsClean tools equipment		tillage for field crops	• Tape Measure	

Module Title	Unit Title			Ass		Training	Number	
(Main Competences)	(Specific Competence s)	Elements (Learning Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Servic e Assessment	Knowledge Assessment	Suggested Resources	of Periods per Unit
			machines to preparing ridges safely Activity: Organize the students in manageable groups to preparing ridges in the field in school premises or at other relevant places	and machines • Store tools equipment and machines		 Principles: The student should explain principles involved in land Theories: The student should explain: Effect of tillage on soil Conventional tillage Conservation tillage (covered in methods) Uses of equipment and tools Rules and regulations of land preparations Circumstantial knowledge about: Obstacles in tilling the land Adherence with rules and regulations of tillage 	 Cultivators Ridger Rotary hoes Power tillers 	

Module Title	Unit Title		Elements	Ass	Assessment Criteria			Number
(Main Competences)	(Specific Competence s)	Elements (Learning Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Servic e Assessment	Knowledge Assessment	Requirements/ Suggested Resources	of Periods per Unit
						 Occupational health safety policy Observe initial land tilling safety rules and regulations 		
3.0 Applying fertilizers	3.1 Preparing organic fertilizer	(a) Preparing Farm Yard Manure (FYM)	Brainstorm: Guide the students to List and identify different materials, tools and equipment for preparing farm yard manure Practical work: Guide the students on how to use / handle tools and materials in preparing farm yard manure Activity: Organize the students in manageable groups to prepare farm yard manure in school premises or another relevant place	 The student should be able to: Select working tools, equipment and safety gears Collect materials for organic fertilizers Make farm yard manure Preserve the collected animal manure Observe safety precautions Clean tools, equipment Store tools and equipment at a safe dry place 	FYM fertilizer prepared as per laid down standards.	Knowledge Evidence Detailed knowledge of: Method used: The student should be able to explain how to prepare compost, FYM, liquid manure and green manure Principles: The student should explain the principles of preparing different types of organic fertilizers. Theories: The student should explain: • Types of organic fertilizers • Importance of	The following tools, equipment, materials and safety gear are to be available: • Wood ashes • Dry grass • Overalls • Gum boots • Hand hoes • Pegs • Cow dung • Straws of crop remains • Garbage bins • Spades • Water	220

Module Title	Unit Title			Ass	essment Criteria		Training	Number
(Main Competences)	(Specific Competence s)	(Learning Activities)	(Learning Activities) Suggested Teaching and Learning Methods	Process Assessment	Product/Servic e Assessment	Knowledge Assessment	Suggested Resources	of Periods per Unit
		(b) Preparing compost manure (Compostin g)	Brainstorm: Guide the students to: Identify different types of materials, tools and equipment used to prepare compost manure Practical work: Guide the students on how to use / handle tools and materials in preparing compost manure safely Activity: Organize the students in manageable groups to prepare compost manure in school premises or other relevant places	 The student should be able to: Select working tools, equipment and safety gears Collect materials for organic fertilizers Make compost manure, Preserve the collected animal manure Observe safety precautions Clean tools, equipment Store tools and equipment at a safe dry place 	Compost manure fertilizer prepared as per laid down standards	 using organic fertilizer to crops Method/procedu re used to prepare FYM, Circumstantial knowledge: Detailed knowledge about safe handling and use of organic fertilizers Knowledge Evidence Detailed knowledge of: Method used: The student should be able to explain how to prepare compost, farm yard manure, liquid manure and green manure Principles: The student should explain the principles of preparing different types of organic fertilizers Theories: The 	The following tools, equipment, materials and safety gear are to be available: • Wood ashes • Dry grass • Soil • Overalls • Gum boots • Hoes • Pegs • Cow dung • Straws of crop remains • Garbage bins • Trays	

Module Title	Unit Title	Assessment Criteria					Number	
(Main Competences)	(Specific Competence s)	(Learning Activities) Suggested Teaching and Learning Methods	Process Assessment	Product/Servic e Assessment	Knowledge Assessment	Requirements/ Suggested Resources	of Periods per Unit	
						 student should explain: Types of organic fertilizer including compost manure Importance of using organic fertilizer to crops Method/procedu re used to prepare compost, Green manure, Farm yard manure, liquid manure Circumstantial knowledge: Detailed knowledge about safe handling and use of organic fertilizers 	 Spades Water 	
		(c) Preparing green manure	Brainstorm: Guide the students to Identify different green manure crops, materials,	The student should be able to:Select working tools, equipment and safety	Green manure in cooperated / ploughed under as per	Knowledge Evidence Detailed knowledge of:	The following tools, equipment, materials and safety gear are to	

Module Title	Unit Title	Unit Title (Specific Elements	Elements (Learning Activities) Suggested Teaching and Learning Methods	Ass		Training Requirements/	Number	
(Main Competences)	(Specific Competence s)	Elements (Learning Activities)		Process Assessment	Product/Servic e Assessment	Knowledge Assessment	Suggested Resources	of Periods per Unit
			tools and equipment for preparing green manure Practical work: Guide the students on how to use / handle tools, materials and equipment in preparing / establishing and in cooperating green manure safely Activity: Organize the students in manageable groups to preparing and in cooporating green manure in the soil in school premises	 gears Access seed of relevant green manure crops Sow seeds of green manure crops appropriately In cooperate / plough under green manure crop at right stage of growth Make green manure Preserve the collected animal manure Observe safety precautions Clean tools, equipment Store tools and equipment at a safe dry place 	crop husbandly practices	 Method used: The student should be able to explain how to prepare compost, FYM, liquid manure and green manure Principles: The student should explain the principles of preparing different types of organic fertilizers Theories: The student should explain: Types of organic fertilizers Importance of using organic fertilizer to crops Method/procedu re used to prepare compost, green manure, FYM, and liquid manure 	 be available: Overalls Gum boots Hoes Pegs Spades Water Green manure crop seeds Field prepared for sowing green manure Containers for carrying seeds during sowing Rakes 	

Module Title	Unit Title	Unit Title Elements		Ass			Number	
(Main Competences)	(Specific Competence s)	Elements (Learning Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Servic e Assessment	Knowledge Assessment	Suggested Resources	of Periods per Unit
						knowledge: Detailed knowledge about safe handling and use of organic fertilizers		
		(d) Preparing liquid fertilizers	Brainstorm: Guide the students to Identify different materials, tools and equipment required for preparing liquid fertilizer Practical work: Guide the students on how to use / handle tools, materials and equipment for preparing liquid fertilizers Activity: Organize the students in manageable groups to prepare liquid manure fertilizer in school premises	 The student should be able to: Select working tools, materials, equipment and safety gears Collect materials for liquid fertilizers preparation Describe liquid fertilizers, Preserve the collected animal manure and plant materials Observe safety precautions Clean tools, equipment Store tools and equipment at a safe dry place 	Liquid manure fertilizers prepared as per laid down standards	Knowledge Evidence Detailed knowledge of: Method used: The student should be able to explain how to prepare liquid manure Principles: The student should explain the principles of preparing different types of organic fertilizers Theories: The student should explain: • Types of organic fertilizers • Importance of using organic fertilizer to crops	The following tools, equipment, materials and safety gear are to be available: • Wood ashes • Overalls • Gum boots • Net bags/ hessian clothes • Cow dung • Garbage bins • Water	

Module Title	Unit Title	Elements	ements arning ivities) Suggested Teaching and Learning Methods	Assessment Criteria			Training Requirements/	Number
(Main Competences)	(Specific Competence s)	Elements (Learning Activities)		Process Assessment	Product/Servic e Assessment	Knowledge Assessment	Suggested Resources	of Periods per Unit
						 Method/procedu re used to prepare liquid manure Circumstantial knowledge: Detailed knowledge about safe handling and use of organic fertilizers 		
	3.2 Applying fertilizers to the plant	(a) Performing foliar application	Brainstorm: Guide the students to Identify different types of foliar fertilizes, identify tools and equipment used to apply foliar fertilizers, Practical work: Guide the students on how to use / handle tools, equipment and materials in performing foliar fertilizer application properly Calculating or estimating amount of foliar fertilizer to apply Activity: Organize the students in	 The student should be able to: Select tools, equipment Select methods of applying fertilizer Determine the amount of fertilizer Calculate / estimate right amount of fertilizer Mix in the tank Apply foliar fertilizer Observe safety precaution Clean the tools / equipment Store the tools / equipment 	Foliar fertilizer applied as per laid down crop husbandry practices	Knowledge Evidence Detailed knowledge of: Method used: The student should be able to explain how to apply fertilizer to the plant Principles: The student should explain the principles of performing fertilizer application Theories: The student should explain: • Types of	The following tools, equipment, materials and safety gear are to be available: • Overall • Gloves • Gum boot • Sprayers, • Foliar fertilizers • Measuring cylinders • Water • Weighing balance	216

Module Title	Unit Title			Ass	sessment Criteria		Training	Number
(Main Competences)	(Specific Competence s)	Elements (Learning Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Servic e Assessment	Knowledge Assessment	Requirements/ Suggested Resources	of Periods per Unit
			manageable groups to performing foliar fertilizer application to the crops in school premises or other suitable area			fertilizer Right fertilizer to right crop Proper use of fertilizers Plant nutrients deficiency symptoms Importance of using fertilizer Effect of fertilizers to the plant Fertilizer recommendati ons to plants Circumstantial knowledge: Detailed knowledge about safe precautions in fertilizer application		
		(b) Performing basal application	Brainstorm: Guide the students to Identify different fertilizers for basal application Practical work: Guide the students on how to use / handle tools and materials in performing basal	 The student should be able to: Select tools, equipment Select appropriate fertilizer Select methods of applying fertilizer Determine the amount of fertilizer Make a trench around 	Basal fertilizer application performed as per laid down crop husbandry practices	Knowledge Evidence Detailed knowledge of: Method used: The student should be able to explain how to apply fertilizers to the plant Principles: The	 The following tools, equipment, materials and safety gear are to be available: Overall, Gloves, Gum boot, Bottle cap or any relevant 	

Module Title	Unit Title			Assessment Criteria			Training	Number
(Main Competences)	(Specific Competence s)	(Learning Activities) Suggested Teaching and Learning Methods		Process Assessment	Product/Servic e Assessment	Knowledge Assessment	Requirements/ Suggested Resources	of Periods per Unit
			fertilizer application safely Activity: Organize the students in manageable groups to performing basal fertilizer application to field crops in school premises or other relevant places	 the plant Put fertilizer in the trench Observe safety precaution. Clean the tools Store the tools 		student should explain the principles of fertilizer application Theories: The student should explain: Types of fertilizers, Right fertilizer for the right crop, Proper use of fertilizers, Plant nutrient deficiency symptoms, Importance of using fertilizer, Effect of fertilizers to the plant, Fertilizer recommendations to plants Circumstantial knowledge: Detailed knowledge about safe precautions in fertilizer application	 measure, Weighing balance Hand hoe or any relevant tool, Small container, Appropriate fertilizer 	
		(c) Performing	Brainstorm:	The student should be	Fertilizer	Knowledge	The following	
		fertilizer	Guide the students to	able to:	applied by	Evidence	tools, equipment,	
		broadcastin	Identify different types	 Select tools, equipment 	broadcasting	Detailed	materials and	
		g	of fertilizers appropriate	• Select methods of	as per laid	knowledge of:	safety gear are to	

Module Title	Unit Title			Ass	essment Criteria		Training	Number
(Main Competences)	(Specific Competence s)	Elements (Learning Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Servic e Assessment	Knowledge Assessment	Requirements/ Suggested Resources	of Periods per Unit
		application	for broadcasting application, identify different tools and equipment for fertilizer broadcasting Relevant crops and stage of growth for fertilizer broadcasting Practical work: Guide the students on how to use / handle tools and equipment for fertilizer broadcasting, Calculating or estimating amount of fertilizer to broadcast per area Activity: Organize the students in manageable groups to perform fertilizer broadcasting in the field at school premises or other relevant places	 applying fertilizer Determine the amount of fertilizer Make a trench around the plant Put fertilizer in the trench Observe safety precaution. Clean the tools and equipment Store the tools and equipment 	down crop husbandry practices	 Method used: The student should be able to explain how to apply fertilizer to the plant Principles: The student should explain the principles of performing fertilizer application Theories: The student should explain: Types of fertilizer Right fertilizer to right crop Proper use of fertilizers Soil nutrients deficiency symptoms Importance of using fertilizer Effect of fertilizer recommendati ons to plants 	 be available: Overall Gloves Gum boot Small containers Water Fertilizers to be broadcast Weighing balance 	

Module Title	Unit Title	Elemente		Ass	Assessment Criteria				
(Main Competences)	(Specific Competence s)	Elements (Learning Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Servic e Assessment	Knowledge Assessment	Requirements/ Suggested Resources	of Periods per Unit	
						knowledge: Detailed knowledge about safe precautions in fertilizer application			

Form Two

Table 4: Detailed Contents for Form Two

Module Title					Assessment Cri	teria		Number
(Main Competence)	Unit Title (Specific Competences)	Elements (Learning Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Servic e Assessment	Knowledge Assessment	Training Requirements/ Suggested Resources	of Periods per Unit
1.0 Sowing and planting field crops	1.1 Selecting quality seeds	(a) Performin g germinatio n tests	Group discussion: Guide the students to identify and define different tools, materials, equipment and devices used in performing germination tests Define germination tests Internet and library search: Guide students in groups or individually to search relevant information on factors for seed germination Explain principles for different field crop seed germination Practical work: Guide the students on how to use / handle tools, materials and equipment for performing germination tests. How germination is observed, scored and	 The student should be able to: Select tools, materials, devices, equipment and safety gears Clean the seeds Remove unwanted material (foreign) Select seed variety Cover the seeds Calculate germination percentage Observe safety precautions Store selected seeds 	Germination percentage of field crop seeds known	 Knowledge Evidence Detailed knowledge of: Method used: The student should be able to explain how to recognize quality seeds Principles: The student should explain the principles of recognizing seed quality Theories: The student should explain: Procedures for selecting quality seeds Characteristics of quality seeds Seed germination tests of legumes seeds Kinds of cereal seeds Kinds of fibre seeds Kinds of beverage 	 The following tools, equipment, materials and safety gear are to be available: Different types of field crop seeds Containers Trays Gloves Masks Water Tissue paper Seeds Germination chamber / room Sand Petri dishes Oven 	

Module Title				Assessment Criteria			Training Requirements/	Number
(Main Competence)	Unit Title (Specific Competences)	Elements (Learning Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Servic e Assessment	Knowledge Assessment	Training Requirements/ Suggested Resources	of Periods per Unit
		(b) Performin g seed soaking test	calculated Activity: Organize the students in manageable groups to perform field crop seed germination test in school premises Guide the students to identify different field crop seeds appropriate to soaking, identify different tools, materials, and equipment for performing seed soaking Time required for seed soaking for different field crop seeds Practical work: Guide the students on how to use / handle tools, materials and equipment for seed	The student should be able to: • Select tools, materials, equipment and safety gears • Select seed variety • Clean the seeds • Remove unwanted material (foreign) • Select good quality seeds • Soak seeds in water or other solution	Seeds soaked according to standard operating procedures	seeds Importance of quality seeds Uses of tools and equipment Circumstantial knowledge: Detailed knowledge about safe precautions in testing seed quality Knowledge Evidence Detailed knowledge of: Method used: The student should be able to explain how to determine seed quality Principles: The student should explain the principles of determining seed quality Theories: The student should explain: Procedures for selecting quality seeds Characteristics of quality seeds Kinds of legumes seeds	The following tools, equipment, materials and safety gear are to be available: • Containers • Trays • Overalls • Masks • Water • Basins • Field crop Seeds	
			soaking	Observe safety		Kinds of cereal		

Module Title				Assessment Criteria				Number
(Main Competence)	Unit Title (Specific Competences)	Elements (Learning Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Servic e Assessment	Knowledge Assessment	Training Requirements/ Suggested Resources	of Periods per Unit
		(c) Perform winnowin g	Activity: Organize the students in manageable groups to perform field crop seed soaking in school premises Brainstorm: Guide the students to identify different tools, materials, devices and equipment to perform winnowing List field crops that are relevant for winnowing Practical work: Guide the students on how to use / handle tools and equipment to perform winnowing of field crop seeds	precautions The student should be able to: • Select tools, materials, devices, equipment and safety gears • Clean the seeds • Remove unwanted material (contaminants) • Select good quality seeds • Select seed	Field crop seeds winnowed according to laid down standards	 seeds Kinds of oil seeds Kinds of fibre seeds Kinds of beverage seeds Importance of quality seeds Uses of tools and equipment Circumstantial knowledge: Detailed knowledge about safe precautions in testing seed quality Knowledge Evidence Detailed knowledge of: Method used: The student should be able to explain how to recognize quality seeds Principles: The student should explain the principles of recognizing quality seeds Theories: The student should explain: Procedures for selecting quality 	The following tools, equipment, materials and safety gear are to be available: • Gunny bags • Traditional trays /winnowing tools (ungo) • Overalls • Gloves • Caps • Gum boots • Masks • Water • Seeds of different field crops	

Module Title					Assessment Cri		Number	
(Main Competence)	Unit Title (Specific Competences)	Elements (Learning Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Servic e Assessment	Knowledge Assessment	Training Requirements/ Suggested Resources	of Periods per Unit
			Activity: Organize the students in manageable groups to perform winnowing of field crop seeds in school premises	 variety Observe safety precautions Store selected seeds 		seeds Characteristics of quality seeds Seed germination tests Kinds of legumes seeds Kinds of cereal seeds Kinds of oil seeds Kinds of oil seeds Kinds of fibre seeds Kinds of beverage seeds Kinds of beverage seeds Uses of tools and equipment Circumstantial knowledge: Detailed knowledge about safe precautions in testing seed quality	 Winnowing machines Mats / carpets 	
		(d) Choosing quality seeds	Brainstorm : Guide the students to identify criteria and	The student should be able to:	Quality seeds chosen and conform to	Knowledge Evidence Detailed knowledge of:	The following tools, equipment, materials and safety gear are to be	
			characteristics for	• Select tools,	national set	Method used: The	available:	

Module Title				Assessment Criteria			Training Paguiramenta/	Number
(Main Competence)	Unit Title (Specific Competences)	Elements (Learning Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Servic e Assessment	Knowledge Assessment	Training Requirements/ Suggested Resources	of Periods per Unit
			selecting quality field crop seeds. Features of quality seeds and poor- quality seeds Internet and library search: Guide students in groups or individually to search relevant information on registered seed company in Tanzania and its seed varieties Practical work: Guide the students on how to use the criteria / features for selecting suitable seeds. Read and interpret information provided on seed packaging material Activity: Organize the students in manageable groups to choose quality field crop seeds in school premises or any other relevant place	 materials, equipment and safety gears Clean the seeds Remove unwanted material (foreign) Select good quality seeds Select seed variety Observe safety precautions Store selected seeds 	standards	student should be able to explain how to recognize seed quality Principles: The student should explain the principles of recognizing seed quality Theories: The student should explain: • Procedures for selecting quality seeds • Characteristics of quality seeds • Seed germination tests • Kinds of legumes seeds • Kinds of cereal seeds • Kinds of oil seeds • Kinds of oil seeds • Kinds of beverage seeds • Kinds of beverage seeds • Kinds of beverage seeds • Kinds of beverage seeds • Importance of quality seeds • Uses of tools and equipment Circumstantial	 Containers Traditional trays / winnowing tools trays Overalls Gloves Caps Gum boots Masks Field crop seeds (quality and poor- quality ones) with labels on the packaging material School library with access internet 	

Module Title		Unit Title Elements S			Assessment Cri	teria		Number
(Main Competence)	Unit Title (Specific Competences)	Elements (Learning Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Servic e Assessment	Knowledge Assessment	Training Requirements/ Suggested Resources	of Periods per Unit
						knowledge: Detailed knowledge about Good quality seeds		
	1.2 Selecting quality planting materials	(a) Identifyin g features of good quality tubers	Group discussion: Guide the students to list different features of good quality tubers, To list deferent features / characteristics of poor-quality tubers Demonstration: Guide the students on how to identify features of good quality tubers Activity: Organize the students in manageable groups to identify good quality tubers in school premises or other relevant places	 The student should be able to: Identify characteristic s / features of quality tubers Select tubers of good quality as planting material Observe safety precautions Select appropriate size and age of planting materials Store planting materials 	Good quality planting material tubers selected as per recommended crop husbandry practices	 Knowledge Evidence Detailed knowledge of: Method used: The student should be able to explain how to select quality tubers as planting materials Principles: The student should explain the principles of selecting quality planting materials Theories: The student should be able to explain: Good planting materials Quality tubers Preparation of planting materials Types of planting materials Importance of quality planting materials Importance of quality planting materials Uses of tools and 	The following tools, equipment, materials and safety gear are to be available: • Overall • Gloves • Mask • Tubers with different features / characteristics of good and poor quality • Containers	129

Module Title					Assessment Cri	teria	Training Paguiraments/	Number
(Main Competence)	Unit Title (Specific Competences)	Elements (Learning Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Servic e Assessment	Knowledge Assessment	Training Requirements/ Suggested Resources	of Periods per Unit
		(b) Identify	Brainstorm	The student	Planting	equipment Circumstantial knowledge: Detailed knowledge about safe precautions in using good quality planting materials Knowledge Evidence	The following tools	
		features of good quality suckers	Guide the students to list different features of good quality suckers, list deferent features / characteristics of poor-quality suckers Internet and library search: Guide students in groups or individually to search relevant information on different types of suckers Practical work: Guide the students on how to use identify features of good quality suckers Activity: Organize the students in manageable groups to identify good	 should be able should be able Select tools, equipment and safety gears Select good quality suckers planting materials Select planting material varieties Observe safety precautions Select appropriate size and age of planting materials Store planting 	materials (Suckers) selected as per recommended crop husbandry practices	 Nowledge Evidence Detailed knowledge of: Method used: The student should be able to explain how to select quality suckers as planting materials Principles: The student should explain the principles of selecting quality planting materials Theories: The student should be able to explain: Good planting materials Quality suckers Preparation of suckers as planting materials Types of suckers Importance of 	 rife following tools, equipment, materials and safety gear are to be available: Overall Gloves Gum boots Machete /Panga Hand hoe Water Different types of suckers Crop field with suckers 	

Module Title					Assessment Cri	teria		Number
(Main Competence)	Unit Title (Specific Competences)	Elements (Learning Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Servic e Assessment	Knowledge Assessment	Training Requirements/ Suggested Resources	of Periods per Unit
			quality suckers in school premises or other relevant places	materials		 quality planting materials Uses of tools and equipment Circumstantial knowledge: Detailed knowledge about safe precautions in using good quality suckers as a planting material 		
		(c) Identify features of good quality cuttings	Brainstorm: Guide the students to list different types and features of good quality cuttings Practical work: Guide the students to examine different features of good quality cuttings from different types of cuttings Activity: Organize the students in manageable groups to identify features of good quality cuttings from different types of cutting in school	 The student should be able to: Select appropriate size and age of planting materials Identify features of good quality cuttings Select tools, materials and safety gears Clean planting materials Remove unwanted 	Features of good quality cuttings identified and established as per recommended crop husbandry practices	 Knowledge Evidence Detailed knowledge of: Method used: The student should be able to explain how to select quality cuttings as planting materials Principles: The student should explain the principles of selecting quality planting materials Theories: The student should be able to explain: Good planting materials Cuttings Preparation of 	 The following tools, equipment, materials and safety gear are to be available: Machete / panga Overall Gloves Gum boots Different type of cuttings with quality and poor-quality ones Pen Note book Secateurs Reference book 	

