



Agriculture Syllabus

Subject Code: 616
For Examination In 2023 - 2024



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INTRODUCTION

The Eswatini Primary Certificate (EPC) syllabus is designed as a two-year course for examination in Grade 7. Agriculture is an applied science. This being the case, it follows that for assessment to be consistent with teaching and learning situations, it should also be learner-centred and activity based.

The economy of Eswatini is largely dependent on agriculture. Agriculture in Eswatini, as a subject, plays an important role in shaping attitudes and developing knowledge and skills that contribute to the development of the agriculture industry. The approach to handling the subject in the schools allows learners to develop and engage in practical activities while following scientific principles and using the environment sustainably.

The main sections of the syllabus are:

Aims

Assessment Objectives

Assessment

Curriculum Content

1. AIMS

The aims for the Agriculture programme of the syllabus are the same for all learners. These aims are set out below and describe the educational purposes of a course in the Eswatini Primary Certificate Examination.

The aims are to enable learners to:

- 1. Appreciate farming as an enjoyable and rewarding activity.
- 2. Develop an understanding and appreciation of Agriculture in terms of its role and contribution towards social and economic growth and development.
- 3. Acquire knowledge, skills and attitudes needed in food production for self-reliance and food security.
- 4. Understand and appreciate the relationships between agriculture and the need for sustainable use of scarce natural resources.
- 5. Understand and use basic concepts such as measuring, observation and record keeping when carrying out agriculture activities.
- 6. Develop awareness on the role of agriculture on HIV and AIDS.
- 7. Develop skills such as initiative, problem-solving abilities, interpersonal and scientific methods to promote resourcefulness.
- 8. Identify national and regional programmes that enhance agricultural productivity.
- 9. Participate in community agricultural activities.

ASSESSMENT OBJECTIVES

Assessment Objectives in Agriculture are:

- A. Knowledge with Understanding
- B. Handling Information and Solving Problems
- C. Practical Skills and Abilities

The assessment will include, wherever appropriate, personal, social, environmental, economic and technological applications of agriculture in modern society and contemporary issues (gender, HIV/AIDS and entrepreneurship).

A description of each assessment objective follows.

A. KNOWLEDGE WITH UNDERSTANDING

Learners should be able to demonstrate knowledge and understanding in relation to the use of:

- 1. language (terms, symbols, quantities and units);
- 2. facts, concepts, principles, patterns, models and theories;
- 3. the techniques, procedures and principles of safe agricultural practice.

B. HANDLING INFORMATION AND SOLVING PROBLEMS

Learners should be able, in words or using other written forms of presentation (i.e., symbolic, graphical and numerical), to:

- 4. locate, select, organise and present information from a variety of sources;
- 5. translate information from one form to another;
- 6. use information (data) to identify patterns, report trends and draw inferences;
- 7. present reasoned explanations for phenomena, patterns and relationships;
- 8. solve problems, including some of a quantitative and qualitative nature.

C. PRACTICAL SKILLS AND ABILITIES

Learners should be able to:

- 9. organise, develop and use techniques, apparatus and materials;
- 10. make and record observations and measurements;
- 11. interpret and evaluate experimental observations and data;
- 12. make predictions and plan investigations.

SPECIFICATION GRID

The approximate weightings allocated to each of the assessment objectives in the assessment model are summarised in the table below.

Assessment Objectives	Weighting
A. Knowledge with understanding	40% (not more than 20% recall)
B. Handling information and solving problems	35%
C. Practical skills and abilities	25%

The assessment objectives are weighted to give an indication of their relative importance. The percentages are not intended to provide a precise statement of the number of marks allocated to particular assessment objectives.

ASSESSMENT

Scheme of assessment

Assessment in this programme comprises of school-based assessment and external examination at the end of Grade 7. Learners are expected to engage in all assessment activities.

Paper 1 (1 hour 45 minutes)

This paper consists of **two** sections (Section A and Section B)

Candidates will be required to answer all questions in both sections

Section A consist of twenty (20) multiple choice questions worth 20 marks.

Section B consists of fifteen **(15)** short answer structured questions; each worth 5-6 marks, worth **80 marks.**

The questions are based on all the content as described in the syllabus.

This paper will be weighted at 60% of the total available marks.

