



education

Department:
Education
REPUBLIC OF SOUTH AFRICA

NATIONAL CERTIFICATE (VOCATIONAL)

SUBJECT GUIDELINES

ADVANCED PLANT PRODUCTION

NQF Level 4

September 2007

ADVANCED PLANT PRODUCTION – LEVEL 4

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INTRODUCTION

A. What is Advanced Plant Production?

Advanced Plant Production is a Vocational subject in the Primary Agriculture programme of the National Certificates (Vocational). Advanced Plant Production deals with the physiology and anatomy of plants and the establishment of vegetable and agronomic crops and fruits (subtropical and deciduous). The subject covers establishment practices, cultivation, crop management principles, harvesting and post-harvest storage.

B. Why is Advanced Plant Production important in the Primary Agriculture programme?

Advanced Plant Production is one of the NQF Level 2 to 4 Vocational subjects in the National Certificates (Vocational). Students studying and gaining competence in this subject will fulfil one of the pass requirements in the Primary Agriculture qualification. Gaining skills and techniques in the establishment and management of crops and fruits creates better employment or self-employment opportunities for students when they have completed the programme. It further enables students to enter into higher education.

C. The link between the Advanced Plant Production Learning Outcomes and the Critical and Developmental Outcomes

The Learning Outcomes in Advanced Plant Production assist students to achieve the Critical and Developmental Outcomes. All the Advanced Plant Production Learning Outcomes relate to and promote the following outcomes: self organisation, communication, self development, teamwork, problem-solving, science, technology and information gathering and evaluation.

D. Factors that contribute to achieving Advanced Plant Production Learning Outcomes

The following factors will assist students to achieve the Advanced Plant Production Learning Outcomes:

- Enabling environment – Advanced Plant Production should be presented in a context of small and medium enterprises (SMMEs), emerging small-scale farmers and personal needs.
- Resources – Students must have access to all the necessary resources depending on the task.
- Experiential exposure – Students must be exposed to practical and appropriately simulated work environments.
- Suitably qualified lecturers – Lecturers should be well informed about legislation, community issues and available support systems from, for example the Departments of Agriculture and Environmental Affairs. They should also possess technical knowledge of Advanced Plant Production.

1 DURATION AND TUITION TIME

This is a one year instructional programme comprising 200 teaching and learning hours. This is a fulltime subject however it may be offered on a part time basis to people already employed in a farming industry as long as all the promotional and assessment requirements are met.

Provision for students with special education needs (LSEN) will be made by colleges offering the qualification. This will help to eliminate barriers to learning.

2 SUBJECT LEVEL FOCUS

- Demonstrate an understanding of crop production

3 ASSESSMENT REQUIREMENTS

3.1 Internal assessment (50 percent)

All internal assessments must be finalised by an assessor who has been declared competent by an accredited provider. Students will have to be prepared for assessment according to the assessment policy of the institution.

3.1.1 Theoretical component

The student will be required to achieve all outcomes of this subject at this level. Assessment of all topics in this subject will contribute to the formative assessment of the course. The theoretical component forms 40 percent of the internal assessment mark.

3.1.2 Practical component

The practical component forms 60 percent of the internal assessment for this subject at this level. The outcomes that are addressed in each assessment must be clearly indicated.

All practical learning activities must be recorded in Portfolio of Evidence for each student. This can be used as part of continuous assessment.

Practical activities may include case studies, assignments, integrated activities, knowledge tests, group work and group exercises, discussions, research projects, presentations (lectures, demonstrations, group discussions and activities, practical work, observation, role play and self activities), use of aids, visits, guest speaker presentations, practical experiential training and workplace practical, excursions.

- **Some examples of practical assessments include, but are not limited to:**

- Presentations (practical work, observation, role play, self activity, judging and evaluation)
- Field tests
- Research
- Structured environment

- **Definition of the term “Structured Environment”**

“Structured environment” for the purposes of assessment refers to an actual or simulated workplace, or workshop environment.

Evidence of this practical component must be provided in the form of a logbook with a clear listing of the competencies to be assessed. The following information must be contained in the logbook:

- Name of student
- Field tests (objective, when and how they were done)
- Soil science activities
- Place where the practical component was achieved
- List of outcomes to be achieved in the environment (tasks, tests)
- Time period spent on the activity
- Comment on the outcomes
- Student signature, facilitator’s or supervisor’s signature.

For the logbook to be regarded as valid evidence it must be signed off by an officially assigned supervisor and by the student.

- **Evidence in practical assessments**

All evidence pertaining to evaluation of practical work must be reflected in the student's Portfolio of Evidence. The tools and instruments constructed and used for the purpose of conducting such assessments must be clear from evidence contained in the PoE.

3.1.3 Processing of internal assessment mark for the year

A year mark out of 100 is calculated by adding the marks of the theoretical component and the practical component of the internal continuous assessment.

3.1.4 Moderation of internal assessment mark

Internal assessment is subjected to both internal and external moderation procedures as contained in the *National Examinations Policy for FET College Programme*.

3.2 **External assessment (50 percent)**

A national examination is conducted annually in October or November by means of a paper/s set externally and marked and moderated externally

Details in respect of external assessment are contained in the *Assessment Guidelines: Advanced Plant Production (Level 4)*.

4 **WEIGHTED VALUES OF TOPICS**

TOPICS	WEIGHTED VALUE
1. Plant propagation	60
2. Flower production	40
TOTAL	100

5 **CALCULATION OF FINAL MARK**

Continuous assessment: Student's mark/100 x 50 = a mark out of 50 (a)

Examination mark: Student's mark/100 x 50 = a mark out of 50 (b)

Final mark: (a) + (b) = a mark out of 100

All marks are systematically processed and accurately recorded to be available as hard copy evidence for, amongst others, purposes of moderation and verification.