Module Title				Assessment Criteria				Number
(Main Competence)	Unit Title (Specific Competences)	Elements (Learning Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Servic e Assessment	Knowledge Assessment	Training Requirements/ Suggested Resources	of Periods per Unit
		(d) Identify	premises or at any other relevant place	 material (foreign) Observe safety precautions Store planting materials 	Eastures of	 planting materials Types of planting materials Importance of quality planting materials Uses of tools and equipment Circumstantial knowledge: Detailed knowledge about safe precautions in using good quality planting materials 	The following tools	
		features of good- quality vines	Guide the students to list different types and features of good quality vines Practical work: Guide the students to examine different features of good quality vines from different types of vines Activity: Organize the students in manageable groups to identify features of	 should be able should be able Select tools, equipment and safety gears Clean planting materials Remove unwanted material (foreign) Select good quality planting 	good quality vines as Planting materials identified as per recommended crop husbandry practices	 Detailed knowledge of: Method used: The student should be able to explain how to select quality vines as planting materials Principles: The student should explain the principles of selecting quality planting materials Theories: The student should be able to explain: Good planting 	 equipment, materials and safety gear are to be available: Overall Gloves Gum boots Mask Vines of different types with different features 	

Module Title					Assessment Criteria			Number
(Main Competence)	Unit Title (Specific Competences)	Elements (Learning Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Servic e Assessment	Knowledge Assessment	Training Requirements/ Suggested Resources	of Periods per Unit
			good quality vines from different types of vines in school premises or at any other relevant place	 materials Select planting material varieties Observe safety precautions Select appropriate size and age of planting materials Store planting materials 		 materials Quality Vines Preparation of planting materials Types of planting materials Importance of quality planting materials Uses of tools and equipment Circumstantial knowledge: Detailed knowledge about safe precautions in using good quality planting materials 		
		(e) Choosing quality planting Materials	Brainstorm: Guide the students to list different types and features of good quality planting materials Practical work: Guide the students to examine different features of good quality planting materials from different types of	 The student should be able to: Select planting material varieties Choose good quality planting materials Observe safety precautions 	Quality planting materials selected as per recommended crop husbandry practices	Knowledge Evidence Detailed knowledge of: Method used: The student should be able to explain how to select quality planting materials Principles: The student should explain the principles of selecting quality planting materials. Theories: The student	 The following tools, equipment, materials and safety gear are to be available: Overall Gloves Cap Gum boots Different types of planting materials of both good and poor quality Pen 	

Module Title				Assessment Criteria				Number
(Main Competence)	Unit Title (Specific Competences)	Elements (Learning Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Servic e Assessment	Knowledge Assessment	Training Requirements/ Suggested Resources	of Periods per Unit
			planting materials Activity: Organize the students in manageable groups to identify features of good quality vines from different types of planting materials in school premises or at any other relevant place	 Select appropriate size and age of planting materials Store planting materials 		 should be able to explain: Good planting materials Preparation of planting materials Types of planting materials Importance of quality planting materials Uses of tools and equipment Circumstantial knowledge: Detailed knowledge about safe precautions in using good quality planting materials 	Note book	
	1.3 Performing seed sowing	(a) Performin g broadcasti ng sowing	Brainstorm: Guide the students to identify different types of field crop seeds relevant to broadcasting Identify different tools and equipment for field crop seed broadcasting Consideration of	 The student should be able to: Select working tools, equipment and safety gear Broadcast seeds 	Sowing of field crop seeds by broadcasting performed according to laid down standards	Knowledge Evidence Detailed knowledge of: Method used: The student should be able to explain how to sow seeds in different techniques Principles: The student should explain principles involved in	 The following tools, equipment, materials and safety gear are to be available: Appropriate seeds for broadcasting Broadcasting machines / equipment, Overalls Ropes, 	100
Module Title					Assessment Cri	teria	Tanining Dequirements/	Number
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(Main Competence)	Unit Title (Specific Competences)	Elements (Learning Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Servic e Assessment	Knowledge Assessment	Training Requirements/ Suggested Resources	of Periods per Unit
			estimating seed rate when performing broadcasting Practical work: Guide the students on how to use / handle tools and equipment for field crop seeds broadcasting and estimating seed rate Activity: Organize the students in manageable groups to perform seed broadcasting in school premises or another relevant	 properly Observe safety precaution Clean the tools, equipment Store the tools and equipment at a safe dry place 		sowing seeds Theories: The student should explain: • Sowing spacing • Sowing depth • Broadcasting method • Drilling method • Dibbling method • Dibbling method • Types of seeds • Seed sowing techniques • The importance of using quality seeds Circumstantial knowledge: Detailed knowledge about safe handling and use of seeds	 Pegs Containers for carrying seeds Gum boots 	
		(b) Performin g drilling	Brainstorm: Guide the students to list and identify different types of seeds appropriate for drilling, Identify different tools and equipment for drilling Practical work:	 The student should be able to: Select field crop seeds for drilling Select working tools, materials and equipment 	Sowing by drilling method performed according to laid down crop husbandry practices	Knowledge Evidence Detailed knowledge of: Method used: The student should be able to explain how to sow seeds in different techniques Principles: The student should explain principles involved in	The following tools, equipment, materials and safety gear are to be available: • Tractor • Seeding machines • Field crop seeds for drilling • Ropes • Containers • Hand hoes	

Module Title					Assessment Cri	teria	Tuilin During (Number
(Main Competence)	Unit Title (Specific Competences)	Elements (Learning Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Servic e Assessment	Knowledge Assessment	Training Requirements/ Suggested Resources	of Periods per Unit
			Guide the students on how to use / handle tools, materials and equipment for seed drilling, Calculating or estimating seed rate Activity: Organize the students in manageable groups to perform seed drilling in school premises or other relevant places	 Perform seed drilling Select safety gear Observe safety precaution Clean the tools, equipment Store the tools and equipment at a safe dry place 		 sowing seeds Theories: The student should explain: Drilling method Types of seed varieties Seed sowing techniques The importance of using good seeds Circumstantial knowledge: Detailed knowledge about sowing seed by drilling method 	 Planters Overalls Pegs Gum boots 	
		(c) Performin g dibbling	Brainstorm: Guide the students to list and identify different types of field crop seeds appropriate, List and identify different tools, materials and equipment for seed dibbling Practical work: Guide the students on how to use / handle tools, materials and equipment for field	The student should be able to: • Select working tools, equipment and safety gear • Sowing spacing • Sowing depth • Observe safety precaution • Clean the	Sowing methods conducted according to laid down standards	Knowledge Evidence Detailed knowledge of: Method used: The student should be able to explain how to sow seeds in different techniques Principles: The student should explain principles involved in sowing seeds Theories: The student should explain: • Sowing spacing • Sowing depth	The following tools, equipment, materials and safety gear are to be available: • Seeds for dibbling • Dibber • Hand hoes • Marked ropes • Planters • Overalls • Pegs • Trays • Gum boots	

Module Title Elements Successful Teaching Asse			Assessment Cri	teria		Number		
(Main Competence)	Unit Title (Specific Competences)	Elements (Learning Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Servic e Assessment	Knowledge Assessment	Training Requirements/ Suggested Resources	of Periods per Unit
			crop seed dibbling, broadcasting, Calculating or estimating seed rate Activity: Organize the students in manageable groups to perform seed dibbling in school premises	 tools, equipment Store the tools and equipment at a safe dry place 		 Dibbling method Types of seed varieties Seed sowing techniques Circumstantial knowledge: Detailed knowledge sowing seeds under dibbling method 		
	1.4 Performing planting of crop materials	(a) Performin g planting of vines	Brainstorm: Guide the students to identify different types of planting vines material Identify different tools and equipment used for planting of vines List crops planted by using vine materials Practical work: Guide the students on how to use / handle tools and equipment used in planting vine Activity: Organize the students in manageable groups	 The student should be able to: Organize working tools, equipment and safety gear Planting vine by recommended spacing Planting depth Treat planting materials Observe safety precaution Clean tools, equipment Store tools and equipment at a safe dry place 	Planting of crop materials as per the recommended crop husbandry practices.	 Knowledge Evidence Detailed knowledge of: Method used: The student should be able to explain how to plant different types of vine crop materials Principles: The student should explain the principles involved in applying different methods of planting vine materials Theories: The student should explain: Types of vine planting materials Planting spacing Planting depth 	The following tools, equipment, materials and safety gear are to be available: • Planting materials • Hand hoes • Marked ropes • Overalls • Pegs • Trays • Overalls • Gum boots • Bush knives • Agrochemicals	130

Module Title Linit Title Ele		Elements Suggested Teaching			Assessment Cri	teria	Tanining Deminstration	Number
(Main Competence)	Unit Title (Specific Competences)	Elements (Learning Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Servic e Assessment	Knowledge Assessment	Training Requirements/ Suggested Resources	of Periods per Unit
			and identify and plant vines material			 The Procedures for planting vine materials Circumstantial knowledge Detailed knowledge about safe handling and use of vine planting materials 		
		(b) Performin g planting of sucker	Brainstorm: Guide the students to list and identify different types of suckers appropriate for planting, Identify different tools and equipment required for sucker planting Practical work: Guide the students on how to use / handle tools and equipment for sucker planting, Calculating or estimating number of suckers required per area, sucker's treatment before planting	The student should be able to: • Organize working tools, equipment and safety gear • Planting spacing • Planting depth • Treat planting materials • Observe safety precaution • Clean tools, equipment • Store tools and equipment at a safe dry place	Planting of crop materials as per the recommended crop husbandry practices.	 Knowledge Evidence Detailed knowledge of: Method used: The student should be able to explain how to plant different types of sucker materials Principles: The student should explain the principles of planting suckers Theories: The student should explain: Types of sucker as a planting material Planting spacing Planting depth The procedures for planting suckers The Procedures 	 The following tools, equipment, materials and safety gear are to be available: Suckers as planting materials Hand hoes Marked ropes Overalls Pegs Overalls Gum boots Machete /Bush knives Agrochemicals 	

Module Title					Assessment Cri	teria		Number
(Main Competence)	Unit Title (Specific Competences)	(Learning Activities) Activities	Suggested Teaching and Learning Methods	Process Assessment	Product/Servic e Assessment	Knowledge Assessment	Suggested Resources	of Periods per Unit
		(c) Performin g planting of bulbils	Activity: Organize the students in manageable groups to perform planting suckers in school premises or other relevant area Group discussion: Guide the students to list and identify different bulb planting material List the crops planted by using bulb material Criterial to consider when planting bulb as planting material Practical work: Guide the students on how to use / handle tools and equipment for planting bulb as planting material	The student should be able to: • Organize working tools, equipment and safety gears • Planting spacing • Planting depth • Treat planting materials • Observe safety precaution • Clean tools, equipment • Store tools and equipment at a	Planting of bulb materials as per the recommended crop husbandry practices	for planting suckers Importance of proper planting of sucker Circumstantial knowledge Detailed knowledge about sucker planting material Knowledge Evidence Detailed knowledge of: Method used: The student should be able to explain how to plant different types of bulb materials Principles: The student should explain the principles of planting bulb as a planting material Theories: The student should explain: Types of different bulbils plants Planting spacing	The following tools, equipment, materials and safety gear are to be available: • bulb crop planting materials • Hand hoes • Marked ropes • Overalls • Pegs • Overalls • Gum boots • Machete /Bush knives • Agrochemicals	
			Activity: Organize the students in manageable groups	safe dry place		 Planting depth The Procedures for planting bulbils Importance of 		

Module Title					Assessment Cri	teria		Number
(Main Competence)	Unit Title (Specific Competences)	Elements (Learning Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Servic e Assessment	Knowledge Assessment	Training Requirements/ Suggested Resources	of Periods per Unit
			to perform planting the bulbil crop by using bulb as a planting material			proper planting Circumstantial knowledge Detailed knowledge about safe handling and use of bulbil as planting materials		
		(d) Performin g planting of tuber	Group discussion: Guide the students to identify different types of tuber Identify different tools and equipment for planting tuber crop Importance of planting tuber as a planting material Practical work: Guide the students on how to use / handle tools and equipment for planting of tuber Activity: Organize the students in manageable groups to perform fertilizer broadcasting in school premises	 The student should be able to: Organize working tools, equipment and safety gear Planting spacing Planting depth Treat planting materials Observe safety precaution Clean tools, equipment Store tools and equipment at a safe dry place 	Planting of tuber crop materials as per the recommended crop husbandry practices	 Knowledge Evidence Detailed knowledge of: Method used: The student should be able to explain how to plant different types of tuber materials Principles: The student should explain the principles of applying different methods of planting tubers Theories: The student should explain: Types of planting tuber materials Planting spacing Planting depth The procedures for planting tubers Importance of proper planting of 	The following tools, equipment, materials and safety gear are to be available: • Planting materials • Hand hoes • Marked ropes • Overalls • Pegs • Trays • Overalls • Gum boots • Bush knives Agrochemicals	

Module Title					Assessment Criteria			Number
(Main Competence)	Unit Title (Specific Competences)	Elements (Learning Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Servic e Assessment	Knowledge Assessment	Suggested Resources	of Periods per Unit
			P			tubers Circumstantial knowledge Detailed knowledge about Tuber as planting material		
		(e) Performin g planting of cuttings	Brainstorm: Guide the students to list and identify different types of field crops appropriate for cutting planting Practical work: Guide the students on how to use / handle tools, materials and equipment preparation and planting of cuttings, Calculating or estimating the number of cuttings required per area Activity: Organize the students in manageable groups to perform planting of cuttings in school	 The student should be able to: Organize working tools, equipment and safety gear Planting spacing Planting depth Treat planting materials Observe safety precaution Clean tools, equipment Store tools and equipment at a safe dry place 	Planting of cutting crops performed as per the recommended crop husbandry practices.	 Knowledge Evidence Detailed knowledge of: Method used: The student should be able to explain how to plant different types of crop materials Principles: The student should explain the principles of applying different methods of planting. Theories: The student should explain: Types of planting materials Planting spacing Planting depth The procedures for planting cuttings Importance of proper planting of cuttings Circumstantial 	 The following tools, equipment, materials and safety gear are to be available: Cutting planting materials Hand hoes Marked ropes Overalls Pegs Overalls Gum boots Machete / Bush knives Agrochemicals 	

Module Title		tle Elements	Suggested Teaching		Assessment Cri	teria	T	Number
(Main Competence)	Unit Title (Specific Competences)	Elements (Learning Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Servic e Assessment	Knowledge Assessment	Training Requirements/ Suggested Resources	of Periods per Unit
			premises or other relevant places			knowledge Detailed knowledge about safe handling and use of cutting planting materials		
2.0 Controlling pests	2.1 Controlling weeds	(a) Identifyin g types of weeds	Brainstorm: Guide the students to define the term weed. List types of weeds List and identify different tools, materials used in weed identification Practical work: Guide the students on different ways of weed identification and then arrange farm visit to identify kind of weeds around the school area Activity: Organize the students in manageable groups and prepare weed herbarium	 The student should be able to: Identify different types of weeds Select tools, materials and equipment for weed identification and collection Clean tools and equipment Observe safety precautions Store tools and equipment 	Weeds herbarium obtained	 Knowledge Evidence Detailed knowledge of: Method used: The student should be able to identify different types of weeds Principles: The student should explain the principles of weed identification Theories: The student should explain: Types of weeds species Major classes of weeds Life cycle of weeds Effect of weeds in crops Importance of weed identification 	 The following tools, equipment, materials and safety gear are to be available: Overalls Gum boots Hoes Different types of weeds Plant pressing board Smart phones with applications for plant identification Knives Plant collecting bags Herbarium Pen / pencil Note book 	151

Module Title					Assessment Criteria		Training Dequirements (Number
(Main Competence)	Unit Title (Specific Competences)	Elements (Learning Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Servic e Assessment	Knowledge Assessment	Training Requirements/ Suggested Resources	of Periods per Unit
		(b) Performin g cultural weed control	Brainstorm: Guide the students to define cultural weed control Identify different types tools, material used in cultural weed control List different method used in cultural weed control Practical work: Guide the students on how to control weed by using any of one method of weed	Assessment The student should be able to: • Identify methods of cultural weeds control • Select tools and equipment used in performing cultural weed control • Observe safety precautions • Store tools and equipment	Assessment Cultural weed control performed as per recommended crop husbandry practices	Assessment Detail knowledge about Weed identification Knowledge Evidence Detailed knowledge of: Method used: The student should be able to explain how to control weed under cultural method Principles: The student should explain the principles of cultural weed control Theories: The student should explain: Types of weeds species	The following tools, equipment, materials and safety gear are to be available: • Overalls • Gum boots • Hoes • Rakes • Mulching materials • A crop field	per Unit
			Activity: Organize the students in manageable groups and perform mulching as one among of cultural weed control method			 Major classes of weeds Life cycle of weeds Effect of weeds in crops Importance of weed control Tools and equipment used in weed control 		

Module Title	Assessment Criteria			Number				
(Main Competence)	Unit Title (Specific Competences)	Elements (Learning Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Servic e Assessment	Knowledge Assessment	Training Requirements/ Suggested Resources	of Periods per Unit
						Circumstantial knowledge: Detail knowledge about Cultural weed control		
		(c) Performin g biological weed control	Brainstorm: Guide the students to define biological weed control Identify different types tools, material used in biological weed control List different method used in biological weed control Explain merits and demerits of biological weed control Practical work: Guide the students on how to control weed by using any of one method of weed control Activity: Organize the students	 The student should be able to: Identify methods of cultural weeds control Select tools and equipment used in performing biological weed control Observe safety precautions Store tools and equipment 	Biological weed control performed as per recommended crop husbandry practices	 Knowledge Evidence Detailed knowledge of: Method used: The student should be able to explain how to control weed under biological method Principles: The student should explain the principles of biological weed control Theories: The student should explain: Types of weeds species Effect of weeds in crops Importance of biological weed control 	 The following tools, equipment, materials and safety gear are to be available: Overalls Gum boots Hoes Rakes Natural predators Pathogens Competitive plants to manage weed population 	

Module Title					Assessment Cri	teria		Number
(Main Competence)	Unit Title (Specific Competences)	Elements (Learning Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Servic e Assessment	Knowledge Assessment	Training Requirements/ Suggested Resources	of Periods per Unit
			in manageable groups and perform mulching as one among of cultural weed control method			knowledge: Detail knowledge about Biological weed control		
		(d) Performin g mechanica l weed control	Brainstorm: Guide the students to define mechanical weed control List different methods used in mechanical weed control Activity: Organize the students in manageable groups to perform tillage in farm area as one among of mechanical weed control	 The student should be able to: Identify types of weeds Select tools and equipment Clean tools and equipment Observe safety precautions Store tools and equipment 	Mechanical weed control performed as per recommended crop husbandry practices	 Knowledge Evidence Detailed knowledge of: Method used: The student should be able to explain how to control different types of weeds through mechanical control Principles: The student should explain the principles of mechanical weed control Theories: The student should explain: Types of weeds species Major classes of weeds Life cycle of weeds Effect of weeds in crops 	The following tools, equipment, materials and safety gear are to be available: • Overalls • Gum boots • Hand hoes • Tractors / power tillers	

Module Title					Assessment Cri	teria	Training Paguiroments/	Number
(Main Competence)	Unit Title (Specific Competences)	Elements (Learning Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Servic e Assessment	Knowledge Assessment	Training Requirements/ Suggested Resources	of Periods per Unit
						 Importance of mechanical weed control Circumstantial knowledge: Detail knowledge about Mechanical weed control 		
		(e) Performin g chemical weed control	Brainstorm: Guide the students to define chemical weed control List different methods of chemical weed control Advantage and disadvantage of chemical weed control Practical work: Guide the students on how to use / handle tools and equipment for performing chemical weed control Activity: Organize the students in manageable groups	The student should be able to: • Identify different types of herbicides • Select appropriate herbicide for the type of weeds to be controlled • Calculate doses for herbicide application • Select right tools, materials and equipment • Observe safety precautions	Chemical weed control performed as per recommended crop husbandry practices.	 Knowledge Evidence Detailed knowledge of: Method used: The student should be able to explain how to control different types of weeds by chemical method Principles: The student should explain the principles of chemical weed control Theories: The student should explain: Types of weeds species Major classes of weeds Life cycle of weeds 	The following tools, equipment, materials and safety gear are to be available: • Overall • Gum boots • Knapsack sprayers • Water • Herbicides • Boom sprayers • Field with weeds	

Module Title					Assessment Cri	teria		Number
(Main Competence)	Unit Title (Specific Competences)	Elements (Learning Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Servic e Assessment	Knowledge Assessment	Training Requirements/ Suggested Resources	of Periods per Unit
			to and perform chemical weed control in a given area	Store tools and equipment		 Effect of weeds in crops Importance of weed control Tools and equipment used in weed control Circumstantial knowledge: Detail knowledge about Chemical weed control 		
		(f) Performin g integrated weed manageme nt (IWM)	Brainstorm: Guide the students to list and identify different types of tools, materials, devices and equipment used to performing integrated weed management in field crops. List different weed that can be controlled by performing integrated weed management. Practical work:	 The student should be able to: Identify signs/sympto ms of crop diseases Identify type of crop diseases Apply integrated weed management practices Select tools and 	Integrated weed management control performed as per recommended crop husbandry practices.	 Knowledge Evidence Detailed knowledge of: Method used: The student should be able to explain how to control weed by applying IWM Principles: The student should explain the principles of IWM Theories: The student should explain: Different method used in controlling IWM Importance of 	The following tools, equipment, materials and safety gear are to be available: • Overalls • Gum boots • Caps • Knapsack sprayer/boom sprayer • Agrochemicals • Masks • Mulching materials • Insect traps • Resistant /tolerant field crop varieties	

Module Title		T'd. El	Elements Suggested Teaching			Assessment Cri	teria	Training Paguiraments (Number
(Main Competence)	Unit Title (Specific Competences)	Elements (Learning Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Servic e Assessment	Knowledge Assessment	Training Requirements/ Suggested Resources	of Periods per Unit	
			Guide the students on how to use / handle tools and equipment /devices for integrated weed management Activity: Organize the students in manageable groups to perform integrated weed management in the field at school premises or other relevant places	 equipment Observe safety precautions Clean tools and equipment Store tools and equipment 		apply IWM Circumstantial knowledge Detailed knowledge about weed control by using IWM	 Crop field with insect pests Agricultural nets (agro nets) 		
	2.2 Controlling diseases	(a) Identifyin g crop diseases	Brainstorm: Guide the students to define the term crop diseases List different crop diseases occurred under field crop condition. Tools, materials, and method used to identify crop disease Practical work: Guide the students on how to use / handle tools and equipment for identifying crop	 The student should be able to: Select tools and equipment Identify signs/sympto ms of diseases Identify type of diseases Observe safety precautions Clean tools and 	Diseases identified and documented as per recommended guidelines	Knowledge Evidence Detailed knowledge of: Method used: The student should be able to explain how to control crop diseases Principles: The student should explain the principles of diseases control Theories: The student should explain: • Type of crop diseases • Signs/symptoms of field crop	 The following tools, equipment, materials and safety gear are to be available: Overalls Gum boots Caps Gloves Field crop farm with diseased plants Smart phone with disease diagnostic application Reference books 	151	