Paper 2 Practical Assessment consisting of 100 marks.

Candidates will be required to undertake **one** practical project which will be worth 100 marks. Learners will be expected to keep a diary. The practical activities and records kept will be worth 60 marks. A guided write-up of the project will be worth 40 marks.

The project and the write-up will be assessed by teachers. See appendix on **Assessment Criteria** for **Project**

This paper will be weighted at 40% of the total available marks.

Weighting of Papers

Paper	Weighting
1	60%
2	40%

Curriculum Content

Curriculum Content		
	Objectives	
Topic	Candidates should be able to	
1. General Agriculture		
1.1 Importance of agriculture	Define agriculture	
	Explain the benefits of agriculture in Eswatini	
	- Basic needs (clothing, food and shelter)	
	- Employment/ jobs	
	- Economy/ exports	
	- Self-reliance/ Skills acquisition	
	Describe the development of agriculture from nomadic to modern farming	
	Describe the characteristics of traditional farming	
	Describe the characteristics of modern farming	
	Explain the importance of Agricultural programmes in Agriculture development:	
	- RDA's	
	- CCU	
	- NAMBoard	
1.2 Land tenure	Define land tenure	
	Describe the two land tenure systems in Eswatini:	
	- Swazi Nation Land (SNL)	
	- Title Deed Land (TDL)	
	State the advantages and disadvantages of SNL and TDL	
1.3 Agriculture Technology Part 1 – Tools and Equipment	List common agricultural tools/ equipment and their uses (spade, fork, rake, hoe, watering can, trowel, knapsack sprayer, wheelbarrow, scale, slasher, tape-measure)	
	Outline safety precautions when using farm tools	
	Define Agriculture Technology	
	Describe the uses of the following equipment in agriculture:	
	Tractor-drawn PloughTractor-drawn PlanterPivot sprinkler	
	- Combine harvester	

- Milking machine
 Automatic feeders and waterers
Describe the importance of hybrid seeds
List examples of maize hybrid seeds in Eswatini
Outline the types of fertilisers

2 Vegetable Production	
2.1 Production of main	Define vegetable
vegetables	Name five groups of vegetables (leafy, fruit, root, bulb and legume)
Vegetable groups	Give examples of each vegetable type.
	Leafy e.g. cabbage, spinach lettuce
	Fruit e.g. tomato green pepper
	Root e.g. carrot
	Bulb e.g. beetroot
	Legume green beans, peas
	Explain the importance of vegetable production.
2.2 Site selection	. Discuss factors considered when selecting a site for vegetable production
	- flat land
	- good soil
	- water source
	- enough sunlight
	- fencing
	- wind breaks (trees and hedge)
2.3 Land Preparation	Describe steps involved when preparing the land for vegetable or crop production (land clearing/ distumping, cultivation/ digging, tilth/ harrowing)
2.4 Record keeping	Describe the uses of these records; diary, production, financial.
	Keep the records accurately.*

2.5 Planting Vegetables	Describe the two ways of planting vegetables (direct & indirect)
	Describe the growing of at least one vegetable from each group: *
	- Leaf (cabbage)
	- Fruit (tomato)
	- Legume (beans)
	- Bulb (onion)
	- Root (beetroot)
	Describe crop rotation (give an example)
	Outline the benefits of crop rotation
2.5 Management of vegetables	
2.5.1 Mulching	Define the terms: mulch, mulching
	List the materials used for mulching (grass/straw,
	wood shavings, dry leaves, maize stalks)
	State the benefits of mulching
2.5.2 Thinning	Define thinning
	Identify appropriate time for thinning
	State the benefits of thinning
2.5.3 Weeding	Define a weed
	State common vegetable weeds (parasitic, invasive, poisonous)
	Define weeding
	Explain the importance of weeding
2.5.4 Fertilising	List the two groups of fertilisers (organic and inorganic)
	State the advantages and disadvantages of organic and in organic fertilises
	Describe the following fertilising practices, with examples:
	basal dressing (2:3:2) 22 + 0.5% Zn
	topdressing L.A.N
2.5.5 Watering	State the importance of water in plants
	 Identify suitable times for watering plants
2.5.6 Pests and Diseases	Define the following terms (pest, diseases)
	Discuss these common pests of vegetables: diamond black moth and caterpillar, cutworm, aphids, American boll-worm
	Discuss the common diseases of vegetables: (bulb rot, early blight, late blight, black rot, leaf spot
	State the necessary precautions followed when handling farm chemicals