6 **PASS REQUIREMENTS**

The student will have to obtain fifty (50) percent in ICASS and fifty (50) percent in the examination.

7 **SUBJECT AND LEARNING OUTCOMES**

On completion of Advanced Plant Production Level 4 the student should have covered the following topics:

Topic 1: Plant propagation

Topic 2: Flower Production

7.1 Topic 1: Plant Propagation

7.1.1 Subject Outcome 1: Explain plant propagation methods in order to get a good grasp of all aspects concerning the most important and most commonly used plant propagation techniques and when each is used.

Learning Outcome:

- Explain asexual and sexual plant reproduction, giving examples.
- Identify the methods of asexual and sexual plant reproduction, giving examples.
- Define propagation.
- Explain plant propagation methods and give examples.
Range: Plant propagation methods refer to vegetative and seed propagation.
- Acquire experience of propagation techniques and explain when each should be employed.
Range: Propagation techniques refer to grafting, air-layering and budding.
- Select the plant material and the hormones required in order to perform different propagation techniques.

7.1.2 Subject Outcome 2: Carry out plant propagation techniques within a nursery environment according to workplace procedures.

Learning Outcome:

- Define nursery.
- Identify and explain nursery operations.
- Apply plant propagation techniques within a nursery environment.

7.2 Topic 2: Flower Production

7.2.1 Subject Outcome 1: Apply flower production in a nursery environment.

Learning Outcome:

- Explain the concept of flower 'cultivar' flower and give examples.
- Explain the economical importance of each cultivar.
- Apply the propagation techniques which are relevant in flower production.
- Identify the most important pests and diseases affecting flowers and appropriate control methodologies.
- Explain the flower production process and give examples.
Range: Flower production processes refers to management practices from planting to wholesaler.

1 RESOURCE NEEDS FOR THE TEACHING OF PRIMARY AGRICULTURE

8.1 Phased development of training and demonstration farm

The following is a summarised phased development approach that is suggested for the establishment of a training and demonstration farm mainly for the NCV programme. It is suggested that the development of the programme be done in phases. Staff appointment has not been included

- **Phase 1:**
 - Farm layout or land use planning
 - Bush clearing on cropland
- **Phase 2:**
 - Build, equip and stock the broiler unit
 - Build, equip and stock the egg layer unit
 - Install irrigation reticulation
 - Establish vegetable field crops and seedling units
 - Establish a beekeeping unit
 - Erect external security fence

• **Phase 3**

- Establish pastures
- Erect internal fences and allocate grazing camps

• **Phase 4**

- Build, equip and stock dairy, beef, goat and pig units
- Extend training courses

1.0 Resource needs training and demonstration

FARM INFRASTRUCTURE	
1. BROILER PRODUCTION AND PROCESSING UNIT	<ul style="list-style-type: none"> • Building costs: 5 x 57.5m² • Equipment (brooders, drinkers, tube feeders) • Complete broiler processing equipment
2. LAYER AND EGG PROCESSING UNIT	<ul style="list-style-type: none"> • Building costs: 1 x 64m² • Equipment (includes cages) • 500 point of lay 20 week old pullets
3. DAIRY AND MILK PROCESSING UNIT	<ul style="list-style-type: none"> • Buildings • Equipment for milking and milk processing • 12 heifers
4. BEEF UNIT	<ul style="list-style-type: none"> • Sheltered beef feedlot unit: 1 x 30m • Beef handling pens and equipment • 12 Nguni heifers • 1 Nguni bull
5. GOAT UNIT	<ul style="list-style-type: none"> • 20 young nanny goats • 2 quality breeding billy goats • Goat handling pens and equipment
6. PIG UNIT	<ul style="list-style-type: none"> • Buildings • Equipment (brooders, farrowing rails, troughs) • 8 gilts and 2 boars
7. APIARY UNIT	<ul style="list-style-type: none"> • Apiary equipment including honey extractor
8. ESTABLISHED PASTURES	<ul style="list-style-type: none"> • Land preparation, fertilisation planting 8ha
9. IRRIGATION	<ul style="list-style-type: none"> • 1ha vegetables, 4ha maize/beans and 8ha pastures • Rising main from the river to reservoir and gravity flow (lower lands, paddocks) or booster pump (upper lands)
10. FARM TOOLS AND AGROCHEMICALS	<ul style="list-style-type: none"> • Equipment (hand tools, knapsacks, mower, wheelbarrows, spades etc.) • Farm shed
11. SEEDLING NURSERY (Vegetables, trees, shrubs)	<ul style="list-style-type: none"> • Shadecloth, poles, standpipes, equipment
12. WATER RETICULATION	<ul style="list-style-type: none"> • Reticulation to paddocks, livestock units
13. VEHICLES	<ul style="list-style-type: none"> • 1 tonne pick up and canopy • 1 medium size tractor • 1 mini bus for transporting learners • Tractor trailer and implements
14. FENCING	<ul style="list-style-type: none"> • External security fence: 2 km • Internal fences: 1.6km
15. MISCELLANEOUS	<ul style="list-style-type: none"> • Laboratory with equipment for plant and soil science • Laboratory with equipment for animal & poultry science • Teaching aids (data projectors, screen, DVD player etc.) • Computers with internet links • Library with relevant books and magazines