Module Title				Assessment Criteria				Number
(Main Competence)	Unit Title (Specific Competences)	Elements (Learning Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Servic e Assessment	Knowledge Assessment	Training Requirements/ Suggested Resources	of Periods per Unit
			diseases Activity: Organize the students in manageable groups and identify different crop diseases in a given area	equipment Store tools and equipment 		diseases Effects of diseases on crops Importance of diseases control Disposal of chemicals Circumstantial knowledge: Detailed knowledge about care in use of crops treated with chemicals		
		(b) Performin g cultural disease control	Brainstorm: Guide the students to define cultural disease control List tools, material used in controlling disease under cultural methods List different cultural disease control method Practical work: Guide the students on how to use / handle tools and equipment for controlling disease under cultural method	 The student should be able to: Select tools and equipment Identify signs/sympto ms of diseases Identify type of diseases Observe safety precautions Clean tools and equipment Store tools 	Cultural disease control performed as per recommended crop husbandry practices	Knowledge Evidence Detailed knowledge of: Method used: The student should be able to explain how to control crop diseases by cultural method Principles: The student should explain the principles of cultural diseases control Theories: The student should explain: • Types of crop diseases • Signs/symptoms of crop diseases	The following tools, equipment, materials and safety gear are to be available: • Overalls • Gum boots • Caps • Agrochemicals • Containers • Masks • Water • Gloves	

Module Title					Assessment Cri	teria		Number
(Main Competence)	Unit Title (Specific Competences)	Elements (Learning Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Servic e Assessment	Knowledge Assessment	Training Requirements/ Suggested Resources	of Periods per Unit
		(c) Performin	Activity: Organize the students in manageable groups and perform cultural disease control in school premises	and equipment	Biological	 Effects of diseases on crops Cultural disease control measures Importance of diseases control Disposal of chemicals Circumstantial knowledge: Detailed knowledge about care in use of crops treated with cultural method Knowledge Evidence 	The following tools	
		g biological disease control	Guide the students to define biological disease control Identify different types tools, material used in biological disease control List different method used in biological disease control Explain merits and demerits of biological disease control Practical work: Guide the students on	 should be able to: Identify methods of biological disease control Select tools and equipment used in performing biological disease control Observe safety precautions Store tools and equipment 	disease control performed as per recommended crop husbandry practices	Detailed knowledge of: Method used: The student should be able to explain how to control disease under biological method Principles: The student should explain the principles of biological disease control Theories: The student should explain: • Types of crop	 equipment, materials and safety gear are to be available: Overalls Gum boots Hoes Rakes Natural predators pathogens Competitive plants to manage weed population 	

Module Title				Assessment Criteria			Training Paguiroments/	Number
(Main Competence)	Unit Title (Specific Competences)	Elements (Learning Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Servic e Assessment	Knowledge Assessment	Training Requirements/ Suggested Resources	of Periods per Unit
			how to control crop disease by using any of one method of biological disease control Activity: Organize the students in manageable groups and perform biological disease control			diseases Types of biological agents used in biological disease control Effect of crop affected by disease Importance of biological disease control Circumstantial knowledge: Detail knowledge about Biological disease control		
		(d) Performin g mechanica l disease control	Brainstorm: Guide the students to list and identify different types of disease for mechanical control List and identify different tools, materials, devices, machines and equipment used in disease control by using mechanical method Practical work:	 The student should be able to: Select tools and equipment Identify signs/sympto ms of diseases Identify type of diseases Apply mechanical disease 	Mechanical disease control performed as per recommended crop husbandry practices	Knowledge Evidence Detailed knowledge of: Method used: The student should be able to explain how to control crop diseases through mechanical control method Principles: The student should explain the principles of mechanical disease control Theories: The student	The following tools, equipment, materials and safety gear are to be available: • Overalls • Gum boots • Caps • Barriers • Screen houses • Agriculture nets (agro nets)	

Module Title					Assessment Criteria			Number
(Main Competence)	Unit Title (Specific Competences)	Elements (Learning Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Servic e Assessment	Knowledge Assessment	Training Requirements/ Suggested Resources	of Periods per Unit
			Guide the students on how to use / handle tools, materials and equipment for mechanical diseases control Activity: Organize the students in manageable groups to performing mechanical control of disease in the field at school premises or at a different place	 control methods Observe safety precautions Clean tools and equipment Store tools and equipment 		 should explain: Types of crop diseases Signs/symptoms of crop diseases Effects of diseases on crops Mechanical disease control measures Importance of diseases control Circumstantial knowledge: Detailed knowledge about Disease spreading 		
		(e) Performin g chemical disease control	Brainstorm: Guide the students to list and identify different types of disease for chemical control List and identify different tools, materials, devices, machines and equipment used in disease control by using chemicals List and identify different chemicals	 The student should be able to: Identify signs/sympto ms of diseases Identify type of diseases Select appropriate chemical for the diseases Apply chemical 	Chemical disease control performed as per recommended crop husbandry practices	Knowledge Evidence Detailed knowledge of: Method used: The student should be able to explain how to control crop diseases through chemical disease control Principles: The student should explain the principles of chemical diseases control Theories: The student	The following tools, equipment, materials and safety gear are to be available: • Overalls • Gum boots • Caps • Masks • Knapsack sprayer/boom sprayer • chemicals • Masks • Water	

Module Title					Assessment Cri	teria		Number
(Main Competence)	Unit Title (Specific Competences)	Elements (Learning Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Servic e Assessment	Knowledge Assessment	Training Requirements/ Suggested Resources	of Periods per Unit
			used in pest control Practical work: Guide the students on how to use / handle tools and equipment for chemical application, Calculating or estimating chemical application doses Activity: Organize the students in manageable groups to performing chemical control of disease in the field at school premises or at a different relevant	 control Select right tools and equipment for the application of chemicals. Observe safety precautions Clean tools and equipment Store tools and equipment 		 should explain: Types of crop diseases Signs/symptoms of crop diseases Effects of diseases on crops Chemical disease control measures Importance of diseases control Safe disposal of chemicals and containers Circumstantial knowledge: Detailed knowledge about care in use of crops treated with chemicals 	 Gloves Measuring cylinders Weighing balance 	
		(f) Performin g Integrated Disease Managem ent (IDM)	Group discussion: Guide the students to list and identify different types of tools, materials, devices and equipment used to performing integrated disease management in field crops List diseases that can	The student should be able to: • Identify signs/sympto ms of crop diseases • Identify type of crop diseases • Apply	Integrated disease management control performed as per recommended crop husbandry practices.	Knowledge Evidence Detailed knowledge of: Method used: The student should be able to explain how to control diseases by using IDM methods Principles: The student should explain the principles of IDM.	The following tools, equipment, materials and safety gear are to be available: • Overalls • Gum boots • Caps • Knapsack sprayer/boom sprayer • Agrochemicals	

Module Title					Assessment Cri	teria		Number
(Main Competence)	Unit Title (Specific Competences)	Elements (Learning Activities)	and Learning Methods	Process Assessment	Product/Servic e Assessment	Knowledge Assessment	Training Requirements/ Suggested Resources	of Periods per Unit
			be controlled through integrated disease management approach Practical work: Guide the students on how to use / handle tools and equipment /devices for integrated disease management Activity: Organize the students in manageable groups to perform integrated disease management in the field at school premises or other relevant places	 integrated disease management practices Select tools and equipment Observe safety precautions Clean tools and equipment Store tools and equipment 		 Theories: The student should explain: Signs/symptoms of diseases Effects of insect pests on crops Importance of insect pest control Mechanical Integrated insect pest's management control Circumstantial knowledge Detailed knowledge about different IDM methods for controlling diseases 	 Masks Mulching materials Insect traps Resistant /tolerant field crop varieties Crop field with insect pests Agricultural nets (agro nets) 	
	2.3 Controlling insect pests	(a) Identifyin g the type of insect pests	Brainstorm: Guide the students to list and identify different types of insect pests affecting field crops Practical work: Guide the students on how to use / handle tools, materials and equipment for insect pest identification Activity:	 The student should be able to: Identify signs/sympto ms of insect pests Identify different types of field crop insect pests Select tools 	Insect pests identified, collected and documented	Knowledge Evidence Detailed knowledge of: Method used: The student should be able to explain how to control insect pests Principles: The student should explain the principles of insect pest control Theories: The student should explain:	The following tools, equipment, materials and safety gear are to be available: • Overalls • Gum boots • Caps • Plastic bags • Insect collecting boxes • Reference books • Different insect traps • Insect collection	151

Module Title					Assessment Cri	teria		Number
(Main Competence)	Unit Title (Specific Competences)	Elements (Learning Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Servic e Assessment	Knowledge Assessment	Training Requirements/ Suggested Resources	of Periods per Unit
			Organize the students in manageable groups to perform insect pest identification in the field at school premises or another relevant place	 and equipment for the identification of insect pests Observe safety precautions Clean tools and equipment Store tools and equipment 		 Signs/ different types of field crop insect pests Select tools and equipment for the identification of insect pests symptoms of insect pest attack Type of insect pests Effects of insect pests on crops Importance of insect pest control Circumstantial knowledge Detailed knowledge about insect pests' control in field crops 	 samples Plants with insect damage Smart phone with insect identification application 	
		(b) Performin g cultural control of insect pest	Brainstorm: Guide the students to list and identify different types of insect pests affecting field crops List method used in performing cultural control of insect pest Practical work: Guide the students on how to use / handle tools, materials and	 The student should be able to: Identify signs/sympto ms of crop pests Identify type of crop pests Select tools and equipment Observe 	Cultural control of insect pests performed as per crop husbandry practices	Knowledge Evidence Detailed knowledge of: Method used: The student should be able to explain how to control insect pests through cultural control Principles: The student should explain the principles of cultural insect pest	 The following tools, equipment, materials and safety gear are to be available: Overalls Gum boots Caps Masks Different materials for cultural control of insect pests Crop field 	

Module Title				Assessment Criteria				Number
(Main Competence)	Unit Title (Specific Competences)	Elements (Learning Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Servic e Assessment	Knowledge Assessment	Training Requirements/ Suggested Resources	of Periods per Unit
			equipment for Performing cultural control of insect pest Activity: Organize the students in manageable groups to perform insect pest identification in the field at school premises or another relevant place	safety precautions • Clean tools and equipment • Store tools and equipment		 control Theories: The student should explain: Signs/symptoms of insect pest attack Type of insect pests Effects of insect pests on crops Importance of insect pest control Cultural insect pests control Circumstantial knowledge Detailed knowledge about insect pests control in field crops 		
		(c) Performin g biological control of insect pests	Brainstorm: Guide the students to define biological control of insect pests, list and identify different types of insect pests relevant to biological control methods List and identify deferent biological agents appropriate for insect pest control List and identify tools, materials,	 The student should be able to: Select tools, materials, equipment and machines Select biological agents Identify types of insect pests relevant to biological control 	Biological control of insect pests performed as per crop husbandry practices	Knowledge Evidence Detailed knowledge of: Method used: The student should be able to explain how to control of insect pests by biological method Principles: The student should explain the principles of biological control of insect pests Theories: The student should explain:	The following tools, equipment, materials and safety gear are to be available: • Overalls • Gum boots • Caps • Biological agents • Cereals bran • Containers • Masks • Water • Crop field or storage facility with insect	

Module Title					Assessment Cri	teria		Number
(Main Competence)	Unit Title (Specific Competences)	Elements (Learning Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Servic e Assessment	Knowledge Assessment	Training Requirements/ Suggested Resources	of Periods per Unit
			equipment and machines required to apply biological agents for the insect pest control Practical work: Guide the students on how to use / handle tools, materials, devices and equipment to perform biological insect pest control, Calculating or estimating amount /doses of biological agents for application Activity: Organize the students in manageable groups to perform biological insect pest control to the field or to the storage facility in school premises or another relevant area	 Apply biological control to insect pests Observe safety precaution Clean tools and equipment Store tools and equipment 		 biological insect pest control method Signs of insect pest damage to field crops Types of insect pests Effects of insect pests on crops Importance of insect pests control Circumstantial knowledge: Detailed knowledge about biological control of insect pests 	 pests Weighing balance Measuring cylinders 	
		(d)	Demonstration:	The student	Mechanical	Knowledge Evidence	The following tools,	
		Performing	Snow students how to	snould be able	insect pest	Detailed knowledge	equipment, materials and	
		insect control	to remove or trap	• Identify	performed as	Method used: The	available.	
			insects effectively	- identify	per crop	student should be able	• Overalls	
			Brainstorm:	ms of crop	husbandry	to explain how to	Gum boots	
			Guide the students to	pests	practices.	control insect pests	Caps	

Module Title					Assessment Cri	teria		Number
(Main Competence)	Unit Title (Specific Competences)	Elements (Learning Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Servic e Assessment	Knowledge Assessment	Training Requirements/ Suggested Resources	of Periods per Unit
			list and identify different types of insect pests for mechanical control List and identify different tools, materials, devices, machines and equipment used in insect pests control by mechanical means List and identify insect pests that can be controlled by using mechanical means Group Discussions: Discuss the advantages, limitations, and environmental impact of mechanical control method Practical work: Guide the students on how to use / handle tools, materials and equipment for	 Identify type of crop pests Select appropriate chemical Select tools and equipment Observe safety precautions Clean tools and equipment Store tools and equipment 		mechanically Principles: The student should explain the principles of insect pest control Theories: The student should explain: • Signs/symptoms of insect pest attack • Type of insect pests • Effects of insect pests on crops • Importance of insect pest control • Mechanical insect pests control Circumstantial knowledge Detailed knowledge about mechanical insect control	 Mechanical traps Agricultural nets (Agro nets) Field crop farm for mechanical insect pest control Containers for insect pest collection Human resource for hand picking / destructing insect pests Light traps Sticky traps Row covers or barriers Manual insect collection tools (forceps, tweezers) Pheromone traps 	
			insect pests					

Module Title					Assessment Cri	teria	Training Requirements/ Suggested Resources	Number
(Main Competence)	Unit Title (Specific Competences)	Elements (Learning Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Servic e Assessment	Knowledge Assessment		of Periods per Unit
			Activity: Organize the students in manageable groups to performing mechanical control of insect pest in a field at school premises or at a different relevant site					
		(e) Performin g chemical control of insect pests	Brainstorm: Guide the students to define chemical control of insects, list and identify different types of insect pests for chemical control List and identify different tools, materials, devices, machines and equipment used in insect pests control by using chemicals List and identify different chemicals used in pest control Practical work: Guide the students on how to use / handle tools and equipment for chemical	 The student should be able to: Identify signs/sympto ms of crop pests Identify type of crop pests Select appropriate chemical Select tools and equipment Observe safety precautions Clean tools and equipment Store tools 	Chemical insect pest control performed as per crop husbandry practices	 Knowledge Evidence Detailed knowledge of: Method used: The student should be able to explain how to control insect pests by using the chemical Principles: The student should explain the principles of chemical insect pest control Theories: The student should explain: Signs/symptoms of insect pest attack Type of insect pests Effects of insect pests on crops Importance of insect pest control 	The following tools, equipment, materials and safety gear are to be available: Overalls Gum boots Caps Plastic/gunny bags Knapsack / boom sprayer Agrochemicals Masks Water Weighing balance Measuring cylinder Field crop farm for chemical control application	

Module Title					Assessment Cri	teria	T	Number
(Main Competence)	Unit Title (Specific Competences)	Elements (Learning Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Servic e Assessment	Knowledge Assessment	Training Requirements/ Suggested Resources	of Periods per Unit
			application, Calculating or estimating chemical application doses Activity: Organize the students in manageable groups to performing chemical control of insect pest in a field at school premises or at a different relevant site	and equipment		Chemically insect pests control Circumstantial knowledge Detailed knowledge about chemical insect pests control in field crops		
		(f) Performin g Integrated Pest Managem ent (IPM)	Brainstorm: Guide the students to define integrated pest management control of insects, list and identify different types of tools, materials, devices and equipment used to performing integrated pest management in field crops List pests that can be controlled by performing integrated pest management Demonstration : Show students how to	 The student should be able to: Identify signs/sympto ms of crop pests Identify type of crop pests Apply integrated pest management practices Identify pests and beneficial organisms in the field Monitor pest 	Integrated Insect pest management control performed as per recommended crop husbandry practices	 Knowledge Evidence Detailed knowledge of: Method used: The student should be able to explain how to control insect pests under IPM Principles: The student should explain the principles of insect pest control under IPM Theories: The student should explain: Signs/symptoms of insect pest attack Types of insect pests Effects of insect 	The following tools, equipment, materials and safety gear are to be available: • Overalls • Gum boots • Caps • Knapsack sprayer/boom sprayer • Agrochemicals • Masks • Water • Mulching materials • Insect traps • Resistant /tolerant field crop varieties • Crop field with insect pests	

Module Title		Assessment Criteria				teria		Number
(Main Competence)	Unit Title (Specific Competences)	Elements (Learning Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Servic e Assessment	Knowledge Assessment	Training Requirements/ Suggested Resources	of Periods per Unit
			combine cultural, biological, mechanical, and chemical pest control methods Practical work: Guide the students on how to use / handle tools and equipment /devices for integrated pest management control Activity: Organize the students in manageable groups to perform integrated pest management in the field at school premises or other relevant places	 populations using traps or field scouting Diagnose pest damage and determine thresholds Select appropriate control methods (cultural, biological, mechanical, or chemical) Apply biological agents such as predators or parasites Use mechanical methods to remove or exclude pests Apply pesticides judiciously, following IPM principles Evaluate the 		 pests on crops Importance of insect pest control Integrated pests management control Circumstantial knowledge Detailed knowledge about Iintegrated Pest Management (IPM) 	Agricultural nets (agro nets)	

Module Title					Assessment Cri	iteria		Number
(Main Competence)	Unit Title (Specific Competences)	Elements (Learning Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Servic e Assessment	Knowledge Assessment	Suggested Resources	of Periods per Unit
				effectivenes s of IPM methods • Record observations , actions, and outcomes in the IPM process				
	2.4 Controlling vertebrate pests	(a) Identifyin g types of vertebrate pests	Demonstration: Show students common vertebrate pests and their identifying features using specimens or images Brainstorm: Guide the students to define vertebrates, list and identify different types of vertebrate pests affecting field crops Practical work: Guide the students on how to use / handle tools, materials and equipment for vertebrate pest identification Activity:	 The student should be able to: Observe and record evidence of vertebrate pests in the field (e.g., droppings, tracks, burrows). Compare physical features of pests (e.g., size, shape, colour, teeth) using reference materials Identify 	Vertebrate pests identified, collected and documented	 Knowledge Evidence Detailed knowledge of: Method used: The student should be able to explain how to control vertebrate pests Principles: The student should explain the principles of vertebrate pest identification Theories: The student should explain: Signs/symptoms of vertebrate pest damage Types of vertebrate pests Effects of vertebrate pests on 	 The following tools, equipment, materials and safety gear are to be available: Overalls Gum boots Caps Plastic bags Insect collecting boxes Reference books Different vertebrate traps Plants /produce with vertebrate damage Smart phone with vertebrate identification application 	151

Module Title		Assessment Criteria				Number		
(Main Competence)	Unit Title (Specific Competences)	Elements (Learning Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Servic e Assessment	Knowledge Assessment	Training Requirements/ Suggested Resources	of Periods per Unit
			Organize the students in manageable groups to perform vertebrate pest identification in the field at school premises or another relevant place	 pests based on behaviour, damage, and habitat (e.g., burrowing, chewing, nesting) Use identificatio n keys to classify different vertebrate pests Record pest activities, such as feeding habits and signs of reproductio n Document pest presence and categorize them into species or groups Compare 		crops Importance of vertebrate pest control Circumstantial knowledge Detailed knowledge about vertebrate pests control in field crops		

Module Title				Assessment Criteria				Number
(Main Competence)	Unit Title (Specific Competences)	Elements (Learning Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Servic e Assessment	Knowledge Assessment	Training Requirements/ Suggested Resources	of Periods per Unit
		(b) Performin g cultural vertebrates control	Brainstorm: Guide the students to define cultural vertebrates control, list and identify different types of vertebrates relevant to cultural control methods List and identify tools, materials, equipment and machines required to perform cultural vertebrates' control Practical work:	 pests with known regional species lists Measure the extent of pest damage or presence Justify the identificatio n using evidence and cross- checking with guides pests The student should be able to: Select tools, materials, equipment and machines Identify types of vertebrate pests relevant to cultural control Perform cultural control to vertebrate 	Cultural control of Vertebrate pests performed as per crop husbandry practices	Knowledge Evidence Detailed knowledge of: Method used: The student should be able to explain how to control vertebrate pests by cultural method Principles: The student should explain the principles of cultural vertebrate pest control Theories: The student should explain: • Cultural	The following tools, equipment, materials and safety gear are to be available: • Overalls • Gum boots • Caps • Materials for cultural control of vertebrates • Cereals bran • Containers • Masks • Crop field or storage facility with vertebrate pests • Traps	

Module Title					Assessment Cri	iteria		Number
(Main Competence)	Unit Title (Specific Competences)	Elements (Learning Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Servic e Assessment	Knowledge Assessment	Training Requirements/ Suggested Resources	of Periods per Unit
			Guide the students on how to use / handle tools, materials and equipment to perform cultural vertebrates' control Activity: Organize the students in manageable groups to perform cultural vertebrates control to the field in school premises or another relevant area	 pests Observe safety precaution Clean tools and equipment Store tools and equipment 		 vertebrates control method Signs of vertebrate damage to field crops Types of vertebrate pests Control of birds Control of rodents Control of wild pigs Control of monkeys Effects of vertebrate pests control Importance of vertebrate pests control Circumstantial knowledge: Detailed knowledge about vertebrate pests control in field crops 		
		(c) Performin g	Brainstorm: Guide the students to	• The student should be able	Biological control of	Knowledge Evidence Detailed knowledge	The following tools, equipment, materials and	
		biological	define biological	to:	Vertebrate	OI: Mathed woods The	safety gear are to be	
		vertebrates	control of vertebrates,	• Select tools,	pests	student should be able	available:	
		control	different types of	materials, ,	performed as	to explain how to	• Overalls	
			vertebrates relevant	equipment and	busbandry	control vertebrate posts	• Gum boots	
			to biological control	macnines • Salact	practices	by biological method	• Caps	

Module Title					Assessment Cri	teria		Number
(Main Competence)	Unit Title (Specific Competences)	Elements (Learning Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Servic e Assessment	Knowledge Assessment	Training Requirements/ Suggested Resources	of Periods per Unit
			methods List and identify deferent biological agents appropriate for vertebrate control List and identify tools, materials, equipment and machines required to apply biological agents for the vertebrates' control Practical work: Guide the students on how to use / handle tools, materials, devices and equipment to perform biological vertebrates control, Calculating or estimating amount /doses of biological agents for application Activity: Organize the students in manageable groups to perform biological vertebrates control to the field or to the store in school premises or another relevant area	 biological agents Identify types of vertebrate pests relevant to biological control Apply biological control to vertebrate pests Observe safety precaution Clean tools and equipment Store tools and equipment 		 Principles: The student should explain the principles of biological vertebrate pest control Theories: The student should explain: biological vertebrates control method Signs of vertebrate damage to field crops Types of vertebrate pests Control of birds Control of rodents Control of wild pigs Control of Monkeys Effects of vertebrate on crops Importance of vertebrate pests control 	 Biological agents Cereals bran Containers Masks Water Crop field or storage facility with vertebrate pests Weighing balance Measuring cylinders 	