2.5.7 Replacing transplants	State the importance of replacing transplants
2.6 Harvesting vegetables	 Define harvesting State appropriate time for harvesting each vegetable State the signs showing readiness to harvest of the vegetables (cabbage, tomatoes, beans, onions, beetroot)
2.7 Mushroom production	 State the common types of mushrooms (oyster white, shiitake, white button) Describe steps followed when growing mushrooms (compost preparation, spawning, casing, fruiting, harvesting) Discuss safety precautions followed when growing mushroom Identify materials used for mushroom substrate State the components of a cropping house (work area, incubation room, fruiting room) Explain the importance of each component of a cropping house State the signs of mushroom ready for harvest. Describe he procedure for harvesting mushrooms Describe how mushrooms are prepared for market

3.1 Land preparation	 Describe land preparation (de-stumping, clearing, ploughing, harrowing)
3.2 Crops grown in Eswatini	Identify field crops grown in Eswatini (grain, legume, root, fruit, fibre)
	 Identify the ways of planting (direct or indirect e.g. in maize)
	Describe the planting of at least one crop from each of the following groups:
	- Grain (maize)
	- Legume (beans)
	- Root (sweet potatoes).
	 Describe the management practices of field crops (thinning, gap filling, weeding, fertiliser application, watering and controlling pests and diseases.
	Describe the signs of readiness for harvest for each of the field crops (maize, beans, sweet potatoes)

3.3 Plant growth and Development	Outline the functions of plant parts
Bevelopment	Explain the importance of the following in plant growth:

4 Soils	
4.1 Soil properties	 Define soil Define soil texture Describe the main types of soil (clay, silt, sandy, loam)
4.2 Soil conservation and erosion	 Define soil profile Outline the components of the soil (mineral particles, organic matter, soil air, soil water) Describe the different layers in a soil profile (A horizon, B horizon, C horizon, D horizon) Define soil conservation
	 State the importance of soil conservation Define soil erosion State the causes of soil erosion Identify signs of soil erosion Describe the prevention and control of soil erosion
5 Raising chickens	
5.1 Indigenous chickens	Define indigenous chickensState the importance of indigenous chickens
5.2 Broiler chickens	 Define a broiler State the importance of keeping broiler chickens Describe the preparations done before the arrival of day-old chicks State the records kept in broiler production Define brooding State the problems encountered when brooding broilers Describe the methods of feeding broilers (starter, grower, finisher, green leaves) Define litter State materials that can be used as litter (dry grass, wood shavings, dry leaves, chopped maize straw) Describe how the litter can be kept dry State common parasites and diseases in broiler production Parasites (coccidiosis, lice, roundworm) Diseases (viral: Newcastle, Fowl pox) (bacterial: Chronic respiratory disease, Coryza) State the control measures for vices, parasites and diseases Differentiate between indigenous chicken and a broiler

Appendix 1: PRACTICAL SKILLS

Introduction

Paper 2 is a teacher-assessed continuous assessment of the candidate's practical work. The Teacher, who is responsible for allocating marks, is required to submit the complete schedule of all marks for the purposes of moderation. The total marks available for the assessment of the practical project over the two year course are 100. There shall be one practical project worth 60 marks and one written report based on the project worth 40 marks.

Aim

The teacher's assessment of practical work should aim at evaluation of skills and abilities essential to the study of Agriculture that are not suitably measured by theory examinations. These fall mainly into Assessment Objective C.

Moderation

- When several teachers in a Centre are involved in internal assessments, arrangements must be made within the Centre for all candidates to be assessed to a common standard.
- It is essential that, within each Centre, the marks for each skill assigned within different teaching groups (e.g., different classes) are moderated internally for the whole Centre entry.
- The Centre assessments will then be subject to external moderation.
- Individual Candidate Record Cards and Coursework Assessment Summary Forms will be provided by the Examinations Council of Eswatini (ECESWA) and must be submitted to ECESWA by the official deadline, along with a representative sample of work and a teacher's file with the instructions for the practical work and the schemes of assessment.
- If there are ten or fewer candidates, all the work that contributed to the final mark for all the candidates must be submitted. Where there are more than ten candidates, all the work that contributed to the final mark of the sampled candidates must submitted.