Module Title					Assessment Cri	teria		Number
(Main Competence)	Unit Title (Specific Competences)	Elements (Learning Activities)	and Learning Methods	Process Assessment	Product/Servic e Assessment	Knowledge Assessment	Suggested Resources	of Periods per Unit
		(d) Performin g mechanica l control of vertebrate pests	Brainstorm: Guide the students to define mechanical control of vertebrates, list and identify different types of vertebrates relevant to mechanical control methods List and identify tools, materials, equipment and machines required to perform vertebrates' control Practical work: Guide the students on how to use / handle tools, materials and equipment to perform mechanical vertebrates' control Activity: Organize the students in manageable groups to perform mechanical vertebrates control to the field or to the store in school premises or another relevant area	 The student should be able to: Select tools, materials, equipment and machines Identify types of vertebrate pests relevant to mechanical control Apply mechanical control to vertebrate pests Observe safety precaution Clean tools and equipment Store tools and equipment 	Mechanical control of Vertebrate pests performed as per crop husbandry practices	Knowledge Evidence Detailed knowledge of: Method used: The student should be able to explain how to control vertebrate pests by mechanical method Principles: The student should explain the principles of mechanical vertebrate pest control Theories: The student should explain: • mechanical vertebrates control method • Signs of vertebrate damage to field crops • Types of vertebrate pests • Control of birds • Control of wild pigs • Control of wertebrate on crops	The following tools, equipment, materials and safety gear are to be available: • Overalls • Gum boots • Caps • Cereals bran • Containers • Masks • Water • Crop field or storage facility with vertebrate pests • Various traps	

Module Title	Module Title			Assessment Criteria				Number
(Main Competence)	Unit Title (Specific Competences)	Elements (Learning Activities)	and Learning Methods	Process Assessment	Product/Servic e Assessment	Knowledge Assessment	Training Requirements/ Suggested Resources	of Periods per Unit
		(a) Parformin	Broinstorm	• The student	Chamical	 Importance of vertebrate pests control Circumstantial knowledge: Detailed knowledge about mechanical vertebrate pests control in field crops 	The following tools	
		(e) Performin g chemical control of vertebrate pests	Guide the students to define chemical control of vertebrates, list and identify different types of vertebrates relevant to chemical control methods List and identify deferent chemicals appropriate for vertebrate control List and identify tools, materials, equipment and machines required to apply chemicals for the vertebrates' control Practical work: Guide the students on how to use / handle	 The student should be able to: Select tools, materials, equipment and machines Identify types of vertebrate pests relevant to chemical control Apply chemical control to vertebrate pests Observe safety precaution Clean tools and equipment Store tools and 	control of vertebrate pests performed as per crop husbandry practices	 Nowledge Evidence Detailed knowledge of: Method used: The student should be able to explain how to control vertebrate pests by chemical method Principles: The student should explain the principles of chemical vertebrate pest control Theories: The student should explain: Chemical vertebrates control method Signs of vertebrate damage to field crops Types of vertebrate pests 	 The following tools, equipment, materials and safety gear are to be available: Overalls Gum boots Caps Chemicals /Poisons Cereals bran Containers Masks Water Crop field or store with vertebrate pests Weighing balance Measuring cylinders 	

Module Title	Assessment Criteria						Number	
(Main Competence)	Unit Title (Specific Competences)	Elements (Learning Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Servic e Assessment	Knowledge Assessment	Training Requirements/ Suggested Resources	of Periods per Unit
			tools, materials and equipment to perform chemical vertebrates control, calculating or estimating amount of chemical for application Activity: Organize the students in manageable groups to perform chemical vertebrates control to the field or storage facility in the school premises or another relevant area	equipment		 Control of birds Control of rodents Control of wild pigs Control of monkeys Effects of vertebrate on crops Importance of vertebrate pests control Circumstantial knowledge: Detailed knowledge about vertebrate pests control in field crops 		
		(f) Performin g integrated Pest Managem ent of Vertebrate	Demonstration: Show students how to implement integrated pest management strategies for vertebrate pests, including cultural, mechanical, biological, and chemical controls Field Visits: Take students to observe IPM practices in action on farms or	 The student should be able to: Identify signs/sympto ms of crop pests Identify type of crop pests Apply integrated pest management practices 	Integrated insect pest management control performed as per recommended crop husbandry practices	 Knowledge Evidence Detailed knowledge of: Method used: The student should be able to explain how to control insect pests Principles: The student should explain the principles of insect pest control Theories: The student should explain: Signs/symptoms of 	The following tools, equipment, materials and safety gear are to be available: • Overalls • Gum boots • Caps • Knapsack sprayer/boom sprayer • Agrochemicals • Masks • Water • Mulching materials	

Module Title					Assessment Cri	teria		Number
(Main Competence)	Unit Title (Specific Competences)	Elements (Learning Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Servic e Assessment	Knowledge Assessment	Training Requirements/ Suggested Resources	of Periods per Unit
			natural habitats where vertebrate pest management is used Brainstorm: Guide the students to define integrated pest management control of Vertebrate List and identify different types of tools, materials, devices and equipment used to performing integrated pest management in field crops List pests that can be controlled by performing integrated pest management Practical work: Guide the students on how to use / handle tools and equipment /devices for integrated pest management control Activity: Organize the students in manageable groups to perform integrated pest management in	 Select tools and equipment Observe safety precautions Clean tools and equipment Store tools and equipment 		 insect pest attack Type of insect pests Effects of insect pests on crops Importance of insect pest control Integrated insect pests management control Cultural insect pests control Biologically insect pests control Chemically insect pests control Circumstantial knowledge Detailed knowledge about Vertebrate pest control in field crops 	 Insect traps Resistant /tolerant field crop varieties Crop field with insect pests Agricultural nets (agro nets) 	
Module Title					Assessment Cri	teria		Number
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(Main Competence)	Unit Title (Specific Competences)	Elements (Learning Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Servic e Assessment	Knowledge Assessment	Training Requirements/ Suggested Resources	of Periods per Unit
			the field at school premises or other relevant places					
3.0 Managing water for field crops	3.1 Harvesting water	(a) Performin g surface water harvest	Visual Aids: Use diagrams, charts, or videos to explain the process of surface water harvesting and the different methods Brainstorm: Guide the students to define surface water harvesting, list and identify different types of tools, materials and equipment required to performing surface water harvesting. Practical work: Guide the students on how to use / handle tools, materials and equipment for surface water harvesting Activity: Organize the students in manageable groups to perform surface water harvesting in	 The student should be able to: Select tools and equipment Identify source of water Identify methods of water harvest Perform surface water harvesting Clean tools and equipment Store tools and instruments 	Surface water harvested as per recommended procedures	Knowledge Evidence Detailed knowledge of: Method used: The student should be able to explain how to harvest water Principles: The student should explain the principles of surface water harvesting Theories: The student should explain: • Surface water harvesting • Quality of water • Factors affecting surface water harvesting • Importance of water harvesting • Methods of water harvesting • Use of harvested water Circumstantial	 The following tools, equipment, materials and safety gear are to be available: Overall Gum boots Caps Water collecting facility Water storage facility Hoes plastic (polyethylene) or metal (galvanized iron) sheets Dam lining materials 	130

Module Title	Unit Title				Assessment Cri	teria	Training Requirements/ Suggested Resources	Number
(Main Competence)	Unit Title (Specific Competences)	Elements (Learning Activities)	and Learning Methods	Process Assessment	Product/Servic e Assessment	Knowledge Assessment		of Periods per Unit
			school premises or at other relevant place			knowledge: Detailed knowledge about safety precautions of water harvesting procedures		
		(b) Performin g undergrou nd water harvest	Brainstorm: Guide the students to define underground water harvesting, list and identify different types of tools, materials and equipment required to performing underground water harvesting Practical work: Guide the students on how to use / handle tools, materials and equipment for performing underground water harvesting Activity: Organize the students in manageable groups to perform underground water harvesting in school premises or at	 The student should be able to: Select tools and equipment Identify source of water Harvest underground water Identify methods of underground water harvest Clean tools and equipment Store tools and instruments 	Underground water harvested as per recommended procedures	Knowledge Evidence Detailed knowledge of: Method used: The student should be able to explain how to perform underground water harvest Principles: The student should explain the principles of water harvest Theories: The student should explain: • Underground water harvesting • Factors affecting underground water harvesting • Quality of water • Importance of water harvested water	The following tools, equipment, materials and safety gear are to be available: • Overall • Gum boots • Caps • Water pump • Pipes • Water collecting facilities • Water storage facilities	

Module Title					Assessment Cri	teria	Training Poquirements/	Number
(Main Competence)	Unit Title (Specific Competences)	Elements (Learning Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Servic e Assessment	Knowledge Assessment	Training Requirements/ Suggested Resources	of Periods per Unit
			another relevant place			knowledge: Detailed knowledge about safety precautions of underground water harvesting procedures Underground water harvesting rules and regulations		
		(c) Performin g roof water tapping	Brainstorm: Guide the students to define roof water tapping, list and identify different types of tools, materials and equipment required to performing roof water harvesting. Practical work: Guide the students on how to use / handle tools, materials and equipment for roof water tapping Activity: Organize the students in manageable groups to perform roof water tapping in school premises	 The student should be able to: Select tools, materials and equipment To prepare structure /facility for roof water tapping Identify methods of water harvest Clean tools and equipment Store tools and instruments 	Roof water tapping performed efficiently	Knowledge Evidence Detailed knowledge of: Method used: The student should be able to explain how to perform roof water harvesting Principles: The student should explain the principles of roof water harvesting Theories: The student should explain: • Roof water tapping • Factors affecting roof water tapping • Quality of water • Importance of	The following tools, equipment, materials and safety gear are to be available: • Overall • Gum boots • Rain • Roof gutters • Water collecting facilities • Water storage facilities	

Module Title		Title Elements S			Assessment Criteria		· · ·	Number
(Main Competence)	Unit Title (Specific Competences)	Elements (Learning Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Servic e Assessment	Knowledge Assessment	Training Requirements/ Suggested Resources	of Periods per Unit
						 water harvesting Use of harvested water Circumstantial knowledge: Detailed knowledge about safety precautions when performing roof water tapping 		
	3.2 Performing irrigation	(a) Performin g surface irrigation	Brainstorm: Guide the students to define surface irrigation, list different appropriate types of crops to surface irrigation, List and identify different features of surface irrigation system, identify tools, materials and equipment to perform surface irrigation Practical work: Guide the students on how to use / handle tools and equipment to prepare field for	 The student should be able to: Select tools and equipment Select crop for surface irrigation Apply surface irrigation Determine the amount of water Observe safety precaution. Clean the 	Surface irrigation performed as per laid down crop husbandry practices	Knowledge Evidence Detailed knowledge of: Method used: The student should be able to explain how to apply water to the plants Principles: The student should explain the principles of performing surface irrigation techniques Theories: The student should explain: Quality of irrigation water, Surface irrigation, Crop water	The following tools, equipment, materials and safety gear are to be available: • Overalls • Gloves • Gum boots • Caps • Hand hoes • Source of water • Water pump • Crop field to perform surface irrigation	170

Module Title Unit Title Eler				Assessment Cri	teria	Training Dequirements/	Number	
(Main Competence)	Unit Title (Specific Competences)	Elements (Learning Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Servic e Assessment	Knowledge Assessment	Training Requirements/ Suggested Resources	of Periods per Unit
			surface irrigation Activity: Organize the students in manageable groups to perform surface irrigation to the field	tools Store tools 		requirement, Irrigation frequency, Importance of irrigation Circumstantial knowledge: Detailed knowledge about safety precautions in water application		
		(b) Performin g sprinkler irrigation	Demonstration: Show students how to install and operate a sprinkler irrigation system Field Visits: Take students to observe sprinkler irrigation systems in action on farms or agricultural fields Group Discussions: Discuss the benefits, challenges, and components of sprinkler irrigation systems, such as water efficiency and uniformity Brainstorm:	 The student should be able to: Select tools and equipment Select crop for sprinkler irrigation Install sprinkler irrigation Operate and manage sprinkler irrigation system Determine the amount of water 	Sprinkler irrigation performed as per laid down crop husbandry practices	 Knowledge Evidence Detailed knowledge of: Method used: The student should be able to explain how to apply water through sprinkler irrigation Principles: The student should explain the principles of performing sprinkler irrigation techniques Theories: The student should explain: Quality of irrigation water Sprinkler irrigation Importance of 	The following tools, equipment, materials and safety gear are to be available: • Overalls • Gloves • Gum boots • Caps • Hand hoes • Water pump • Field area to be irrigated • Sprinkler irrigation system • Water source	

Module Title					Assessment Cri	teria		Number
(Main Competence)	Unit Title (Specific Competences)	Elements (Learning Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Servic e Assessment	Knowledge Assessment	Training Requirements/ Suggested Resources	of Periods per Unit
			Guide the students to define sprinkler irrigation, list different appropriate types of crops to sprinkler irrigation, List and identify different parts of sprinkler irrigation system, identify tools, materials and equipment to install sprinkler irrigation Practical work: Guide the students on how to use / handle tools and equipment to prepare field and install sprinkler irrigation system Activity: Organize the students in manageable groups to perform sprinkler irrigation installation and applying to the field	 Observe safety precaution. Clean the tools Store tools 		irrigation Circumstantial knowledge: Detailed knowledge about safe precautions in water application		
		(c) Performin g drip irrigation	Demonstration: Show students how to set up and operate a drip irrigation	The student should be able to: • Select tools	Drip irrigation installed and performed as per laid down	Knowledge Evidence Detailed knowledge of: Method used: The	The following tools, equipment, materials and safety gear are to be available:	
			system, explaining	machines	crop husbandry	student should be able	• Overalls	

Module Title					Assessment Cri	teria		Number
(Main Competence)	Unit Title (Specific Competences)	Elements (Learning Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Servic e Assessment	Knowledge Assessment	Training Requirements/ Suggested Resources	of Periods per Unit
			the components and their functions Field Visits: Take students to observe drip irrigation systems in action on farms or agricultural fields Group Discussions: Discuss the benefits, challenges, and components of drip irrigation, focusing on water conservation and efficiency Brainstorm Guide the students to define drip irrigation, list different appropriate types of crops to drip irrigation, List and identify different parts of irrigation system Identify tools, materials and equipment to install	 and equipment Select crop for drip irrigation Install drip irrigation system Operate drip irrigation system Observe safety precaution. Clean the tools Store tools 	practices	to explain how to apply water to the plants through drip irrigation Principles: The student should explain the principles of performing drip irrigation techniques Theories: The student should explain: Quality of irrigation water, Drip irrigation system, Crop water requirement Irrigation frequency, Importance of irrigation Circumstantial knowledge: Water use rights and water use efficiency in water application Detailed knowledge about Crop water requirement	 Gloves Gum boots Caps Water source Water pump Water reservoir Drip irrigation kit Materials for the installation of drip irrigation kit Field for the installation of drip irrigation system 	

Module Title					Assessment Cri	teria	Training Requirements/ Suggested Resources	Number
(Main Competence)	Unit Title (Specific Competences)	Elements (Learning Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Servic e Assessment	Knowledge Assessment		of Periods per Unit
			drip irrigation system Practical work: Guide the students on how to use / handle tools and equipment to prepare field and install drip irrigation system Activity: Organize the students in manageable groups to perform drip irrigation installation and applying to the field					
		(d) Performin g furrow irrigation	Brainstorm: Guide the students to define furrow irrigation, identify different appropriate types of crops to furrow irrigation, identify different tools, materials and equipment to performing furrow irrigation Demonstration : Show students how to set up and operate a furrow irrigation	 The student should be able to: Select appropriate crops to furrow irrigation, Select tools, materials and equipment to performing furrow irrigation, 	Furrow irrigation performed as per laid down crop husbandry practices	Knowledge Evidence Detailed knowledge of: Method used: The student should be able to explain how to apply water to the plants by furrow methods Principles: The student should explain the principles of performing furrow irrigation methods Theories: The student should explain:	 The following tools, equipment, materials and safety gear are to be available: Overalls Gloves Gum boots Caps Hand hoes Water source Water pump Field with furrows for furrow irrigation Hoe or plough for digging furrows Measuring tape or 	

Module Title				Assessment Criteria				Number
(Main Competence)	Unit Title (Specific Competences)	Elements (Learning Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Servic e Assessment	Knowledge Assessment	Training Requirements/ Suggested Resources	of Periods per Unit
			system, explaining the layout and water flow management Field Visits : Take students to a farm or agricultural field where furrow irrigation is being used to observe the system in action. Group Discussions : Discuss the advantages, challenges, and components of furrow irrigation, including water management and soil type considerations Practical work : Guide the students on how to use / handle tools and equipment to prepare field for furrow irrigation, how to convey and guide water for furrow irrigation Activity: Organize the students in manageable groups to perform furrow	 Select method of applying water Determine the amount of water Perform furrow irrigation Observe safety precaution Clean the tools Store tools 		Quality of irrigation water, Furrow irrigation, Crop water requirement, Irrigation frequency, Importance of irrigation Circumstantial knowledge: Detailed knowledge about safe precautions in water application	 marking tools for furrow spacing Shovels or rakes for smoothing furrow bottoms Irrigation gates or dam boards for controlling water flow Water source (e.g., pump, well, canal) Flow meter for measuring water flow Watering hoses or pipes (for water distribution) Soil moisture meter 	

Module Title					Assessment Cri	teria	Training Descriptions (Number
(Main Competence)	Unit Title (Specific Competences)	Elements (Learning Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Servic e Assessment	Knowledge Assessment	Training Requirements/ Suggested Resources	of Periods per Unit
			irrigation to the field					
		(e) Performin g basin/floo ding irrigation	Demonstration: Show students how to set up and operate a basin or flooding irrigation system, explaining the process of water distribution and management Field Visits: Take students to observe a basin or flooding irrigation system in use on a farm or agricultural field Group Discussions: Discuss the advantages and challenges of basin and flooding irrigation, such as water efficiency, crop needs, and soil type. Brainstorm: Guide the students to define basin / flooding irrigation, identify different types of crops	The student should be able to: Select crop for basin / flood irrigation, Select tools, materials and equipment to perform basin /flooding irrigation, Determine the amount of water required, Make a trench or other ways to convey water for basin / flooding irrigation, Convey and guide water for basin / flooding irrigation, observe safety precaution, Clean the tools, Store tools	Basin / flooding / irrigation performed as per laid down crop husbandry practices	Knowledge Evidence Detailed knowledge of: Method used: The student should be able to explain how to apply water to the plants through basin / flooding irrigation Principles: The student should explain the principles of performing basin / flooding irrigation technique Theories: The student should explain: Basin/Flooding irrigation, • Quality of irrigation water, • Crop water requirement, • Irrigation frequency • Importance of irrigation Circumstantial	The following tools, equipment, materials and safety gear are to be available: • Overalls • Gloves • Gum boots • Caps • Hand hoes • Water pump • Irrigation pipes, • Water sources • Field for irrigation • Soil moisture meter • Irrigation pumps	

Module Title		Unit Title Elements S			Assessment Cri	teria	Training Dequirer	Number
(Main Competence)	Unit Title (Specific Competences)	Elements (Learning Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Servic e Assessment	Knowledge Assessment	Training Requirements/ Suggested Resources	of Periods per Unit
			appropriate to basin /flooding irrigation, Identify different tools, materials and equipment for basin / flooding irrigation Practical work: Guide the students on how to use / handle tools and equipment to prepare field for basin / flooding irrigation, how to convey and guide water for basin / flooding irrigation Activity: Organize the students in manageable groups to perform basin / flooding irrigation to the field			knowledge: Detailed knowledge about flooding irrigation		

Form Three

Table 5: Detailed Contents for Form Three

					Assessment Criter	ia		
Module Title (Main Competence)	Unit Title (Specific Competences)	Elements (Learning Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Service Assessment	Knowledge Assessment	 Training Requirements/ Suggested Resources 	Number of Periods per Unit
1.0 Harvesting field crops	1.1 Determining maturity indices of various field crops	(a) Timing for harvesting field crops	Brainstorm: Guide the students to identify and define tools, materials, sources and device used to forecast weather condition Practical work: Guide the students on how to uses tools and devices for weather forecasting, Use of internet to gather information on weather forecast practices, observe the correct sign for proper harvesting season Activity: Organize the students in manageable groups to determine weather condition prior harvesting of field crops	 The student should be able to: Select weather forecasting tools Assess weather information Assess environmental weather condition Interpret weather data Determine the correct time for harvesting field crops 	Conducive Timing for harvesting field crops predicted	Knowledge Evidence: Detailed knowledge of: Method used: The student should be able to explain the importance of timing harvest of field crop Principles: The student should explain the principles of: • Weather forecast • Interpret weather data Theories: The student should explain: Importance of weather forecast Sources of weather data Precaution during bad weather condition Circumstantial	The following tools, equipment, materials and safety gear are to be available: • Overall • Gum boots • Hygrometer • Access to weather forecasting station • Smart phone with weather forecasting application	100

					Assessment Criter	ia		
Module Title (Main Competence)	Unit Title (Specific Competences)	Elements (Learning Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Service Assessment	Knowledge Assessment	Training Requirements/ Suggested Resources	Number of Periods per Unit
		(b) Determining maturity of field crops	Demonstration: Show students how to identify maturity signs in different field crops, such as colour change, texture, and seed development Field Visits: Take students to observe crops at various stages of growth to practice identifying maturity indicators in the field Brainstorm: Guide the students to identify and define maturity indices, identify and define tools, materials and device used in observing maturity features /signs for harvesting field crop	 The student should be able to: Select tools, materials and devices for determining maturity indices Describe tools, materials and devices Perform maturity determination Observe general signs of Crop Maturity (colour, size, moisture content) Observe safety precautions and equipment Clean tools Store tools and equipment 	Maturity of field crops determined and described	knowledge: Detailed knowledge about: weather forecast knowledge Evidence Detailed knowledge of: Method used: The student should be able to explain maturity features /signs for harvesting field crops Principles: The student should explain the principles of maturity determination in field crops, features /signs for maturity for field crop Theories: The student should explain: • Tools and equipment used in observing maturity features /signs for harvesting field	 The following tools, equipment, materials and safety gear are to be available: Field crop for maturity determination, Crop colour charts, Moisture Meters, Drying ovens, Refractor meter, Note books, Pens, Pencils, Weighing balance, Other approaches of maturity determination 	

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(Main	Unit Title (Specific	Elements (Learning	and Learning				Training Requirements/	of
Competence)	Competences)	Activities)	Methods	Process	Product/Service	Knowledge		Periods
				Assessment	Assessment	Assessment		per Onit
			Practical work:			crops		
			Guide the students on			 Signs for 		
			how to observe and			maturity indices		
			carry out maturity			• Importance of		
			determination			observing maturity indices		
			Activity:			before		
			Organize the students			harvesting field		
			in manageable groups			crops		
			of field crop before			Circumstantial		
			harvesting			knowledge		
						Detailed knowledge		
						about accurate sign		
						and feature to be		
						indices before		
						harvesting		
		(c) Performing	Brainstorm:	The student	Field status	Knowledge	The following tools,	
		analysis for	Guide the students to	should be able to:	determined and	Evidence:	equipment, materials	
		field crops	materials device used	• Explain tools	documented	of.	and safety gear are to be available.	
		neid erops	in performing	performing	documented	Method used: The	Machete,	
			analysis for	analysis for		student should be	• Gumboot,	
			harvesting field crops	harvesting field		able to explain the	• Overall	
			Demonstration: Show students how to	crops		importance of performing analysis	• Cap	
			perform a thorough	• Explain procedure for		for harvesting field	Note book Don / noncil	
			analysis of field crops	performing		crops	Pen / pench Drone	
			before harvest,	analysis for		Principles: The	 Field crop farm 	
			including checking	harvesting field		student should	for analysis	

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Module Title (Main Competence)	Unit Title (Specific Competences)	Elements (Learning Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Service Assessment	Knowledge Assessment	- Training Requirements/ Suggested Resources	Number of Periods per Unit
			for maturity signs, moisture content, and quality indicators Practical work: Guide the students on how to use tools, material and devices used in performing analysis for harvesting field crops Activity: Organize the students in manageable groups to performing analysis for harvesting field crops	 crops Status of the crop Size of the harvest work Field condition for harvesting Explain importance of performing analysis for harvesting field crops Advantage and Disadvantage of performing analysis for harvesting field crops 		explain the principles of: Performing analysis for harvesting field crops Theories: The student should explain: Importance of performing analysis for harvesting field crops Circumstantial knowledge: Detailed knowledge about: Interpretation of analysis for harvesting field crops	Digital camera or smartphone	
	1.2 Estimating crop yield	(a) Performing yield estimation by observation	Brainstorm: Guide the students to identify, define, tools, materials, device used to perform yield estimation by observation Practical work: Guide the students on procedure for	 The students should be able to: Select tools and equipment used in performing yield estimation by observation Select an area which is a representative of the farm 	Crop yield estimated by observation method as per laid down procedure	Knowledge Evidence Detailed knowledge of: Method used: The student should be able to explain crop- specific indicators used to estimate yield by observation Principles: The	 The following tools, equipment, materials and safety gear are to be available: Tape measure Weighing balance Pegs Note books Pens Pencils Calculator 	120

					Assessment Criter	ia		
Module Title (Main Competence)	Unit Title (Specific Competences)	Elements (Learning Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Service Assessment	Knowledge Assessment	Training Requirements/ Suggested Resources	Number of Periods per Unit
			performing yield estimation by observation Activity: Organize the students in manageable groups to perform yield estimation by observation	 Explain crop-specific indicators Assess plant population Observe safety precautions and equipment Clean tools Store tools and equipment 		student should explain the principles of estimating yield of a given crop by observation Theories: The student should explain: Tools and equipment used in yield estimation The procedures for yield estimation by observation Importance of estimating yield of a given crop Circumstantial knowledge Detailed knowledge about Farm field variation		
		(b) Performing yield estimation by random quadrant method	Brainstorm: Guide the students to identify, define, tools, materials, device and list the features/indicators used to performing yield estimation by random quadrant	The student should be able to: • Select tools and equipment used in performing yield estimation by random quadrant method • Perform random	Yield of a given crop estimated by quadrant method as per laid down procedure	Knowledge Evidence Detailed knowledge of: Method used: The student should be able to explain how to estimate yield of a given crop by	The following tools, equipment, materials and safety gear are to be available: • Quadrant • Calculator • Tape measure • Weighing balance • Field crop to	

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Module Title (Main Competence)	Unit Title (Specific Competences)	Elements (Learning Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Service Assessment	Knowledge Assessment	 Training Requirements/ Suggested Resources 	Number of Periods per Unit
		(c) Performing	method. List field crops appropriate to perform yield estimation by random quadrant Practical work: Guide the students on procedure to perform yield estimation by random quadrant method Activity: Organize the students in manageable groups to perform yield estimation by random quadrant method	 quadrat yield estimation Taking samples at different location in the field Calculate yield estimates of the whole farm Observe safety precautions and equipment Clean tools Store tools and equipment 	Field crop yield	quadrant methodPrinciples: Thestudent shouldexplain the principlesof estimating yield ofa given crop byrandom quadratmethodTheories: Thestudent shouldexplain:Tools andequipment used inyield estimation byquadrant methodThe procedures foryield estimationYield estimation byquadrant methodImportance ofestimating yield of agiven cropCircumstantialknowledgeDetailed knowledgeaboutFarm field conditionsduring harvesting	estimate yield Pegs Note book Pens Pencils Gum boots Overalls Caps The following tools	
		(c) Performing	Brainstorm:	ine student	Field crop yield	Knowledge	The following tools,	
		yield	Guide the students to	should be able to:	estimated by	Evidence	equipment, materials	
		estimation	identity, define, tools,	 Select proper 	remote sensing	Detailed knowledge	and safety gear are to be	

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Module Title (Main Competence)	Unit Title (Specific Competences)	Elements (Learning Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Service Assessment	Knowledge Assessment	Training Requirements/ Suggested Resources	Number of Periods per Unit
		by remote sensing	materials, device used in estimating yield by remote sensing List and identify crop feature in determine crop yield by using remote sensing Practical work: Guide the students on step by step procedure of estimate yield through remote sensing method Activity: Organize the students in manageable groups to performing yield estimate through remote sensing	 devices used in remote sensing Set procedure used in estimating yield by remote sensing Estimate yield by remote sensing Observe safety precautions and equipment Clean tools Store tools and equipment 	method	of: Method used: The student should be able to explain how to estimate yield of a given crop by remote sensing method Principles: The student should explain the principles of estimating yield of a given crop by remote sensing Theories: The student should explain: Tools, devices and equipment used in yield estimation by remote sensing The procedures for yield estimation by remote sensing Importance of estimating yield by using remote sensing method Circumstantial knowledge Detailed knowledge about advanced	available: Calculator Field map Note books Pens Pencils Gum boots Overalls Caps Camera Drones Computer and internet access	

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Module Title (Main Competence)	Unit Title (Specific Competences)	Elements (Learning Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Service Assessment	Knowledge Assessment	 Training Requirements/ Suggested Resources 	Number of Periods per Unit
						technologies of yield estimation		
	1.3 Harvest different field crops	(a) Harvesting legumes	Demonstration: Show students how to identify the right time to harvest legumes by observing plant maturity, pod colour, and seed firmness. Field Visits: Take students to observe fields of legumes at various stages of maturity to practice identifying readiness for harvest Brainstorm: Guide the students to identify, define, tools, materials, used in harvesting legumes Practical work: Guide the students on how to use tools and materials in harvesting legumes. Activity: Organize the students in manageable groups to harvest legumes	 The students should be able to: Select tools, equipment and machines for legume harvesting Harvest legumes Picking mature pods selectively Uprooting the whole plant and collecting it to one point of all mature pods Collection of harvested pods / plants Observe safety precaution Clean the tools and equipment Store the tools and equipment 	Legume crop harvested as per crop husbandry practices	Knowledge Evidence Detailed knowledge of: Method used: The student should be able to explain how to harvest legume crops Principles: The student should explain the principles of harvesting legume field crops. Theories: The student should explain: equipment, materials and tools required for harvesting legume crops, Methods of harvesting different legume crops, Characteristics of mature legume crops Circumstantial knowledge:	The following tools, equipment, materials and safety gear are to be available: • Overalls • Gum boots • Caps • Plastic/gunny bags • Containers • Mat / plastic sheet • Baskets	170

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Module Title (Main Competence)	Unit Title (Specific Competences)	Elements (Learning Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Service Assessment	Knowledge Assessment	 Training Requirements/ Suggested Resources 	Number of Periods per Unit
						Detailed knowledge about Handling of mature legume crops. Efficiency of legume harvesting methods		
		(b) Harvesting cereals	Demonstration: Show students how to identify the right time to harvest cereals, focusing on signs such as the change in colour of grains, plant drying, and the texture of the crop Field Visits: Take students to cereal fields at different growth stages to observe when crops are ready for harvest Brainstorm: Guide the students to identify, define, tools, materials, used in harvesting cereals Practical work: Guide the students on how to use tools and materials in harvesting cereals Activity:	 The student should be able to: Select tools, equipment and machines used in harvesting cereal crop Cut the panicles Harvesting individual cob Cutting stems and collecting at one point Pack the harvested cereal crop Observe safety precaution Clean the tools and equipment Store the tools and equipment 	Cereal crop harvested as per crop husbandry practices	Knowledge Evidence Detailed knowledge of: Method used: The student should be able to explain how to harvest cereal crops Principles: The student should explain the principles of harvesting cereal crops Theories: The student should explain: equipment, materials and tools for harvesting cereal crop, Methods harvesting different cereal crops Characteristics of	The following tools, equipment, materials and safety gear are to be available: • Gum boots • Overalls • Caps • Plastic/gunny bags • Containers • Mats / plastic sheet • Baskets • Sickles / knives	

Module Title		Elements Suggested Teachi			Assessment Criter	ia	Training Requirements/	Number
(Main Competence)	(Specific Competences)	(Learning Activities)	and Learning Methods	Process Assessment	Product/Service Assessment	Knowledge Assessment	Suggested Resources	of Periods per Unit
		(c) Harvesting root and tuber crops	Organize the students in manageable groups to harvest cereals crop around the school Brainstorm: Guide the students to identify, define, tools, materials, used in harvesting root and tuber crops Demonstration: Show students how to harvest root and tuber crops without damage the produce Practical work: Guide the students on how to use tools and materials in harvesting root and tuber crops Activity: Organize the students in manageable groups to harvest root and tuber crops	 The student should be able to: Select tools, equipment and machines Safe uproot tubers and roots Cut the stem and heads, where applicable Collect harvested roots and tubers and put them under shade Pack the harvested roots and tubers Mention immediate after harvest 	Root and tuber crops harvested as per crop husbandry practices	mature cereal crops Care in harvesting cereal crops Circumstantial knowledge: Detailed knowledge about Handling of mature cereal crops Knowledge Evidence Detailed knowledge of: Method used: The student should be able to explain how to harvest root and tuber crops Principles: The student should explain the principles of harvesting root and tuber crops Theories: The student should explain the principles of harvesting root and tuber crops Theories: The student should explain the principles of harvesting root and tuber crops Theories: The student should explain: equipment, materials and tools required to harvest root and tuber crops	The following tools, equipment, materials and safety gear are to be available: • Overalls • Gum boots • Caps • Plastic/gunny bags • Knives • Hand hoes • Containers • Mats/plastic sheet • Baskets • Fork hoes • Machete	

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Module Title (Main Competence)	Unit Title (Specific Competences)	Elements (Learning Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Service Assessment	Knowledge Assessment	Training Requirements/ Suggested Resources	Number of Periods per Unit
				 practices Observe safety precaution Clean the tools and equipment Store the tools and equipment 		Methods of harvesting different types of root and tuber crops Circumstantial knowledge: Detailed knowledge about Characteristics of mature root and tuber crops, handling of mature root and tubers crops		
		(d) Harvesting fibre crops	Brainstorm: Guide the students to identify, define, tools, materials, used in harvesting fibre crops Practical work: Guide the students on how to use tools and materials in harvesting fibre crops Activity: Organize the students in manageable groups to performing fibre crop harvesting	 The student should be able to: Select tools, materials and machines for fibre harvesting Cut the leaf for sisal harvesting Hand pluck cotton bolls for cotton Pack harvested fibre crop to relevant material Observe safety 	Fibre crops harvested as per crop husbandry practices	Knowledge Evidence Detailed knowledge of: Method used: The student should be able to explain how to harvest fibre crops Principles: The student should explain the principles of harvesting fibre crops Theories: The student should explain: Equipment,	The following tools, equipment, materials and safety gear are to be available: • Overalls • Gum boots • Caps • White gunny bags • knives • Mat/plastic sheet • Machete	

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Module Title (Main Competence)	Unit Title (Specific Competences)	Elements (Learning Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Service Assessment	Knowledge Assessment	Training Requirements/ Suggested Resources	Number of Periods per Unit
		(e) Harvesting oil crops	Brainstorm: Guide the students to identify, define, tools, materials, used in harvesting oil crops Practical work: Guide the students on how to use tools and materials in harvesting oil crops Activity: Organize the students in manageable groups to perform harvesting of oil crops	 precaution Clean the tools and equipment Store the tools and equipment Store the tools and equipment The student should be able to: Select tools, equipment and machines Uprooting the whole mature plant (peanut) Cutting the stem of mature plant (sesame), Cutting the head of the plant (Sunflower) Cutting fresh mature fruit 	Oil crop harvested as per crop husbandry practices	materials and tools required for harvesting fibre crops Methods used to harvest different types of fibre crops Circumstantial knowledge: Detailed knowledge about Requirements and characteristic of mature fibre crops Knowledge Evidence Detailed knowledge of: Method used: The student should be able to explain how to harvest oil crops Principles: The student should explain the principles of harvesting oil crops Theories: The student should explain: Equipment,	The following tools, equipment, materials and safety gear are to be available: • Overalls • Gum boots • Caps • Plastic/gunny bags • Sickles/knives • Mats / plastic sheet • Baskets • Machete • Ladder • Coconut plucker / picker	

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Competence)	(Specific	(Learning	Methods	Drocoss	Droduct/Service	Knowledge	Suggested Resources	Periods
1 /	Competences)	Activities)	1.10000	Assessment	Assessment	Assessment		per Unit
				715565511011	7 issessment			
				bunch (Oil		materials and tools		
				palm)		Methods of		
				Picking		harvesting different		
				individual		types of oil crops		
				fruits (coconut)		Circumstantial		
				Collecting nuts		knowledge:		
				(cashew nut)		Detailed knowledge		
				• Harvesting		about oil crop		
				mature oil crop		production		
				• Pack the				
				harvested oil				
				crops				
				• Observe salety				
				Clean the tools				
				and equipment				
				Store the tools				
				and equipment				
		(f) Harvesting	Brainstorm:	The student	Beverage crop	Knowledge	The following tools,	
		beverage	Guide the students to	should be able to:	harvested as per	Evidence	equipment, materials	
		crops	identify, define, tools,	• Select tools,	crop husbandry	Detailed knowledge	and safety gear are to be	
			materials, used in	materials,	practices	of:	available:	
			harvesting beverage	equipment and		Method used: The	• Overalls	
			crops Prostical works	machines		student should be	• Gum boots	
			Guide the students on	Picking coffee berries (coffee)		to harvest different	• Caps	
			how to use tools and	 Dennes (contee), Dluck loof time 		beverage crops	• gunny bags	
			materials in	• Fluck leaf tips		Principles: The	 Mats /plastic sheet Dealerts 	
			harvesting beverage	Collecting		student should	 Daskets Tao physician charge 	
			crops	harvested		explain the principles	 Tea plucking snears /machines 	
			Activity:	produce under		of harvesting	/ machines	

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Module Title (Main Competence)	Unit Title (Specific Competences)	Elements (Learning Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Service Assessment	Knowledge Assessment	Training Requirements/ Suggested Resources	Number of Periods per Unit
			Organize the students in manageable groups to perform harvesting of beverage crops	 shade Mention immediate after harvest practices Pack the harvested beverage crop Observe safety precaution Clean the tools and equipment Store the tools and equipment 		 beverage crops Theories: The student should explain: equipment and tools required to harvest beverage crops Methods of harvesting different beverage crops Maturity signs of beverage crops Importance of harvesting mature crop Effect of harvesting crop under adverse conditions Harvesting methods Packing requirement Circumstantial knowledge: Detailed knowledge: Detailed knowledge about Handling of mature 	• Tea pluckers	

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Module Title (Main Competence)	Unit Title (Specific Competences)	Elements (Learning Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Service Assessment	Knowledge Assessment	Training Requirements/ Suggested Resources	Number of Periods per Unit
2.0 Performing post-harvest activities	2.1 Handling harvested field crops	(a) Drying field crops	Brainstorm: Guide the students to identify, define, tools, materials, used in drying field crop Practical work: Guide the students on how to use tools and materials used for drying field crops Activity: Organize the students in manageable groups to dry field crop per given crop	 The student should be able to: Select the tools, Materials, equipment for drying field crop Explain types of tools, equipment and materials used to drying field crops Explain techniques used to dry field crop Explain moisture content required in drying different field crops Observe safety 	Field crops dried to required moisture content	 beverage crops Characteristics of mature beverage crops Knowledge Evidence Detailed knowledge of: Method used: The student should be able to explain how to perform drying of different field crops Principles: The student should explain the principles underlying drying of different field crops Theories: The student should explain: Different tools, materials and equipment Methods and techniques of drying different field crops Factors affecting drying of field 	The following tools, equipment, materials and safety gear are to be available: • Overalls • Gum boots • Mats /Carpets / concrete surface • Moisture meters • Bags • Spades • Containers • Driers • Rakes	115

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Module Title (Main Competence)	Unit Title (Specific Competences)	Elements (Learning Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Service Assessment	Knowledge Assessment	Training Requirements/ Suggested Resources	Number of Periods per Unit
		(b) Sorting field	Brainstorm:	 precautions Clean tools and equipment Store equipment and tools 	Field crops	crops, Importance of drying field crop Circumstantial knowledge: Detailed knowledge about. Differences in drying requirements of different field crops Knowledge	The following tools.	
		crops	Guide the students to identify, define, tools, materials, used in sorting field crop Practical work: Guide the students on how to use tools and materials used in sorting field crops Activity: Organize the students in manageable groups to sort different field crop	 should be able to: Select the tools, materials, equipment and safety gears Perform sorting of different field crops Explain criteria for sorting different field crop produce Observe safety precautions for tools and equipment 	sorted accordingly.	Evidence Detailed knowledge of: Method used: The student should be able to be able to explain how to carry out sorting of different field crop produce Principles: The student should explain the principles of sorting different field crop produce Theories: The student should explain: Sorting of different field	 equipment, materials and safety gear are to be available: Overalls Gum boots Carpets Sieves Bags Spades Containers Sorting machines Produce to be sorted Gloves Masks 	

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Module Title (Main Competence)	Unit Title (Specific Competences)	Elements (Learning Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Service Assessment	Knowledge Assessment	Training Requirements/ Suggested Resources	Number of Periods per Unit
		(a) Creding field	Proinctorm	 Clean tools and equipment Store equipment and tools 	Field group	 crops Techniques used for sorting different field crop Importance of sorting field crops Circumstantial knowledge: Detailed knowledge about Different sorting requirements for different field crops. 	The following tools	
		(c) Grading heid crops	Guide the students to identify, define, tools, materials, used in grading field crop Practical work: Guide the students on determining different quality criteria used in grading various field crop produce Activity: Organize the students in manageable groups to grade given field crop produce	 should be able to: Select tools, materials, equipment used in grading different field crop produce, Grading quality criteria for different field crop produce Observe safety 	graded accordingly	 Knowledge Evidence Detailed knowledge of: Method used: The student should be able to explain: How to grade different field crop produce Different quality criteria used to grading different field crop produce Principles: The 	 and safety gear are to be available: Overalls Gum boots Carpets Grading machines / equipment / tools Bags Containers Masks Gloves Field crop produce to be graded 	

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(Main	Unit Title (Specific	Elements (Learning	and Learning				Training Requirements/ Suggested Resources	of
Competence)	Competences)	Activities)	Methods	Process	Product/Service	Knowledge		per Unit
				Assessment	Assessment	Assessment		per ente
				precautions		student should		
				Clean tools		explain the principles		
				and equipment		underlying in grading		
				• Store		of field crop produce		
				equipment and		Theories: The		
				tools		student should		
						explain:		
						Different tools,		
						equipment used to		
						grade field crop		
						produce		
						Circumstantial		
						knowledge:		
						Detailed knowledge		
						about Different		
						grading requirements		
						for different field		
	2.2	(a) Can 1 at a	Dere ter et e errere	The state of set 4	Trac 1'4' 1	crop produce	TT 1 (1).	100
	2.2 Porforming	(a) Conducting	Guida the students to	should be able to:	trootmonts	Knowledge	The following tools,	100
	Post- harvest	treatments	identify define tools	Select tools	performed as per	Detailed knowledge	and safety gear are to be	
	treatments	ucuments	materials, used in	materials	recommended	of:	available:	
			traditional treatment	equipment	standards	Method used: The	• Overall,	
			Practical work:	and safety		student should be	Gum boots	
			Guide the students on	gears		able to explain how	Containers	
			how to use tools and	• Perform		to carry out	• Bags	
			materials used in	traditional		traditional treatment	• Mats	
			A ctivity:	treatments to		practices for field	• Cleaners	
			Organize the students	afferent field		storage	• Trays	
			Organize the students	crop produce		sionage		

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Module Title			Suggested Teaching					Number
(Main Competence)	(Specific Competences)	(Learning Activities)	and Learning Methods	Process Assessment	Product/Service Assessment	Knowledge Assessment	Suggested Resources	of Periods per Unit
			in manageable groups to conduct traditional treatments to different field crop produce	 Observe safety precautions Clean tools and equipment Store equipment and tools 		Principles: The student should explain the principles for traditional treatment of field crop produce before storage Theories: The student should explain: Traditional field crop produces treatments Circumstantial knowledge: Detailed knowledge about different requirements for traditional treatment for different field crop produce	 Spade Traditional / botanicals preservative materials Solarisation facilities Smoke releasing facilities Field crop produce to be used in performing traditional treatments 	
		(b) Conducting chemical treatments	Brainstorm: Guide the students to identify, define, tools, materials, used in agro chemical treatment, different agro chemicals used in performing chemical treatment Practical work:	The student should be able to: Select the tools, materials, equipment and safety gears, Perform chemical treatment techniques, Differentiate	Chemical treatments to field crop produce performed as per recommended standards	Knowledge Evidence Detailed knowledge of: Method used: The student should be able to explain how to carry out chemical treatment practices for field crop	The following tools, equipment, materials and safety gear are to be available: • Overall, • Gum boots • Containers • Bags • Mats / • Agrochemicals	

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Madala Title								Maaalaan
(Main Competence)	Unit Title (Specific Competences)	Elements (Learning Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Service Assessment	Knowledge Assessment	Training Requirements/ Suggested Resources	of Periods per Unit
			Guide the students on how to use tools and materials used in performing chemical treatment. Activity: Organize the students in manageable groups to conduct chemical treatments to the field crop produce	different agrochemicals used for treatment to different field crop produce, Observe safety precautions Clean tools and equipment Store equipment and tools		produce Principles : The student should explain the principles for chemical treatment of field crop produce Different agrochemicals suitable for treatment to different field crop produce Theories : The student should explain: Chemical treatments to field crop produce, Requirements for using chemical treatment to field crop produce Circumstantial knowledge : Detailed knowledge about costs involved in performing chemical treatments and risks associated to it	 Spade Weighing balance Measuring cylinders Sprayer Chemical mixing facility 	
		(c) Performing	Demonstration:	The student	Field crop	Knowledge	The following tools,	

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Module Title (Main Competence)	Unit Title (Specific Competences)	Elements (Learning Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Service Assessment	Knowledge Assessment	 Training Requirements/ Suggested Resources 	Number of Periods per Unit
		packing of field crop produce	Show student the correct methods for packing field crops, emphasizing techniques to avoid damage and maintain quality. Field visits : Guide the student to visit packing stations or industries to observe professional packing processes for various field crops Group discussions : Discuss the importance of proper packing for crop protection, marketability, and transportation Brainstorm : Guide the students to identify, define, tools, materials, used in performing package of field crop List and identify different types of packaging material relevant and suitable	 should be able to: Select tools, materials, equipment and safety gears Perform packing of field crop produce Observe safety precautions Clean tools and equipment and tools 	produce packed in a relevant suitable packaging material as per recommended standards	Evidence Detailed knowledge of: Method used: The student should be able to explain how to perform packing of field crop produce Different appropriate packaging for different field crop produce Principles: The student should explain the principles for field crop produce packing. Theories: The student should explain: Importance packing field crop produce, qualities of different packaging materials for field crop produce Circumstantial knowledge: Detailed knowledge about Costs and qualities of	equipment, materials and safety gear are to be available: • Overall, • Gum boots • Bags • Mats • Trays • Hermetic • Silo • Different packaging materials	