Sampling

- Where more than one teacher is involved in marking the work, the sample must include candidates marked by all teachers. Candidates must be selected so that the whole mark range is covered, with marks spaced as evenly as possible from the top mark to the lowest mark.(e.g. when the marks ranges from 50-70, then we can have 50, 52,55, 57, 59, 61,63, 66, 68, 70) as samples
- Sampling of practical exercises should be done as follows:

Number of candidates entered	Number of candidates whose work is required (sample size)
0 - 10	All candidates
11 - 50	10
51 - 100	15
Above 100	20

NOTE: The sampling is based on the final mark indicated in the EPC Paper 2 Summary Sheet. All records and supporting written work of unsampled candidates should be retained at the Centre until the publication of results.

1. **Responsibility** [the ability to assume responsibility for the task in hand, and work from given instructions without detailed supervision and help]

Marking guide		Marks
•	follows written or verbal instructions without the need for help	
•	carries out appropriate safety procedures	5 or 4
•	works well in a group, assumes responsibility easily and leads in the group	
•	follows written or verbal instructions with a little help	3 or 2
•	is aware of the need for safety procedures but has difficulty in recognizing them without guidance	
•	works within the group, shows responsibility for the work	
•	follows written or verbal instructions with considerable help	1 or 0
•	shows little regard for safety procedures, even when told	
•	works alone, shows some responsibility for the work	

2. **Initiative** [the ability to cope with problems arising in connection with the task to see what needs to be done and to take effective action]

Marking guide	
offers solutions or explanations for unexpected problems	5 or 4
recognizes, and is able to anticipate problems	
solves problems without help	
comments on imperfections of practical work	
can plan an investigation involving variables and a control	
offers solutions or explanations for unexpected problems after seeking advice	9 3 or 2
solves problems with help	
recognizes faults in experimental methods, given some indicators	
can plan an investigation with help	
is uncertain how to proceed and requires considerable help	1 or 0
recognizes only the most obvious errors in experimental methods after considerable guidance	
can plan an investigation, but in outline only	

3. Technique[the ability to tackle a practical task in methodical, systematic way and to handle tools skilfully and to good effect]

Marking guide	Marks
approaches tasks methodically and systematically	5 or 4
handles tools/apparatus skilfully and confidently	
carries out practical procedures with dexterity	
handles tools /apparatus effectively	3 or 2
carries out practical procedures adequately	
handles tools /apparatus clumsily	1 or 0
carries out practical procedures with difficulty	

4. Perseverance[the ability to see a task through to a successful conclusion with determination and Sustained effort]

Marking guide		Marks	
•	completes all the required practical tasks and attends to written work	5 or 4	
•	has a positive attitude and is well motivated		
•	carries out repetitive procedures willingly		
•	completes the required practical tasks and attends to written work with a little encouragement	3 or 2	
•	carries out repetitive procedures willingly		
•	does not complete the required practical tasks and attends to written work	1 or 0	
•	is somewhat disinterested /impatient when carrying out work and is disinclined to repeat procedures		

5. Quality [the ability to attend to detail, so that the work is well finished and is well presented]

Marking guide	Marks
performs practical work thoroughly, pays attention to detail and produces a very good final result	5 or 4
produces accurate, clear and neatly presented written work	
performs practical work thoroughly for the most part and produces a satisfactory to good final result	3 or 2
produces mostly accurate and clearly presented written work	
performs practical work in a rushed and superficial way and shows little concern for the finished product	1 or 0
produces inaccurate and poorly presented written work	

Appendix 2: GUIDED WRITE-UP REPORT

Layout of the Guided write-up Report

Title: The report should bear a clear title. This should appear on the first page, together with the name of the candidate and the name of the school.

Introduction:

- Objectives specific purposes of doing the project or practical.
- Materials used listing of inputs, tools and equipment.
- Preparations activities done before commencement of project.

Management Activities: This is a description of how the project was done stating the activities carried out.