				Assessment Criteria				
Module Title			Suggested Teaching					Number
(Main Competence)	Unit Title (Specific Competences)	Elements (Learning Activities)	and Learning Methods	Process Assessment	Product/Service Assessment	Knowledge Assessment	Training Requirements/ Suggested Resources	of Periods per Unit
			to different field crop produce Discussion: Guide students to discuss on the use suitability of different packaging materials, advantages and disadvantages, Practical work: Guide the students on how to use tools and materials used in packing crop produce Activity: Organize the students in manageable groups to perform packing of crop produce			packaging materials for field crop produce		
	2.3 Storing field crops	(a) Practicing traditional storage	Brainstorm: Guide the students to identify, define, tools, materials, used in traditional storage List methods for traditional storage Video clips:	The students should be able to: Select tools, materials, equipment and safety gears Explain the traditional storage methods	Crops produce stored in traditional facility as per recommended practices	Knowledge Evidence Detailed knowledge of: Method used: The student should be able to explain how to use traditional storage facilities	The following tools, equipment, materials and safety gear are to be available: • Overalls • Gum boots • Caps • Sacks • Clay / earth pots	160

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(Main Competence)	Unit Title (Specific Competences)	Elements (Learning Activities)	and Learning Methods	Process Assessment	Product/Service Assessment	Knowledge Assessment	Training Requirements/ Suggested Resources	of Periods per Unit
			Use video clips to display different traditional storage facilities and how they are used Practical work: Guide the students on how to use tools and materials for traditional produce storage Activity: Organize the students in manageable groups to performing traditional produce storage	Perform traditional storage of field crop produce Observe safety precautions Clean tools and equipment Store tools and equipment		Principles: The student should explain the principles of traditional storage of field crop produce Theories: The student should explain: Traditional storage facilities Uses of traditional facilities Importance of traditional storage facilities Types of traditional storage facilities and their qualities Circumstantial knowledge: Detailed knowledge about: Costs, qualities and suitability of traditional storage facilities	 Drum /barrel Traditional Cribs (Vihenge) Any other traditional storage facilities 	
		(b) Practicing	Brainstorm:	The student	Crop produce	Knowledge	The following tools,	
		modern	Guide the students to	should be able to:	stored in modern	Evidence	equipment, materials	
		storage	identify, define, tools,	• Select tools,	storage facilities	Detailed knowledge	and safety gear are to be	
		C	materials, used in	materials.	as per	of:	available:	
			modern storage	equipment	recommended	Method used: The	Overalls	

					Assessment Criter	ia		
Module Title (Main Competence)	Unit Title (Specific Competences)	Elements (Learning Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Service Assessment	Knowledge Assessment	Training Requirements/ Suggested Resources	Number of Periods per Unit
			List the material used to perform modern storage of field crop produce Practical work: Guide the students on how to use tools and materials used in making modern storage facility Activity: Organize the students in manageable groups to use modern storage facilities	 and safety gears Select suitable modern storage facility Perform modern storage techniques Observe safety precautions Clean tools and equipment Store tools and equipment 	practices	 student should be able to explain how to perform modern storage of field crop produce Principles: The student should explain the principles of modern field crop produce storage Theories: The student should explain: Modern storage facilities for field crop produce Requirements to perform modern storage of field crop produce. Types of modern storage facilities Qualities of crop storage facilities Circumstantial knowledge: Detailed knowledge 	 Gum boots Caps Bags Silos Stores Warehouse Hermetic bags Sacks Hermetic bags Silos 	

					Assessment Criter	ia	- Training Requirements/ Suggested Resources	
Module Title (Main Competence)	Unit Title (Specific Competences)	Elements (Learning Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Service Assessment	Knowledge Assessment		Number of Periods per Unit
						about : Conditions favourable for storage of field crops, costs associated with modern storage facilities		
		(c) Performing monitory of storage produce	Brainstorm: Guide the students to identify, define, tools, materials, used in monitoring of stored produce List the different ways of performing monitory of storage produce Practical work: Guide the students on how to use tools and materials used in monitory of stored produce Activity: Organize the students in manageable groups to performing monitory of stored	 The student should be able to: Select tools, materials and devices Select the storage facility Monitor stored produce Observe safety precautions 	Field crop produce monitored and records well kept	Knowledge Evidence Detailed knowledge of: Method used: The student should be able to explain the principles of monitoring Stored field crop produce Principles: The student should explain the principles of monitoring different stored field crop produce Procedures for monitoring stored field crop produce Theories: The student should explain: Stored produce	 The following tools, equipment, materials and safety gear are to be available: Bags of stored produce Silos Stores Warehouse Thermometers Hygrometer Smart phone with application for weather parameter detection Field crop storage monitoring system 	
					Assessment Criter	ia		
---------------------------------------	---	--	---	---	--	--	---	-------------------------------------
Module Title (Main Competence)	Unit Title (Specific Competences)	Elements (Learning Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Service Assessment	Knowledge Assessment	 Training Requirements/ Suggested Resources 	Number of Periods per Unit
			field crop produce			monitoring systems, Procedure and materials for monitoring stored field crop produce Circumstantial knowledge: Detailed knowledge about: Challenges associated with monitoring of stored field crop produce		
3.0 Managing farm activities	3.1 Maintain various farm records	(a) Preparing format for different farm records	Demonstration: Show students how to design and structure various farm record formats, such as production logs, expense sheets, and inventory records Field visits: Visit farms or agribusinesses to observe how farm records are kept and formatted in real- world settings Group discussions:	 The student should be able to: Organize tools and materials Differentiate formats for different farm records Determine types of data Develop format for different farm records Identify the 	Different farm record formats developed and well kept	Knowledge Evidence Detailed knowledge of: Method used: The student should be able to explain how to develop format for different farm records Principles: The student should explain the principles of developing format for different farm records	The following tools, equipment, materials and safety gear are to be available: • Note books • Pens • Computer • Guiding procedure / document for farm record format development • Reference book • Internet access • Laminators • Storage folders or binders	102

					Assessment Criter	ia		
Module Title (Main Competence)	Unit Title (Specific Competences)	Elements (Learning Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Service Assessment	Knowledge Assessment	Training Requirements/ Suggested Resources	Number of Periods per Unit
			Discuss the importance of maintaining accurate farm records and the elements that make a good record format Brainstorm: Guide the students to identify, define, format for different farm records Practical work: Guide the students on how to prepare format for different farm records. Use internet to search for different farm records format Activity: Organize the students in manageable groups to prepare formatting for different farm records	 specific purpose of each farm record (e.g., production, financial, inventory, labor). Determine the key elements required for the record format, such as date, quantity, cost, and description. Choose an appropriate medium for the record format, such as a notebook, spreadsheet, or digital software Design the layout of the record format, ensuring clarity, 		 Theories: The student should explain: Format of different farm reports Procedures for collecting farm records Farm report writing Importance of keeping farm records Sources of crop data Procedures for keeping farm records Circumstantial knowledge Detailed knowledge about computer knowledge on how to maintain various farm records 	Templates for farm records (printed or digital)	

				Assessment Criteria				
Module Title (Main Competence)	Unit Title (Specific Competences)	Elements (Learning Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Service Assessment	Knowledge Assessment	Training Requirements/ Suggested Resources	Number of Periods per Unit
				 simplicity, and ease of use Include columns or sections for all essential data points specific to the farm activity Create a header or title that clearly indicates the purpose of the record format. 				
		(b) Collecting farm records	Brainstorm: Guide the students to identify, define, format for collecting different farm records Practical work: Guide the students on how to collect farm records Activity: Organize the students in manageable groups to collect different farm records	The student should be able to: Organize tools and equipment Determine types of data Collect crop data Write farm reports	Farm records developed and well kept	Knowledge Evidence Detailed knowledge of: Method used: The student should be able to be able to explain how to collect and record data in the farm Principles: The student should explain the principles for collecting	The following tools, equipment, materials and safety gear are to be available: • Note books • Pens • Farm stores • Calculator • Computer • Daily farm activities / operations in place	

					Assessment Criter	ia		
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Module 1 itle	Unit Title	Elements	Suggested Teaching				Training Requirements/	Number
Competence)	(Specific	(Learning	Methods	Process	Product/Service	Knowledge	Suggested Resources	Periods
	competences)	Activities)		Assessment	Assessment	Assessment		per Unit
						different farm		
						records		
						Theories: The		
						student should		
						explain:		
						• Format of		
						different farm		
						records		
						• Procedures for		
						collecting farm		
						Importance of		
						• Importance of		
						records		
						Procedures for		
						keeping farm		
						records		
						Circumstantial		
						knowledge		
						Detailed knowledge		
						about Sources of		
						farm records and		
			D • •		F (computer knowledge	TT1 C 11 C 1	
		(c) Preparing	Brainstorm:	I ne student	Farm report	Knowledge	I ne Iollowing tools,	
		rarm reports	identify define	Should be able to:	obtained	Detailed knowledge	and safety gear are to be	
			format for writing	• Organize		of.	and safety gear are to be	
			different farm reports	equipment		Method used: The	Note books	
			Demonstration:	Determine		student should be	Protective gears	
			Show learners how to	types of data		able to prepare clear	• Pens	
			structure and write a	Collect crop		farm reports	Calculator	

					Assessment Criter	ia		
Module Title	Unit Title	Elements	Suggested Teaching		1	1	Training Requirements/	Number
(Main Competence)	(Specific Competences)	(Learning Activities)	and Learning Methods	Process Assessment	Product/Service Assessment	Knowledge Assessment	Suggested Resources	of Periods per Unit
			clear, concise farm report, emphasizing essential sections such as introduction, data analysis, and recommendations. Practical work: Guide the students on how to write farm report Activity: Organize the students in manageable groups and perform farm report writing	data • Write farm reports		 Principles: The student should explain the principles of writing farm reports. Theories: The student should explain: Format of different farm reports Procedures for collecting farm records Farm report writing Importance of keeping farm records Sources of crop data Circumstantial knowledge Detailed knowledge about computer knowledge and willingness of team working 	 Computer Ledger Loss and profit accounts books Different farm data and records 	
	3.2 Preparing	(a) Carry out	Brainstorm:	The students	Farm activities	Knowledge	The following tools,	103
	farm project	analysis of	Guide the students to	should be able to:	identified and	Evidence	equipment, materials	
	proposal	farm	list and identify farm	Select tools and	documented.	Detailed knowledge	and safety gear are to be	

					Assessment Criter	ia		
Module Title (Main Competence)	Unit Title (Specific Competences)	Elements (Learning Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Service Assessment	Knowledge Assessment	Training Requirements/ Suggested Resources	Number of Periods per Unit
		activities	activities List the tools, materials used to analyse farm activities List farm activities Practical work: Guide the students on procedure to carry out analysis of farm activities Activity: Organize the students in manageable groups and carry out analysis of farm activities	materials. Explain procedure to carry out farm activities Perform farm activities analysis Interpret farm activities		of: Method used: The student should be able explain how to analyse farm activities Principles: The student should be able to explain principles involved in carry out analysis of farm activities Theories: The student should explain: Procedures for analysing farm activities Importance of analysing farm activities Circumstantial knowledge Detailed knowledge about Diversity of farm activities and their potential	available: • Note books • Pens • Calculator • Computer • Microsoft excels	
		(b) Interpreting production	Brainstorm: Guide the students to identify, define, list	The students should be able to: • Select tools	Farm production parameters interpreted and	Knowledge Evidence Detailed knowledge	The following tools, equipment, materials and safety gear are to be	

					Assessment Criter	ia		
Module Title (Main Competence)	Unit Title (Specific Competences)	Elements (Learning Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Service Assessment	Knowledge Assessment	Training Requirements/ Suggested Resources	Number of Periods per Unit
		parameters	the tools used for interpreting production parameters List out production parameters of intended farm activities Practical work: Guide the students on how to interpreting production parameters Activity: Organize the students in manageable groups and perform farm interpreting production parameters	 and materials Explain procedure used in interpreting farm production parameters Formulate farm production parameters Perform interpretatio n of farm production parameters 	documented	 of: Method used: The student should be able to explain interpretation of farm production parameters Principles: The student should be able to explain principles involved in interpreting farm production parameters Theories: The student should explain: Farm production parameters Importance of developing a farm project proposal Analysis of farm and nonfarm activities Crop production parameters 	 available: Note books Pens Calculator Computer Working papers Reference book /Documents for different production parameters of field crops Internet access 	

					Assessment Criter	ia		
Module Title (Main Competence)	Unit Title (Specific Competences)	Elements (Learning Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Service Assessment	Knowledge Assessment	Training Requirements/ Suggested Resources	Number of Periods per Unit
		(a) Formulating	Broinstorm	The students	Project proposal	Circumstantial knowledge Detailed knowledge about farm production parameters Knowledge	The following tools	
		(c) Formulating project proposal	Guide the students to identify, define, list the tools used in formulating project proposal. List different farm project proposals Practical work: Guide the students on how to formulate farm project proposal Activity: Organize the students in manageable groups and develop farm project proposal	should be able to: Select tools and materials Perform crop production parameters, Formulate farm project proposal	developed according to set procedures and standards	KnowledgeEvidenceDetailed knowledgeof:Method used:The student shouldbe able to explainhow to develop farmproject proposalPrinciples: Thestudent should beable to explainprinciples involvedin the developmentof a farm projectproposalTheories: Thestudent shouldexplain:• Projectproposalgenerationprocess	 The following tools, equipment, materials and safety gear are to be available: Note books Pens Calculator Computer Working papers Guiding documents / reports 	

				Assessment Criteria				
Madale Title			a					Maaabaa
(Main Competence)	Unit Title (Specific Competences)	Elements (Learning Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Service Assessment	Knowledge Assessment	Training Requirements/ Suggested Resources	of Periods per Unit
						 Importance of developing a farm project proposal Analysis of farm and nonfarm activities Crop production parameters Circumstantial knowledge Detailed knowledge about project proposal development requirement 		
	3.3 Managing farm business	(a) Planning farm activities	Brainstorm: Guide the students to identify, define, list the tools used for planning farm activities List farm activities Practical work: Guide the students on how to planning farm activities Activity: Organize the students	 The students should be able to: Organize tools and materials required to plan farm activities Explain different farm activities Plan farm activities 	Farm activities planned and documented according to set procedures and standards	Knowledge Evidence Detailed knowledge of: Method used: The student should be able to explain how to plan farm activities Principles: The student should explain principles involved in planning	 The following tools, equipment, materials and safety gear are to be available: Note books Pens Calculator Computer List of farm activities 	110

Module Title			Suggested Teaching					Number
(Main Competence)	Unit Title (Specific Competences)	Elements (Learning Activities)	and Learning Methods	Process Assessment	Product/Service Assessment	Knowledge Assessment	Training Requirements/ Suggested Resources	of Periods per Unit
		(b) Preparing farm budgets	in manageable groups and plan farm activities Brainstorm: Guide the students to identify, define, list the tools used for preparing farm budgets List different forms for farm budgets Practical work: Guide the students on how to planning farm budgets Activity: Organize the students in manageable groups and perform farm	The students should be able to: • Organize tools and materials • Detail farm activities • Detail farm activities requirements • Prepare farm budget	Farm budget to establish field crop prepared according to set procedures and standards	farm activities Theories: The student should explain: Importance of planning farm activities Circumstantial knowledge Detailed knowledge about Farm activities diversity and their requirements Knowledge Evidence Detailed knowledge of: Method used: The student should be able to explain how to manage farm budgets Principles: The student should explain principles of preparing farm budgets Theories: The student should	The following tools, equipment, materials and safety gear are to be available: • Note books • Pens • Calculator • Computer • Working papers • Guiding information / records	

					Assessment Criter	ia		
Module Title (Main Competence)	Unit Title (Specific Competences)	Elements (Learning Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Service Assessment	Knowledge Assessment	Training Requirements/ Suggested Resources	Number of Periods per Unit
		(c) Promoting farm products	budgeting for a given field crop establishment Brainstorm: Guide the students to identify, define, list the tools used for promoting farm products List the media used in promoting farm products Practical work: Guide the students on how to use different promotion methods and strategies to promoting farm products Use internet search to acquire more knowledge on farm	 The students should be able to: Organize tools and equipment Explain the procedure used in promoting farm product List the media used to promote farm product Promote farm products Recognize consumers 	Promotion materials developed, advertisements created, farm product marketed	explain: Importance of farm budgets Importance of farm budget Circumstantial knowledge Detailed knowledge about Farm budget requirement and farm business diversity Knowledge Evidence Detailed knowledge of: Method used: The student should be able to explain how to promote farm product Principles: The student should explain principles involved in promoting farm products Theories: The student should explain:	The following tools, equipment, materials and safety gear are to be available: • Note books • Pens • Computer • Printer • Media • Leaflets • Business cards • Internet connection • Mobile phones	

					Assessment Criter	ia		
Module Title (Main Competence)	Unit Title (Specific Competences)	Elements (Learning Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Service Assessment	Knowledge Assessment	Training Requirements/ Suggested Resources	Number of Periods per Unit
			product promotion Activity: Organize the students in manageable groups promote a given farm product			Importance of promoting farm product Procedures for used in promoting farm product Circumstantial knowledge Detailed knowledge about Consumers preference and costumer's behaviour		
		(d) Evaluating farm performance	Brainstorm: Guide the students to identify, define, list the tools used for evaluating farm performance, Indicators of farm performance Practical work: Guide the students on how to evaluating farm performance Activity: Organize the students in manageable groups and evaluating farm performance	 The students should be able to: Organize tools and equipment Explain the procedure for evaluate farm performance Evaluate farm performance Obtain the data or records on farm performance evaluation 	Records or data on farm performance obtained	Knowledge Evidence Detailed knowledge of: Method used: The student should be able to explain how to evaluate farm performance Principles: The student should explain principles involved in evaluating farm performance Indicators of farm performance	 The following tools, equipment, materials and safety gear are to be available: Note books Pens Calculator Computer Procedure for farm performance evaluation Farm records data 	

					Assessment Criter	ia		Number of Periods per Unit
Module Title	Unit Title	Flements	Suggested Teaching				Training Requirements/	
Competence) C	(Specific Competences)	(Learning Activities)	and Learning Methods	Process Assessment	Product/Service Assessment	Knowledge Assessment	Suggested Resources	of Periods per Unit
						Theories: The		
						student should		
						Importance of		
						evaluating farm		
						performance		
						Procedures for		
						evaluating farm		
						Circumstantial		
						knowledge		
						Detailed knowledge		
						about how to		
						performance		

Form Four

Table 6: Detailed Contents for Form Four

M. 1.1. T.'.			~ .		Assessment Crite	ria	The initial	Number of Periods per Unit 65
(Main Competence)	Unit Title (Specific Competences)	Unit LifeElementsDaggestea(Specific(LearningTeaching arCompetences)Activities)Learning Meth1.1 Processing(a) PreparingBrainstorm:	Suggested Teaching and Learning Methods	Process Assessment	Product/Service Assessment	Knowledge Assessment	Requirements/ Suggested Resources	of Periods per Unit
1.0 Processing field crops	1.1 Processing leguminous crops	(a) Preparing legumes powder/flour	Brainstorm: Guide the students to list leguminous crops that can be processed into powder /flour List and identify different types of tools, materials, devices, machines and equipment for preparing legumes powder/flour Video clips: Use video clips to show legume flour / powder processing Practical work: Guide the students on how to use / handle tools and materials used in preparing legumes powder/flour	 The students should be able to: Select tools, materials, equipment and machineries used in preparing legume powder Determine processing method Process leguminous crops Determine steps of processing Observe safety precautions Clean and store tools, equipment and machineries Store tools, equipment and machineries 	legumes powder/flour processed as per laid down rules and procedures	 Knowledge Evidence Detailed knowledge of: Method used: The student should be able to explain traditional and modern methods of processing leguminous crops Principles: The student should explain the principles of processing legumes into flour /powder Theories: The student should explain: Importance of processing leguminous crops Uses of processing facilities Processing procedures Primary methods of processing legume crop produce 	The following tools, equipment, materials and safety gear are to be available: • Water • Containers • Grinding machine • Pressing machine • Tradition tray • Stover • Bags • Sieving device	65

					Assessment Crite	ria		
Module Title (Main Competence)	Unit Title (Specific Competences)	Elements (Learning Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Service Assessment	Knowledge Assessment	- Training Requirements/ Suggested Resources	Number of Periods per Unit
			Activity: Organize the students in manageable groups to prepare legumes powder/flour			 Secondary methods of processing leguminous crops Circumstantial knowledge: Detailed knowledge about: Safe handling of processing tools, equipment and machineries Observe hygiene of processed leguminous crops 		
		(b) Utilizing legume crop residues/By products	Brainstorm: Guide the students to identify different ways used in utilization of crop residues List types of tools, materials and equipment used during utilization of crop residues/By products Importance of utilizing crop residues	 The students should be able to: Select tools, equipment and machineries used in legume crop residues Explain methods used for legume crop residues utilization Importance of utilizing crop residues Challenges in utilizing crop 	Legume Crop residue products utilized accordingly	 Knowledge Evidence Detailed knowledge of: Method used: The student should be able to explain different ways used in crop residue utilization Principles: The student should explain the principles for crop residue utilization. Theories: The student should explain: Importance of 	 The following tools, equipment, materials and safety gear are to be available: Chaff Cutter Feed block press Biogas Digesters Residue compressors Machete Animals Residues of legume crops Water 	

					Assessment Crite			
Module Title (Main Competence)	Unit Title (Specific Competences)	nit Title Elements Specific (Learning spetences) Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Service Assessment	Knowledge Assessment	Requirements/ Suggested Resources	Number of Periods per Unit
			Video clips: Use video clips to show utilization of various legume crop residues Practical work: Guide the students utilize crop according Activity: Organize the students in manageable groups to perform crop residue utilization accordingly	 residues Observe safety precautions Clean and store tools, equipment and machineries Store tools, equipment and machineries 		crop residue utilization • Ways used in crop residue utilization Circumstantial knowledge: Detailed knowledge about: Requirements for proper crop residue utilization		
	1.2 Processing cereal crops	(a) Preparing cereal flour	Brainstorm: Guide the students to list cereal and identify types of cereals that can be made into flour List and identify different types of tools, materials and equipment for preparing cereal flour	 The students should be able to: Select tools and materials used in preparing cereal flour Determine methods of processing cereals flour (milled and un- milled cereal 	Cereal crops flour obtained.	Knowledge Evidence Detailed knowledge of: Method used: The student should be able to explain traditional and modern methods of processing cereal flour Principles: The student should explain	 The following tools, equipment, materials and safety gear are to be available: Water Containers Grinding machine Traditional tray Bags Sieving devices Cereal crop 	80

Module Title					Assessment Crite	ria		
Module Title (Main Competence)	Unit Title (Specific Competences)	Elements (Learning Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Service Assessment	Knowledge Assessment	Training Requirements/ Suggested Resources	Number of Periods per Unit
			Practical work: Guide the students on how to use / handle tools and materials used in preparing cereal flour Activity: Organize the students in manageable groups to prepare cereal flour	 flour) Determine steps of processing cereals flour Process cereals crops Observe safety precautions Clean and store tools, equipment and machineries Store tools, equipment and machineries 		 the principles of processing cereal crop flour Theories: The student should explain: Importance of processing cereal crop flour Processing procedures and stages Primary methods of processing cereal crop flour Secondary methods of processing cereal crop flour Circumstantial knowledge: Detailed knowledge about Requirements for processing cereal crop flour Safe handling of processing tools, equipment and machineries Observe hygiene 	produces to be processed into a flour	

					Assessment Crite	ria		N7 1
Module Title (Main Competence)	Unit Title (Specific Competences)	Elements (Learning Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Service Assessment	Knowledge Assessment	Requirements/ Suggested Resources	Number of Periods per Unit
						of processed cereal crops		
		(b) Preparing cereal bran	Brainstorm: Guide the students to Identify different types of bran, to identify, define different tools, machines, materials and equipment for preparing cereal bran Video Clips: Use different video clips to show different type of bran and how they are obtained Practical work: Guide the students on how to use / handle tools, machine and materials used in preparing cereal bran	 The students should be able to: Select tools and materials Determine different ways of preparing cereals bran Determine steps of preparing cereals Use tools, materials, equipment and machineries to prepare cereal bran Observe safety precautions Clean and store tools, equipment and machineries Store tools, equipment and machineries 	Cereal bran prepared as per laid down rules and procedures	 Knowledge Evidence Detailed knowledge of: Method used: The student should be able to explain how to prepare bran from different cereal produce Principles: The student should explain the principles of preparing cereal bran Theories: The student should explain: Process of preparing bran, Qualities of bran from different field crop produce Importance of preparing cereal bran 	 The following tools, equipment, materials and safety gear are to be available: Water Containers Modern milling machine to make cereal bran Traditional facilities to make cereal bran Traditional trays Bags Sieving devices Cereal crop produces to be processed into bran 	

				Assessment Criteria			Training	N7 1
Module Title (Main Competence)	Unit Title (Specific Competences)	Elements (Learning Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Service Assessment	Knowledge Assessment	Requirements/ Suggested Resources	of Periods per Unit
		(a) Utilizing	Activity: Organize the students in manageable groups to prepare cereal bran	The students	Corrol grop	 Detailed knowledge about processing of cereal bran Safe handling of processing tools, equipment and machineries Value and characteristics of different cereal bran 	The following tools	
		(c) Ounzing cereal crop residues /By products	Guide the students to identify different types of tools, materials and equipment for utilizing crop residues Video clips: Use video clips to show utilization of various cereal crop residues Practical work: Guide the students on how to use / handle tools and materials used in preparing legumes	 should be able to: Select tools and materials used in utilizing cereal crop residues Determine different ways of utilizing cereal crop residues Determine steps of processing cereals Use tools, equipment and machineries Process cereals crops 	cereal crop residues utilized accordingly	 Knowledge Evidence Detailed knowledge of: Method used: The student should be able to utilize the cereal residues Principles: The student should explain the principles of utilizing crop residues Theories: The student should explain: Importance of utilizing crop residues Challenges in crop residues utilization 	 The following tools, equipment, materials and safety gear are to be available: Containers Tractor Processing machines / tools Animals Residues of cereal crops Other crop fields Composting sites 	

					Assessment Criter	ria		
Module Title (Main Competence)	Unit Title (Specific Competences)	Elements (Learning Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Service Assessment	Knowledge Assessment	Requirements/ Suggested Resources	Number of Periods per Unit
			powder/flour. Activity: Organize the students in manageable groups to perform utilization of cereal crop residues	 Observe safety precautions Clean and store tools, equipment and machineries Store tools, equipment and machineries 		 Circumstantial knowledge: Detailed knowledge about cereal crop residue utilization Safe handling of processing tools, equipment and machineries Observe hygiene of processed cereal crops 		
		(d) Preparing cakes, breads	Brainstorm: Guide the students to identify different types of tools, materials and equipment for preparing cakes, breads Video clip: Use video clip to show cake / bread making process from cereal crop flour Practical work: Guide the students on how to use / handle tools and	 The student should be able to: Select tools, materials, machines and equipment Determine methods of processing cakes / bread Determine steps of cakes / bread preparation from cereals produce Use tools, materials, equipment and 	Cakes /breads prepared as per laid down procedures	 Knowledge Evidence Detailed knowledge of: Method used: The student should be able to explain how to prepare cakes / breads Principles: The student should explain the principles of processing cereals into cakes / breads Theories: The student should explain: Procedures for preparing cakes / bread from cereal 	 The following tools, equipment, materials and safety gear are to be available: Water Traditional or modern oven Ingredients for cake / bread preparation Cereal flour for cake / bread making Source of power Flour mixing machines or alternative method Containers 	

					Assessment Crite	ria		
Module Title (Main Competence)	Unit Title (Specific Competences)	Elements (Learning Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Service Assessment	Knowledge Assessment	Requirements/ Suggested Resources	Number of Periods per Unit
			materials used in preparing cakes, breads Activity: Organize the students in manageable groups to prepare cakes / breads by using cereal flour	 machineries for cakes /bread preparation Process cereals crops Observe safety precautions Clean and store tools, equipment and machineries Store tools, equipment and machineries 		crop produce • Requirements for cakes / bread processing from cereal produce Circumstantial knowledge: Detailed knowledge about Demand and qualities of cakes / bread made from cereal crop produce Observe hygiene of processed cereal crops	Clean well- prepared working surface and place	
	1.3 Processing roots and tuber crops	(a) Preparing crisps	Brainstorm: Guide the students to identify different ways of preparing crisps List tools, materials and equipment used for preparing crisps Video clips: Use video clips to show procedure of preparing crisps	 The student should be able to: Select tools, materials, machines and equipment Determine methods of preparing roots and tubers to make crisps Make crisps from root and tuber crops Observe safety 	Crisps prepared as per laid down procedures	Knowledge Evidence Detailed knowledge of: Method used: The student should be able to explain how to prepare crisps from roots and tuber crops Principles: The student should explain principles of preparing crisps Theories: The student should explain: crisps making	 The following tools, equipment, materials and safety gear are to be available: Water Containers Peeling machine Slicing machine Knives Source of cooking energy Utensil for cooking / frying crisps Ingredients for crisps making Oil for crisps 	80

					Assessment Crite	ria		
Module Title (Main Competence)	Unit Title (Specific Competences)	Elements (Learning Activities)	ts Suggested ng Teaching and es) Learning Methods	Process Assessment	Product/Service Assessment	Knowledge Assessment	Requirements/ Suggested Resources	Number of Periods per Unit
			from roots and tubers Practical work: Guide the students on how to use / handle tools and materials used in preparing crisps Activity: Organize the students in manageable groups to preparing crisps	 precautions Clean and store tools, equipment and machineries Store tools, equipment and machineries 		 procedure Requirement for the preparation of crisps from roots and tubers Circumstantial knowledge: Detailed knowledge about Crisps making Safe handling of processing tools, equipment and machineries Observe hygiene of processed root and tuber crops 	Roots and tubers of choice for crisps preparation	
		(b) Preparing flour	Brainstorm: Guide the students to identify different tools, materials and equipment for preparing flour by using root and tuber crop produce List different methods for Preparing flour Practical work: Guide the students	 The student should be able to: Select tools, materials and equipment used in making root and tuber flour Determine methods of flour making using root and tuber crop produce Perform flour processing by 	Root / tuber flour prepared	Knowledge Evidence Detailed knowledge of: Method used: The student should be able to explain how to prepare flour by using root and tuber crops Principles: The student should explain principles of root and tuber flour processing Theories: The student	 The following tools, equipment, materials and safety gear are to be available: Water Containers Traditional and modern grinding machines / tools Traditional tray Sieving devices Mats Dried root and tuber crop produce to be 	

					Assessment Crite			
Module Title (Main Competence)	Unit Title (Specific Competences)	Elements (Learning Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Service Assessment	Knowledge Assessment	Training Requirements/ Suggested Resources	Number of Periods per Unit
			on how to use / handle tools and materials used in preparing flour under root and tuber crops Activity: Organize the students in manageable groups to preparing root and tuber flour	 using root and tuber crops Observe safety precautions Clean and store tools, equipment and machineries Store tools, equipment and machineries 		 should explain: Importance of processing root and tuber crop produce into flour Root and tuber flour processing facilities Procedures in root and tuber flour processing Circumstantial knowledge: Detailed knowledge about Requirements for root and tuber flour making Value and demand of processed flour from roots and tubers 	processed into a flour	
		(c) Preparing chips	Brainstorm: Guide the students to identify different tools, materials and equipment for preparing chips by using root and tuber crops List different ways	 The student should be able to: Select tools, materials, machines and equipment used to prepare chips Explain ways of preparing 	Fried chips prepared	Knowledge Evidence Detailed knowledge of: Method used: The student should be able to explain how to prepare chips using traditional and modern methods from roots and tubers	The following tools, equipment, materials and safety gear are to be available: • Water • Containers • Peeling machine • Slicing machine • Knives	

					Assessment Crite	ria		
Module Title (Main Competence)	Unit Title (Specific Competences)	Elements (Learning Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Service Assessment	Knowledge Assessment	Requirements/ Suggested Resources	Number of Periods per Unit
			of preparing chips Practical work: Guide the students on how to use / handle tools and materials used in preparing chips Activity: Organize the students in manageable groups to preparing chips	 chips Determine steps of making chips by using root and tuber crop produce Making chips using root and tuber crop produce Observe safety precautions Clean and store tools, equipment and machineries Store tools, equipment and machineries 		 Principles: The student should explain principles of chips preparation from root and tuber crop produce Theories: The student should explain: Importance of processing root and tuber crops nd tuber crops nd tuber crops Tuber and roots processing facilities Processing procedures and stages Traditional methods of processing root and tuber crops Improved methods of processing root and tuber crops Circumstantial knowledge: Detailed knowledge about 	 cooking fire Utensil for cooking / frying chips Ingredients for chips making Oil for chips frying Roots and tubers of choice for chips preparation 	

					Assessment Criter	ria		
Module Title (Main Competence)	Unit Title (Specific Competences)	Elements (Learning Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Service Assessment	Knowledge Assessment	Requirements/ Suggested Resources	Number of Periods per Unit
						Value of chips, chips demand and requirements chips preparation		
		(d) Preparing animal feeds	Brainstorm: Guide the students to Identify, define, different tools, materials, machines and equipment for preparing animal feed List different method for preparing animal feeds Practical work: Guide the students on how to use / handle tools and materials used in preparing animal feed Activity: Organize the students in manageable groups and preparing animal	 The student should be able to: Select tools, materials and equipment used in making animal feed Determine methods of processing root and tuber crops to obtain animal feed Determine steps of processing root and tuber crops Use tools, equipment and machineries Process root and tuber crops to obtain Use tools, equipment and machineries Process root and tuber crops to obtain Observe safety precautions Clean and store 	Animal feeds prepared from root and tuber crop produce	 Knowledge Evidence Detailed knowledge of: Method used: The student should be able to explain how to perform traditional and modern methods of animal feed processing from roots and tubers crop produce Principles: The student should explain principles of making animal feed from root and tuber crop produce Theories: The student should explain: Importance of animal feed prepared from root and tubers Tuber and roots animal feed 	The following tools, equipment, materials and safety gear are to be available: • Water • Containers • Grinding machine • Chipper • Bags • Knives • Bush knife (panga)) • Carpets • Drying shade • Animal feed presser • Feed meal machines • Slicing / chopping machines • Root and tuber materials for animal feed processing	

					Assessment Crite	ria	Tuitin	
Module Title (Main Competence)	Unit Title (Specific Competences)	Elements (Learning Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Service Assessment	Knowledge Assessment	- Training Requirements/ Suggested Resources	Number of Periods per Unit
			feed by using root and tuber crops	 tools, equipment and machineries Store tools, equipment and machineries 		 processing facilities Animal feed Processing procedures and stages 		
						Circumstantial knowledge: Detailed knowledge about Value and demand of animal feed processed from root and tubers Availability of root and tuber materials to process animal feed		
	1.4 Processing oil crops	(a) Preparing oil	Brainstorm: Guide the students to Identify, define, different tools, materials and equipment for preparing oil Importance of oil making from oil crop produce List down oil crops Practical work:	 The student should be able to: Select tools, materials, devices and equipment Determine methods of oil processing Explain procedure for processing of oil crops Process oil 	Oil prepared from oil crop produce	Knowledge Evidence Detailed knowledge of: Method used: The student should be able to explain how to perform traditional and modern methods of processing oil crops Principles: The student should explain the principles of processing oil from oil	 The following tools, equipment, materials and safety gear are to be available: Water Containers Oil Pressing machine Various field oil crop to process oil (e.g Sunflower, coconut, sesame, oil palm) 	80

Module Title		Unit Title Elements		Assessment Criteria			Training	N
Module Title (Main Competence)	Unit Title (Specific Competences)	Elements (Learning Activities)	Teaching and Learning Methods	Process Assessment	Product/Service Assessment	Knowledge Assessment	Requirements/ Suggested Resources	of Periods per Unit
			Guide the students on how to use / handle tools, equipment, machinery and materials used in preparing oil for different field crop Activity: Organize the students in manageable groups to prepare and process oil from oil crop produce	from oil crop produce • Observe safety precautions • Clean and store tools, equipment and machineries • Store tools, equipment and machineries		 crop produce Theories: The student should explain: Importance of processing oil crops Oil crop processing facilities Methods of oil crop processing Circumstantial knowledge: Value and demand of oil processed from oil crop Availability of raw materials for processing of oil from oil crop produce 	Standard operating procedure for oil processing from oil crops	
		(b) Preparing butter	Brainstorm: Guide the students to Identify different tools, materials and equipment for preparing butter from oil crops.	The student should be able to: • Select tools, materials and equipment used in making butter from oil crop	Oil crop-based butter product prepared	Knowledge Evidence Detailed knowledge of: Method used: The student should be able to explain how to perform traditional and modern methods of	The following tools, equipment, materials and safety gear are to be available: • Water • Mixing bowl • Containers • Pressing	

					Assessment Crite	ria		
Module Title (Main Competence)	Unit Title (Specific Competences)	Elements (Learning Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Service Assessment	Knowledge Assessment	Requirements/ Suggested Resources	Number of Periods per Unit
			Mention the oil crop that are used to prepare butter products Practical work: Guide the students on how to use / handle tools and materials used in preparing butter Activity: Organize the students in manageable groups to preparing oil crop based butter	 Determine methods of processing oil crop produce to butter Prepare butter Observe safety precautions Clean and store tools, equipment and machineries Store tools, equipment and machineries 		 processing oil crops to obtain butter products Principles: The student should explain the principles of making butter from oil crop produce Theories: The student should explain: Importance of processing oil crops Characteristics oil seeds Butter processing facilities Procedures for making butter from oil crop produce Circumstantial knowledge: Value and demand of oil crop based butter Raw material availability Observe hygiene of processed and preserved crop produce 	 machine Trays Butter dishes Raw materials from oil crop produce Other materials and ingredients to prepare required oil crop-based butter 	

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(Main (Main Competence)	Unit Title (Specific Competences)	Elements (Learning Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Service Assessment	Knowledge Assessment	Requirements/ Suggested Resources	of Periods per Unit
		(c) Preparing soap	Brainstorm: Guide the students to Identify, define, different tools, materials and equipment for preparing soap. List different method for making soap by using oil crop Demonstration: Demonstrate how to process soap from oil crop produce Practical work: Guide the students on how to use / handle tools and materials used in preparing soap Activity: Organize the students in manageable groups to preparing soap	 The student should be able to: Select tools, materials and equipment for making soap Determine methods of processing soap from oil crop produce Perform soap processing from oil crop produce Observe safety precautions Clean and store tools, equipment and machineries Store tools, equipment and machineries 	Soap prepared from oil crop produce	Knowledge Evidence Detailed knowledge of: Method used: The student should be able to explain how to perform soap processing from oil crop produce by using traditional and modern methods Principles: The student should explain the principles of making soap by using processing oil crops Theories: The student should explain: Soap processing from oil crop produce Soap processing facilities Traditional soap processing methods Modern soap processing methods Procedures for making soap	The following tools, equipment, materials and safety gear are to be available: • Water • Containers • Pressing machine • Relevant raw materials for soap processing from oil crop produce • Knife • Measuring tools • Oils / fat • Sodium hydroxide • Mold for shaping soap • Storage materials	

					Assessment Criteria			
Module Title (Main Competence)	Unit Title (Specific Competences)	Elements (Learning Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Service Assessment	Knowledge Assessment	Requirements/ Suggested Resources	Number of Periods per Unit
						knowledge: Value and demand for soaps processed from oil crop produce Availability of raw materials for processing soap from oil crop produce		
		(d) Preparing animal feed	Brainstorm: Guide the students to: Identify different tools, materials and equipment for preparing animal feed by using oil crop Importance of feed animal sun cake from sunflower Practical work: Guide the students on how to use / handle tools and materials used in preparing animal feed Activity: Organize the students in	 The student should be able to: Select tools, materials and equipment used for preparing animal feed Determine methods of processing oil crops Determine steps of processing oil crops Use tools, equipment and machineries Process oil crops Observe safety precautions Clean and store 	Animal feed prepared from oil crop produce	 Knowledge Evidence Detailed knowledge of: Method used: The student should be able to explain how to perform animal feed preparation from oil crop produce by using traditional and modern methods Principles: The student should explain the principles of animal feed processing from oil crop produce Theories: The student should explain: Importance of animal feed processing from oil crop produce Animal feed 	 The following tools, equipment, materials and safety gear are to be available: Water Containers Pressing machine Feeder grinder or chopper Feed formulation chart Storage facilities Moisture tester 	

			0 1		Assessment Criteria			
Module Title (Main Competence)	Unit Title (Specific Competences)	Elements (Learning Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Service Assessment	Knowledge Assessment	Training Requirements/ Suggested Resources	Number of Periods per Unit
			manageable groups to preparing animal feed by using oil crop	tools, equipment and machineries • Store tools, equipment and machineries		processing facilities Circumstantial knowledge: Circumstantial knowledge: Value and demand of animal feed processed from oil crop produce Availability of raw materials for processing animal feed from oil crop produce		
	1.5 Processing fibre crops	(a) Preparing sisal carpets	Brainstorm: Guide the students to: Identify different tools, materials and equipment for preparing sisal carpets Practical work: Guide the students on how to use / handle tools and materials used in preparing sisal carpets Activity:	 The student should be able to: Select tools, materials and equipment used in sisal carpets making Determine methods of making sisal carpet Make sisal carpet Observe safety precautions Clean and store tools, equipment and 	Sisal carpets prepared from processed fibre crops	 Knowledge Evidence Detailed knowledge of: Method used: The students should be able to explain how to perform traditional and modern processing of sisal carpets Principles: The student should explain principles of making sisal carpet Theories: The student should explain: Uses of sisal carpet Steps required to 	The following tools, equipment, materials and safety gear are to be available: • Water • Containers • Knife • Natural fibre / materials • Cutting materials • Spinning tools • Needle • Decorating materials	70

				Assessment Criteria			Training	NY 1
(Main (Main Competence)	Unit Title (Specific Competences)	Elements (Learning Activities)	Teaching and Learning Methods	Process Assessment	Product/Service Assessment	Knowledge Assessment	Requirements/ Suggested Resources	of Periods per Unit
			Organize the students in manageable groups to preparing sisal carpets	machineries store tools, equipment and machineries		 making sisal carpet Maintenance of sisal carpets Circumstantial knowledge: Detailed knowledge about processing fibre crops Safe handling of processing tools, equipment and machineries Safe handling of preserving tools, equipment and machineries Observe hygiene of processed and preserved crop produce. 		
		(b) Preparing local brush	Brainstorm: Guide the students to: Identify different tools, materials and equipment for preparing local brush Practical work: Guide the students	 The student should be able to: Select tools, materials and equipment Determine methods of processing fibre crops Determine steps of 	Local brush obtained from fibre crop	Knowledge Evidence Detailed knowledge of: Method used: The student should be able to explain how to perform traditional and modern processing of fibre crops to obtain local brush Principles: The	The following tools, equipment, materials and safety gear are to be available: • Measuring tape • Handles / Poles • Natural fibre • Binding tools • Knife • Decorative material	

		Assessment Criteria				ria	Training	NY 1
(Main (Main Competence)	Unit Title (Specific Competences)	Elements (Learning Activities)	Teaching and Learning Methods	Process Assessment	Product/Service Assessment	Knowledge Assessment	Requirements/ Suggested Resources	of Periods per Unit
			on how to use / handle tools and materials used in preparing local brush Activity: Organize the students in manageable groups to prepare local brush	 processing fibre crops for making local brush Process fibre crops Observe safety precautions Clean and store tools, equipment and machineries store tools, equipment and machineries 		 student should explain principles of preparations of a local brush Theories: The student should explain: Steps required to making local brush Maintenance of local brush Circumstantial knowledge: Detailed knowledge about processing fibre crops Preparing local brush Safe handling of processing tools, equipment and machineries Safe handling of preserving tools, equipment and machineries Observe hygiene of processed and preserved crop produce 		

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(Main Competence)	Unit Title (Specific Competences)	Elements (Learning Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Service Assessment	Knowledge Assessment	Requirements/ Suggested Resources	of Periods per Unit
		(c) Preparing ropes	Brainstorm: Guide the students to Identify different tools, materials and equipment for preparing ropes from fibre crops Explain different methods for making ropes Practical work: Guide the students on how to use / handle tools and materials used in preparing ropes from different fibre crops Activity: Organize the students in manageable groups to prepare different ropes	 The student should be able to: Select tools, materials and equipment. Determine methods of processing fibre crops Determine steps of processing fibre crops Process fibre crops Observe safety precautions Clean and store tools, equipment and machineries store tools, equipment and machineries 	Rope are been prepared	 Knowledge Evidence Detailed knowledge of: Method used: The student should be able to explain how to perform traditional and modern processing of fibre crops for making rope Principles: The student should explain principles of preparing ropes Theories: The student should explain: Uses of fibre ropes Characteristics of fibre ropes Uses of processing facilities Processing procedures and stages processing fibre crops Steps required to extract fibres Uses of sisal by products 	The following tools, equipment, materials and safety gear are to be available: • Cutting materials /knife • Sisal material • Braiding tools • Twisting tool • Worktable	

					Assessment Criter	ria		
Module Title (Main Competence)	Unit Title (Specific Competences)	Unit Title Elements (Specific (Learning Competences) Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Service Assessment	Knowledge Assessment	Training Requirements/ Suggested Resources	Number of Periods per Unit
						 Uses of cotton by products Circumstantial knowledge: Detailed knowledge about processing fibre crops Rope preparation Safe handling of processing tools, equipment and machineries Safe handling of preserving tools, equipment and machineries Observe hygiene of processed and preserved crop produce. 		
	1.6 Processing beverage crops	(a) Preparing coffee powder	Brainstorm: Guide the students to: Identify different tools, materials and equipment for preparing coffee powder Mention varieties of coffee Method for processing coffee	 The students should be able to: Select tools and materials used in making coffee powder Determine methods of processing coffee Determine steps of 	Coffee powder obtained as per laid down rules and procedures	 Knowledge Evidence Detailed knowledge of: Method used: The student should be able to explain how to: Make dry and wet processing beverage crops Make tradition processing coffee Modern methods 	The following tools, equipment, materials and safety gear are to be available: • Water • Containers • Grinding machine • Mats • Concrete floor • Bags • Sieving devices	60