For example:

- Describe how work was done from planting to harvesting.
- Describe the management of chickens from arrival to point of sale

Presentation of production records: yield of crops; livestock, production and financial records.

Conclusions:

- Explain if the specific objectives of the project were met
- Problems encountered

Objectives

Marking Guide	Marks
Listed two objectives which are clear	4
Listed two objectives, one specific and one general objective	3
Listed two objectives, both general	2
Listed one objectives which is general	1
No objective stated	0

Materials used

Marking Guide	Marks
Vegetable and Crop production Listed all tools (all garden tools used during the practical), equipment (tractor). Inputs (seeds, seedlings, fertilizer, chemical, manure, etc.)	4
Poultry Production Tools and equipment's (feeders, waters/drinkers/fountains, weighing scale, buckets, brooders, lights etc.) Inputs (feed, vaccine, disinfectant, litter etc.)	4
List most of the tools/equipment and inputs List most of the tools/equipment and some inputs List most of the inputs and some tools and equipment	3 2
List fewer tools/equipment and inputs No tools/equipment and inputs listed	1 0

Preparation

Marking Guide	Marks
Vegetable and Crop production	
Discussed all activities in preparation in its sequential order, prior to the management stage (primary preparation; land clearing, secondary preparation; cultivation, marking out of plots, manure application etc.) Planting; direct and indirect.	8
Poultry Production	
Discussed all preparation done before arrival and on arrival of birds	
(Cleaning out any old litter, cleaning and disinfecting the poultry house two weeks before arrival of birds, making necessary repairs of the poultry house etc.).	6
Discussing some of the activities in preparation in its sequential order.	5
Discussing some of the activities in preparation in no particular order.	3
Discussing fewer activities in preparation in order.	
Discussing fewer activities in preparation in no particular order.	2
No discussion on preparation of activities.	0

Management activities

Marking Guide	Marks
Vegetable and Crop production	
Describe all management activities done from planting to harvesting in order	10
(Watering, gap filling/replacing transplants, thinning out, mulching, weeding, topdressing, controlling pests and diseases etc.) All activities done properly/ one activity not done properly.	
Poultry Production	
Describing all management activities done from arrival until sale of birds.	9
(Feeding, watering, vaccination, litter management, temperature adjustment etc.). All activities done properly/ one activity not done properly.	
Vegetable and Crop production	0
Describe all management activities done from planting to harvesting in order	8
(Watering, gap filling/replacing transplants, thinning out, mulching, weeding, topdressing, controlling pests and diseases etc). Two activities not done properly/three activities not done properly.	
Poultry Production	
Describing all management activities done from arrival until sale of birds.	6
(Feeding, watering, vaccination, litter management, temperature adjustment etc). Two activities not done properly/ three activities not done properly.	
Included most of the management activities done from planting to harvesting in the discussion.	
Included most of the management activities done from planting to harvesting without discussion.	5
Included most of the management activities done from arrival until sale of birds during the discussion.	3
Included most of the management activities done from arrival until sale of birds without discussion.	
Mention some of the major management activities with little discussion.	2
Mention some of the major management activities with no discussion.	2
No management activities and no discussion	0

Presentation of Production Records

Marking Guide	Marks
Compile diary, production/harvesting records and financial records (costa/ expenditure, income/returns and profit/loss) correctly. All records properly compiled. Compile diary, production/harvesting records and financial records (costa/ expenditure, income/returns and profit/loss) correctly. All records compiled with	10
minor information missing.	9
Compile production/harvesting, financial records with a shallow diary. (costa/ expenditure, income/returns and profit/loss).	
Compile diary, financial records correctly. No production/harvesting records (costa/ expenditure, income/returns and profit/loss).	8
Compile diary, production/harvesting records correctly and no financial records(costa/ expenditure, income/returns and profit/loss).	6
Compile production/harvesting and financial records correctly and no diary (costa/ expenditure, income/returns and profit/loss).	
Presented most of the production records and all the information in the records is correct.	
Presented most of the production records and some of the information in the records is correct.	5 3
Presented most of the production records and most of the information in the records is correct.	
Fewer production records presented with correct information.	2
Fewer production records presented with some of the information not correct. No production and financial records presented.	0

Conclusion

Marking Guide	Marks
A brief conclusion of all the two specific objectives of the practical.	
Stated at least two challenges/problems encountered, and all relevant solutions.	4
A brief explanation of all the two specific objectives of the practical were met.	4
Stated at least two challenges/problems encountered, and some relevant solutions.	3
Conclusion for one objectives done. Stated one challenge, one problem and a relevant solution.	
Conclusion for one objectives done. Stated one challenge, one problem and no relevant solution.	
Conclusion for one objectives done. Stated one challenge, a relevant solution and no problem.	
Conclusions of one objective and relevant solution.	1
Presented challenges and solutions only.	
No conclusions for objective, no challenges, no relevant solution and no problem.	0

Appendix 3: Terms used in teaching and assessment

WORD MEANING

Analyse Examine information in detail to discover patterns or relationships

Calculate A numerical answer is required - working must be shown

Compare Find resemblances and differences

Define A literal statement is required

Describe Write down what you do, or what you would see, in as much detail as possible

Discuss Give a critical account of the points involved in the topic

Differentiate Show the difference between one or more variables

Estimate Implies a reasoned statement or calculation about something

Explain Give a reason for your answer

Find A general term which means calculate, determine or measure

Give /state

/write down Write down your answer

Identify Find out what is unique about a material or situation

Interpret Reasoning or some reference to theory, depending on the context

List Give a number of points, generally each of one word

Outline Give a brief answer writing down the main points

Recognise Be aware of a fact or problem

Relate Find the relationship between one or more variables

Select Choose from a number of alternatives

In case of diagrams, make a simple, freehand drawing, and in graph work, the

shape and /or position of the curve should be given

StudyUse the information or data provided to investigate a problem in a systematic

wav

Use your knowledge of science and the information in the question to give

Suggest what you think is the best answer

EPC AGRICULTURE – Practical Activities (Project) Paper 2

Individual Candidate Record Card

Centre number	Centre Name			October	2	0	
Candidate Number	andidate Name						
Brief description of practical exercises undertaken practical activities	1 Responsibility (5)	2 Initiative (5)	3 Technique (5)	4 Perseveran (5)	nce	(5 Quality (5)
Total per category scale up to 12 (x/5x12) Marks to be transferred to practical activities	/5 s	/5	/5	/5			/5
Assessment Summary Form	/12	/12	/12	/12			/12
		Total marks obtained			60		

Instructions for completing practical activity assessment summary forms

- 1. Complete the information at the head of the form
- 2. Mark each practical activity for each candidate according to instructions given in the syllabus.
- 3. Enter marks and total marks in the appropriate spaces.
- 4. Ensure that the addition of marks is independently checked.
- **5.** Retain the un-sampled practical activities at the school

EPC AGRICULTURE Guided Write-up Report Paper 2

Individual Candidate Record Card

Centre number		Centre Name			October	2	0		
Candidate Number		Candidate Name							
Brief description of undertaken activities	1 Objective(s (4)	2 Materials used (4)	3 Preparations (8)	4 Management activities (10)	Management Presentation activities (10)				
Marks to be transferred to practical									
Assessment Summary Form	/4	/4	/8	/10	/10		/4		
	60								

Instructions for completing guided write-up reports assessment summary forms

- 1. Complete the information at the head of the form
- 2. Mark each practical activity for each candidate according to instructions given in the syllabus.
- 3. Enter marks and total marks in the appropriate spaces.
- 4. Ensure that the addition of marks is independently checked.
- 5. Retain the un-sampled practical activities at the school

EPC Paper 2 Summary Sheet Agriculture – Practical Activities and Guided write-up reports form

Centre Number			Centre Name					October		2	0			
Candidate number		С	andidate Name		Practical Activitie mark (40)		G	uided Write mark (60)		Total mark 100			Moderated mark 100	
Name of teacher				Signature)		Cell			Date				
Headteacher's Sig School Stamp	gnature -	+						Date						

Instructions for completing practical activities assessment summary forms

- 1. Complete the information at the head of the form
- 2. List the candidates in an order that will allow ease of transfer of information to a computer printed mark sheet.
- 3. Transfer each candidate's marks from his/her individual candidate record card to this form
- **4.** The teacher completing the form should check the form and complete and sign the bottom portion.