					Assessment Crite	ria		
Module Title (Main Competence)	Unit Title (Specific Competences)	Elements (Learning Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Service Assessment	Knowledge Assessment	Training Requirements/ Suggested Resources	Number of Periods per Unit
			Practical work: Guide the students on how to use / handle tools and materials used in preparing coffee powder Activity: Organize the students in manageable groups to preparing coffee powder	 processing coffee Process coffee Observe safety precautions Clean and store tools, equipment and machineries Store tools, equipment and machineries 		of processing coffee beverage Principles: The student should explain the principles of processing coffee Theories: The student should explain: Importance of processing coffee Characteristics of coffee beverage Uses of processing facilities Processing procedures and stages Methods of processing beverage crops Steps required to prepare coffee powder Circumstantial knowledge: Detailed knowledge about; Safe handling of processing tools, equipment and	 Carpets Dried coffee beans 	
				Assessment Criteria			The second se	
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Module Title (Main Competence)	Unit Title (Specific Competences)	Elements (Learning Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Service Assessment	Knowledge Assessment	- Iraining N Requirements/ Suggested Resources F P	Number of Periods per Unit
						 machineries Observe hygiene of processed and preserved crop produce 		
		(b) Preparing local tea	Brainstorm: Guide the students to: Identify different tools, materials and equipment for preparing tea List methods for preparing tea as beverage crop Practical work: Guide the students on how to use / handle tools and materials used in preparing local tea Activity: Organize the students in manageable groups to preparing local tea	 The students should be able to: Select tools and materials used in tea preparation Determine methods of processing tea Determine steps of processing tea Observe safety precautions Clean and store tools, equipment and machineries Store tools, equipment and machineries 	Tea blended	 Knowledge Evidence Detailed knowledge of: Method used: The student should be able to explain how to: Make dry and wet Tea processing Perform traditional tea processing Modern methods of tea processing Principles: The student should explain the principles of processing tea Theories: The student should explain: Importance of tea processing Tea processing facilities Steps required in tea processing Circumstantial 	The following tools, equipment, materials and safety gear are to be available: • Water • Containers • Grinding machine • Mats • Concrete floor • Bags • Sieving devices • Tea leaves	

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(Main (Main Competence)	Unit Title (Specific Competences)	Elements (Learning Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Service Assessment	Knowledge Assessment	Requirements/ Suggested Resources	of Periods per Unit
2.0 Packing and marketing processed field crops	2.1 Conducting market survey	(a) Performing data collection	Brainstorm: Guide the students to: Identify different tools, materials and equipment for conducting data collection List the method used in data collection Demonstration: Demonstrate to student how to collect data through questionnaire paper or tabulate Practical work: Guide the students on how to use / handle tools and	 The students should be able to: Select tools and equipment Collect data Determine type of consumers preference Determine product quality Determine types of competitors Determine target market Determine crop seasonality of the product 	Data on research for marketing produce obtained	 knowledge: Detailed knowledge about; Observe hygiene of processed and preserved crop produce Handling and utilization of field crop processing Knowledge Evidence Detailed knowledge of: Method used: The student should be able to explain how to conduct data collection and ethics Principles: The student should explain the principles of data collection and ethics Theories: The student should explain: Different methods/ techniques for data collection. Site / area selection for data 	The following tools, equipment, materials and safety gear are to be available: • Note books • Pens • Market area • Consumers • Questionnaire forms or tablet • Computer • Calculators	165

		Suggested		Assessment Crite	ria	Training		
(Main (Main Competence)	Unit Title (Specific Competences)	Elements (Learning Activities)	Teaching and Learning Methods	Process Assessment	Product/Service Assessment	Knowledge Assessment	Requirements/ Suggested Resources	of Periods per Unit
		(b) Performing data analysis	materials used in conducting data collection Activity: Organize the students in manageable groups to conducting data collection Brainstorm: Guide the students to: Identify different types of tools, materials and equipment for conducting data analyses Explain the methods for data analysis Practical work: Guide the students on how to use / handle tools and materials used in conducting data analysis Activity:	 The students should be able to: Select tools and equipment used in data analysis Determine type of consumers preference Determine product quality Determine types of competitors Determine target market Determine the crop seasonality of the product 	Market survey data analysed and presented	 collection Procedures for data collection Circumstantial knowledge: Detailed knowledge about Acceptance or readiness of individuals to be interviewed Knowledge Evidence Detailed knowledge of: Method used: The student should be able to explain how to analyse data for facilitating market opportunities for a product Principles: The student should explain the principles of Data analyse for marketing agriculture produce Theories: The student should explain: Importance of data analyses for marketing 	The following tools, equipment, materials and safety gear are to be available: • Note books • Pens • Market survey data • Computer • Calculators	

		Elements Suggested	Assessment Criteria			Training	NY 1	
(Main (Main Competence)	Unit Title (Specific Competences)	Elements (Learning Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Service Assessment	Knowledge Assessment	Requirements/ Suggested Resources	of Periods per Unit
			Organize the students in manageable groups to conducting data analysis			 Data analyses techniques Data analysis procedures Observation of crop seasonality in marketing Circumstantial knowledge: Detailed knowledge about Data interpretation skills 		
		(c) Prepare market survey report	Brainstorm: Guide the students to: Identify different tools, materials and equipment for preparing market survey report Demonstration: Demonstrate how to write market survey, show examples of market survey report	 The students should be able to: Select tools and equipment used in preparing market survey report Determine type of consumers preference Determine product quality Determine types of competitors Determine 	Market survey/research report obtained	Knowledge Evidence Detailed knowledge of: Method used: The students should be able to explain how to write market survey report and determine market opportunities for a product Principles: The students should explain the principles of Writing market survey report	 The following tools, equipment, materials and safety gear are to be available: Note books Pens Analysed data Computer Papers Examples of market survey reports 	

					Assessment Crite	ria	 Training Requirements/ Suggested Resources 	N 1
(Main (Main Competence)	Unit Title (Specific Competences)	Elements (Learning Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Service Assessment	Knowledge Assessment		of Periods per Unit
			Practical work: Guide the students on how to use / handle tools and materials used in conducting data collection Activity: Organize the students in manageable groups to conducting data collection	 target market Determine the crop seasonality of the product 		 Theories: The student should explain: Importance of marketing Marketing process of products Components of marketing Product, Place Price and Promotion Determine competitors in business Observation of crop seasonality in marketing Factors to consider in establishing market survey Conduct report writing Circumstantial knowledge: Detailed knowledge about Preparing marketing survey report And analyse market competitors of 		

					Assessment Crite	ria		Number
Module Title (Main Competence)	Unit Title (Specific Competences)	Elements (Learning Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Service Assessment	Knowledge Assessment	Training Requirements/ Suggested Resources	Number of Periods per Unit
						your products		
	2.2 Preparing packaging material	(a) Choosing packing materials	Brainstorm: Guide the students to Identify different packing materials Practical work: Guide the students on how to use / handle tools and materials used in choosing different packaging material List different packaging material Importance of using good packaging materials Activity: Organize the students in manageable groups to choose the correct packaging material for the	 The student should be able to: Select tools, equipment and safety gears Select the packaging facilities Packing the crops Observe safety precautions Clean tools and equipment Store tools and equipment 	Packaging materials chosen ready for packing agricultural produce	 Knowledge Evidence Detailed knowledge of: Method used: The student should be able to explain how to choose packaging materials depending on on the crop produce Principles: The student should explain principles involved in packaging field crops Theories: The student should explain: Importance of packaging materials Types of packing materials Qualities of packing materials Factors to consider when packing crop produce Circumstantial 	The following tools, equipment, materials and safety gear are to be available: • Bottles (Plastic/glass) • Plastic bags • Sacks • Cans • Drums • Crates • Wrapping papers	150

					Assessment Crite	ria		
(Main (Main Competence)	Unit Title (Specific Competences)	Elements (Learning Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Service Assessment	Knowledge Assessment	Requirements/ Suggested Resources	of Periods per Unit
			right crop produce			 knowledge: Detailed knowledge about: Packaging crop produce Observe food packaging safety precautions Observe food hygiene 		
		(b) Preparing labels and logos	Brainstorm: Guide the students to: Identify different tools, Materials and machinery used in labels and logo preparation Practical work: Guide the students on how to use / handle tools and materials used in preparing labels and logos Activity: Organize the students in manageable groups to prepare	 The student should be able to: Select tools, equipment and safety used in preparing labels and logos for packing field crop materials Select the packaging facilities Packing the crops Observe safety precautions Clean tools and equipment Store tools and equipment 	Labels and logos well prepared for market promotion	 Knowledge Evidence Detailed knowledge of: Method used: The student should be able to explain how to prepare labels and logos Principles: The student should explain principles involved in making labels and logos Theories: The student should explain: Importance of labels and logos Types and qualities of labels and logos 	The following tools, equipment, materials and safety gear are to be available: • Overalls • Gum boots • Caps • Containers • Bags • Stores • Warehouse • Bottles (Plastic/glass) • Plastic bags • Sacks • Cans • Drums • Crates • Wrapping papers • Software	

				Assessment Criteria				
Module Title (Main Competence)	Unit Title (Specific Competences)	Elements (Learning Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Service Assessment	Knowledge Assessment	Requirements/ Suggested Resources	Number of Periods per Unit
			labels and logos			 labels and logos Factors to consider when preparing labels and logos for packing crop produce Procedures for obtaining logos and labels Circumstantial knowledge: Detailed knowledge about: Packaging crop produce Observe food packaging safety precautions Observe food hygiene 		
3.0 Managing	3.1 Performing	(a) Performing	Brainstorm:	The student	Water source	Knowledge Evidence	The following tools,	107
environment	conservation in	conservation	to identify	 Select working 	conserveu.	of:	and safety gear are to	
	farm area		different water	tools,		Method used: The	be available:	
			conservation	safety gears		to explain how to	Overalls	
			List and identify	• Define water		conserve water sources	Hand hoes	
			tools, material	source		Principles. The	Note books	
			performing water	• Explain		student should explain	KopesSpades	

				Assessment Criteria			Turining	
Module Title (Main Competence)	Unit Title (Specific Competences)	Elements (Learning Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Service Assessment	Knowledge Assessment	Requirements/ Suggested Resources	Number of Periods per Unit
			source conservation Practical work: Guide the students on how to use / handle tools and materials used in performing water source conservation Activity: Organize the students in manageable groups and perform water source conservation	 different methods used in water source conservation Performing water source conservation Observe safety precautions for handling tools and equipment Clean the tools and equipment Store the tools and equipment 		 the principles of water conservation Theories: The student should explain: Tools and equipment used in water source conservation Importance of water source conservation Methods of water source conservation Circumstantial knowledge: Detailed knowledge about water source conservation 	 Relevant tree species Mulch Cover crop Gutter GPS Mapping Tools Flow meter 	
		(b) Performing planting eco- friendly trees around the farm	Brainstorm: Guide the students to list different eco-friendly trees around the school premises List and identify tools, material used in planting eco-friendly tree around the farm Methods used in	The student should be able to: • Select working tools, equipment and safety gear • Determine different methods used to plant and manage eco- friendly trees	Relevant eco- friendly trees planted	Knowledge Evidence Detailed knowledge of: Method used: The student should be able to explain how to plant and manage different eco-friendly trees Principles: The student should explain the principles of	The following tools, equipment, materials and safety gear are to be available: • Gum boots • Overalls • Hand hoes • Note books • Demonstration plot • Ropes • Pegs	

					Assessment Criter	ria		
Module Title (Main Competence)	Unit Title (Specific Competences)	Elements (Learning Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Service Assessment	Knowledge Assessment	Requirements/ Suggested Resources	Number of Periods per Unit
			planting eco- friendly trees Practical work: Guide the students on how to use / handle tools and materials used in planting eco- friendly trees around the farm Activity: Organize the students in manageable groups and plant eco-friendly trees around the farm area.	 around the farm List different eco-friend trees Importance of planting eco-friendly trees Characterises of eco-friendly trees Observe safety precaution of handling tools and equipment Clean the tools and equipment Store the tools and equipment 		 climate change management Theories: The student should explain: Tools used in managing climate change Importance of climate change Effects of climate change in crops production Select drought resistance crop varieties Select diseases and insect pest resistance varieties Planting/sowing based on the rainfall calendar variation Ridging cultivation Drip irrigation Trees planting Circumstantial knowledge: Detailed knowledge about climate change 	 Spades Mulch Cover crops 	

	dala Tiala		Assessment Criteria						
Module Title (Main Competence)	Unit Title (Specific Competences)	Elements (Learning Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Service Assessment	Knowledge Assessment	Requirements/ Suggested Resources	Requirements/ Suggested Resources Per per	Number of Periods per Unit
						management			
	3.2 Performing	(c) Performing soil conservation	Brainstorm: Guide the students to define, list and identify materials used in performing soil conservation Explain methods of soil conservation Importance of soil conservation Practical work: Guide the students on how to use / handle tools, materials, and methods used soil conservation Activity: Organize the students in manageable groups and perform soil conservation	 The student should be able to: Select working tools, equipment and safety gear used in soil conservation Determine methods used in soil conservation Explain importance of soil conservation Observe safety precaution of handling tools and equipment Clean the tools and equipment Store the tools and equipment 	Soil conserved by mulching, cover crops, terracing methods or any other relevant methods	Knowledge Evidence Detailed knowledge of: Method used: The student should be able to explain how to conserve soil by relevant methods Principles: The student should explain the principles of soil conservation Theories: The student should explain: • Tools and equipment used in soil conservation • Importance of soil conservation Circumstantial knowledge: Detailed knowledge about soil conservation	The following tools, equipment, materials and safety gear are to be available: • Gum boots • Overalls • Hand hoes • Note books • Demonstration plot • Ropes • Pegs • Spades • Mulch • Cover crops	107	
	waste	(a) Performing recycling of	Guide the students	should be able to:	recycling	Detailed knowledge	equipment, materials	107	

	e Title				Assessment Crite	ria	Training	
Module Title (Main Competence)	Unit Title (Specific Competences)	Elements (Learning Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Service Assessment	Knowledge Assessment	Requirements/ Suggested Resources	of Periods per Unit
	management	wastes	to: Identify different tools, material, equipment and machinery used in performing recycling of waste Methods of waste recycling Practical work: Guide the students on how to use / handle tools and materials used in performing recycling of waste Activity: Organize the students in manageable groups and perform waste recycling	 Select tools, equipment and safety gears used in waste recycling Select site for managing wastes Select materials to be used Observe safety precautions Clean the tools and equipment Store the tools and equipment 	managed according to set standards	 of: Method used: The student should be able to explain how to manage field crop wastes Principles: The student should explain the principles of managing field crop wastes Theories: The student should explain Importance of waste management Sorting waste materials importance of waste disposal Methods for waste disposal Function of farm wastes Components of solid waste management Types of farm wastes Materials needed in managing farm wastes 	and safety gear are to be available: • Gum boots • Overalls • Hand hoes • Note books • Demonstration plot • Ropes • Pegs • Spades • Containers Waste materials	

					Assessment Crite	ria		
Module Title (Main Competence)	Unit Title (Specific Competences)	Elements (Learning Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Service Assessment	Knowledge Assessment	Requirements/ Suggested Resources	Number of Periods per Unit
		(b) Perform handling of waste	Brainstorm: Guide the students to identify different tools, materials, equipment and machinery used performing handling of waste Practical work: Guide the students on how to use /	The student should be able to: • Select tools, equipment and safety gears used in crop wastes • Select site for managing wastes • Select materials to be	Crop wastes managed according to set standards	Safe handling of tools and equipment Circumstantial knowledge: Detailed knowledge about safety precautions of managing farm wastes Knowledge Evidence Detailed knowledge of: Method used: The student should be able to explain how to handle field crop wastes Principles: The student should explain the principles of handling field crop wastes	The following tools, equipment, materials and safety gear are to be available: • Gum boots • Overalls • Hand hoes • Note books • Demonstration plot • Ropes • Pegs	
			on how to use / handle tools and materials used in handling of waste Activity: Organize the students in	 Used Observe safety precautions Clean the tools and equipment Store the tools and equipment 		 wastes Theories: The student should explain Importance of waste management Sorting waste materials 	SpadesContainersWaste materials	

					Assessment Crite	ria		
Module Title (Main Competence)	Unit Title (Specific Competences)	Elements (Learning Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Service Assessment	Knowledge Assessment	Training Requirements/ Suggested Resources	Number of Periods per Unit
			manageable groups to handle crop wastes			 importance of waste disposal Methods of waste disposal Function of farm wastes Components of solid waste management Types of farm wastes Materials needed in managing farm wastes Safe handling of tools and equipment Circumstantial knowledge: Detailed knowledge about safety precautions of managing farm wastes 		
		(c) Performing sorting of waste	Brainstorm: Guide the students to identify different tools, materials, equipment and machinery used in performing sorting	The student should be able to: • Select tools, equipment and safety gears • Select site for managing wastes	Sorting of crop wastes sorted according to set standards	Knowledge Evidence Detailed knowledge of: Method used: The student should be able to explain how to sort crop wastes Principles: The	The following tools, equipment, materials and safety gear are to be available: • Gum boots • Overalls • Hand hoes • Note books	

					Assessment Crite	ria		
Module Title (Main Competence)	Unit Title (Specific Competences)	Elements (Learning Activities)	Suggested Teaching and Learning Methods	Process Assessment	Product/Service Assessment	Knowledge Assessment	Training Requirements/ Suggested Resources	Number of Periods per Unit
			of waste Practical work: Guide the students on how to use / handle tools and materials used in sorting of waste material Activity: Organize the students in manageable groups to perform sorting of crop waste material	 Select materials to be used Observe safety precautions Clean the tools and equipment Store the tools and equipment 		 student should explain the principles of sorting crop wastes Theories: The student should explain Importance of sorting waste materials importance of waste disposal Methods of waste disposal Function of farm wastes Components of solid waste management Types of farm wastes Materials needed in managing farm wastes Safe handling of tools and equipment Circumstantial knowledge: Detailed knowledge about safety precautions of sorting farm wastes 	 Demonstration plot Ropes Pegs Spades Containers Waste materials 	

					Assessment Crite	ria		
Module Title (Main Competence)	Title in (Specific ence)Unit Title (Specific Competences)Elements (Learning 	Suggested Teaching and Learning Methods	Process Assessment	Product/Service Assessment	Knowledge Assessment	- Training Requirements/ Suggested Resources	Number of Periods per Unit	
	3.3 Managing soil erosion	(a) Cropping system	Brainstorm: Guide the students to: Identify different cropping system List out crops used for cropping system Practical work: Guide the students on how to perform cropping system Activity: Organize the students in manageable groups and conduct cropping to control soil erosion	 The student should be able to: Select tools, equipment and safety gears Select site for managing soil erosion Select materials to be used as cropping system Observe safety precautions Clean the tools and equipment 	Soil erosion managed by conducting cropping system	 Knowledge Evidence Detailed knowledge of: Method used: The student should be able to explain how to use cropping material to manage soil erosion Principles: The student should explain the principles of soil erosion Theories: The student should explain: Importance of soil erosion management Gully erosion Rill erosion Rain drops erosion Sheet erosion Wind erosion Water erosion Contour cultivation control measures Cropping system control measures 	The following tools, equipment, materials and safety gear are to be available: • Gum boots • Overalls • Hand hoes • Note books • Demonstration plot • Ropes • Pegs • Spades • Containers • Mulch • Cover crops	107

					Assessment Crite	ria		
Module Title (Main Competence)	Unit Title (Specific Competences)	Elements (Learning Activities) Suggested Teaching and Learning Method	Suggested Teaching and Learning Methods	Process Assessment	Product/Service Assessment	Knowledge Assessment	Training Requirements/ Suggested Resources	Number of Periods per Unit
						 techniques Afforestation Safe handling of tools and equipment Circumstantial knowledge: Detailed knowledge about safety precautions of managing soil erosion 		
		(b) Contour cultivation	Brainstorm: Guide the students to: Identify different tools, material, and machinery used in performing contouring farming for controlling soil erosion List out types of contour farming Importance of contour farming Practical work: Guide the students on how to use /	 The student should be able to: Select tools, equipment and safety gears Select site for managing soil erosion Select materials to be used Observe safety precautions Clean the tools and equipment 	Soil erosion managed by Contour cultivation	 Knowledge Evidence Detailed knowledge of: Method used: The student should be able to explain how to manage soil erosion by contour cultivation Principles: The student should explain the principles of minimizing soil erosion by Contour cultivation Theories: The student should explain: Importance of 	The following tools, equipment, materials and safety gear are to be available: • Gum boots • Overalls • Hand hoes • Note books • Demonstration plot • Ropes • Pegs • Pegs • Spades • Containers • Mulch • Cover crops	

					Assessment Crite	ria		
Module Title (Main Competence)	Unit Title (Specific Competences)	Elements (Learning Activities)	Elements (Learning Activities) Suggested Teaching and Learning Methods		Product/Service Assessment	Knowledge Assessment	Training Requirements/ Suggested Resources	Number of Periods per Unit
			handle tools and materials used in conducting contour farming for minimizing soil erosion Activity: Organize the students in manageable groups to conducting contour farming			Contour cultivation for soil erosion management Gully erosion Rill erosion Rain drops erosion Wind erosion Water erosion Water erosion Contour cultivation control measures Safe handling of tools and equipment Circumstantial knowledge: Detailed knowledge about safety precautions of managing soil erosion by con tour cultivation		
		(c) Tillage practices	Brainstorm: Guide the students	The student should be able to:	Soil erosion managed by	Knowledge Evidence Detailed knowledge	The following tools, equipment, materials	
		r	to: Identify	• Select tools,	tillage practices	of:	and safety gear are to	
			different tools,	equipment and		Method used: The	be available:	
			material,	safety gears		student should be able	Gum boots	
			equipment and	used in		to explain how to	Overalls	

					Assessment Crite	ria		
Module Title (Main Competence)	Module Title (Main Competence) Unit Title (Specific Competences)	tle Elements Suggested fic (Learning nces) Activities) Learning Methods	Process Assessment	Product/Service Assessment	Knowledge Assessment	Training Requirements/ Suggested Resources	Number of Periods per Unit	
			machinery used in performing tillage practices List types of tillage Importance of tillage Effect of tillage Practical work: Guide the students on how to use / handle tools and materials used in performing tillage Activity: Organize the students in manageable groups and perform tillage to minimize soil erosion	 perform tillage Select site for perform tillage to managing soil erosion Select materials to be used in perform tillage Observe safety precautions Clean the tools and equipment Store the tools and equipment 		 manage soil erosion by tillage practices Principles: The student should explain the principles of tillage practices for minimizing soil erosion Theories: The student should explain: Importance of tillage for minimize soil erosion Types of tillage Gully erosion Rill erosion Rain drops erosion Sheet erosion Wind erosion Tillage techniques Afforestation Safe handling of tools and equipment 	 Hand hoes Note books Demonstration plot Ropes Pegs Spades Containers Mulch Cover crops 	

Module Title (Main Competence)	Unit Title (Specific Competences)	Unit Title Elements (Specific (Learning mpetences) Activities)	Suggested Teaching and Learning Methods		Assessment Criter	ria	Training	Number
				Process Assessment	Product/Service Assessment	Knowledge Assessment	Requirements/ Suggested Resources	of Periods per Unit
						Circumstantial knowledge: Detailed knowledge about safety precautions of managing soil erosion		

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