NATIONAL CERTIFICATES (VOCATIONAL)

ASSESSMENT GUIDELINES

ANIMAL PRODUCTION

NQF Level 4

September 2007

ANIMAL PRODUCTION– LEVEL 4

CONTENTS

SECTION A: PURPOSE OF THE SUBJECT ASSESSMENT GUIDELINES

This document provides the lecturer with guidelines to develop and implement a coherent, integrated assessment system for Animal Production in the National Certificates (Vocational). It must be read with the *National Policy Regarding Further Education and Training Programmes: Approval of the Documents, Policy for the National Certificates (Vocational) Qualifications at Levels 2 to 4 on the National Qualifications Framework (NQF)*. This assessment guideline will be used for National Qualifications Framework Levels 2-4.

This document explains the requirements for the internal and external subject assessment. The lecturer must use this document with the *Subject Guidelines: Animal Production* to prepare for and deliver Animal Production. Lecturers should use a variety of resources and apply a range of assessment skills in the setting, marking and recording of assessment tasks.

SECTION B: ASSESSMENT IN THE NATIONAL CERTIFICATES (VOCATIONAL)

1   ASSESSMENT IN THE NATIONAL CERTIFICATES (VOCATIONAL)

Assessment in the National Certificates (Vocational) is underpinned by the objectives of the National Qualifications Framework (NQF). These objectives are to:

- Create an integrated national framework for learning achievements.
- Facilitate access to and progression within education, training and career paths.
- Enhance the quality of education and training.
- Redress unfair discrimination and past imbalances and thereby accelerate employment opportunities.
- Contribute to the holistic development of the student by addressing:
  - social adjustment and responsibility;
  - moral accountability and ethical work orientation;
  - economic participation; and
  - nation-building.

The principles that drive these objectives are:

- *Integration*

To adopt a unified approach to education and training that will strengthen the human resources development capacity of the nation.

- *Relevance*

To be dynamic and responsive to national development needs.

- *Credibility*

To demonstrate national and international value and recognition of qualification and acquired competencies and skills.

- *Coherence*

To work within a consistent framework of principles and certification.

- *Flexibility*

To allow for creativity and resourcefulness when achieving Learning Outcomes, to cater for different learning styles and use a Range of assessment methods, instruments and techniques.

- *Participation*

To enable stakeholders to participate in setting standards and co-ordinating the achievement of the qualification.

- *Access*

To address barriers to learning at each level to facilitate students' progress.

- *Progression*

To ensure that the qualification framework permits individuals to move through the levels of the national qualification via different, appropriate combinations of the components of the delivery system.

- *Portability*

To enable students to transfer credits of qualifications from one learning institution and/or employer to another institution or employer.

- *Articulation*

To allow for vertical and horizontal mobility in the education system when accredited pre-requisites have been successfully completed.

- *Recognition of Prior Learning*

To grant credits for a unit of learning following an assessment or if a student possesses the capabilities specified in the outcomes statement.

- *Validity of assessments*

To ensure assessment covers a broad Range of knowledge, skills, values and attitudes (SKVAs) needed to demonstrate applied competency. This is achieved through:

- clearly stating the outcome to be assessed;
- selecting the appropriate or suitable evidence;
- matching the evidence with a compatible or appropriate method of assessment; and
- selecting and constructing an instrument(s) of assessment.

- *Reliability*

To assure assessment practices are consistent so that the same result or judgment is arrived at if the assessment is replicated in the same context. This demands consistency in the interpretation of evidence; therefore, careful monitoring of assessment is vital.

- *Fairness and transparency*

To verify that no assessment process or method(s) hinders or unfairly advantages any student. The following could constitute unfairness in assessment:

- Inequality of opportunities, resources or teaching and learning approaches
- Bias based on ethnicity, race, gender, age, disability or social class
- Lack of clarity regarding Learning Outcome being assessed
- Comparison of students' work with other students, based on learning styles and language

- *Practicability and cost-effectiveness*

To integrate assessment practices within an outcomes-based education and training system and strive for cost and time-effective assessment.

2   ASSESSMENT FRAMEWORK FOR VOCATIONAL QUALIFICATIONS

The assessment structure for the National Certificates (Vocational) qualification is as follows:

2.1   Internal continuous assessment (ICASS)

Knowledge, skills values, and attitudes (SKVAs) are assessed throughout the year using assessment instruments such as projects, tests, assignments, investigations, role-play and case studies. The internal continuous assessment (ICASS) practical component is undertaken in a real workplace, a workshop or a "Structured Environment". This component is moderated internally and externally quality assured by Umalusi. All internal continuous assessment (ICASS) evidence is kept in a Portfolio of Evidence (PoE) and must be readily available for monitoring, moderation and verification purposes.

2.2   External summative assessment (ESASS)

The external summative assessment is either a single or a set of written papers set to the requirements of the Subject Learning Outcomes. The Department of Education administers the theoretical component according to relevant assessment policies.

A compulsory component of external summative assessment (ESASS) is the **integrated summative assessment task (ISAT).** This assessment task draws on the students' cumulative learning throughout the year. The task requires **integrated application of competence** and is executed under strict assessment conditions. The task should take place in a simulated or "Structured Environment". The integrated summative assessment task (ISAT) is the most significant test of students' ability to apply acquired knowledge.

The integrated assessment approach allows students to be assessed in more than one subject with the same integrated summative assessment task (ISAT).

External summative assessments will be conducted annually between October and December, with provision made for supplementary sittings.

3   MODERATION OF ASSESSMENT

3.1   Internal moderation

Assessment must be moderated according to the internal moderation policy of the Further Education and Training (FET) college. Internal college moderation is a continuous process. The moderator's involvement starts with the planning of assessment methods and instruments and follows with continuous collaboration with and support to the assessors. Internal moderation creates common understanding of Assessment Standards and maintains these across vocational programmes.

3.2   External moderation

External moderation is conducted by the Department of Education, Umalusi and, where relevant, an Education and Training Quality Assurance (ETQA) body according to South African Qualifications Authority (SAQA) and Umalusi standards and requirements.

The external moderator:

- monitors and evaluates the standard of all summative assessments;
- maintains standards by exercising appropriate influence and control over assessors;
- ensures proper procedures are followed;
- ensures summative integrated assessments are correctly administered;
- observes a minimum sample of ten (10) to twenty-five (25) percent of summative assessments;
- gives written feedback to the relevant quality assuror; and
- moderates in case of a dispute between an assessor and a student.

Policy on inclusive education requires that assessment procedures be customised for students who experience barriers to learning, and supported to enable these students to achieve their maximum potential.

4   PERIOD OF VALIDITY OF INTERNAL CONTINUOUS ASSESSMENT (ICASS)

The period of validity of the internal continuous assessment mark is determined by the *National Policy on the Conduct, Administration and Management of the Assessment of the National Certificates (Vocational).*

The internal continuous assessment (ICASS) must be re-submitted with each examination enrolment for which it constitutes a component.

5   ASSESSOR REQUIREMENTS

Assessors must be subject specialists and should ideally be declared competent against the standards set by the ETDP SETA. If the lecturer conducting the assessments has not been declared a competent assessor, an assessor who has been declared competent may be appointed to oversee the assessment process to ensure the quality and integrity of assessments.

6   TYPES OF ASSESSMENT

Assessment benefits the student and the lecturer. It informs students about their progress and helps lecturers make informed decisions at different stages of the learning process. Depending on the intended purpose, different types of assessment can be used.

6.1 Baseline assessment

At the beginning of a level or learning experience, baseline assessment establishes the knowledge, skills, values and attitudes (SKVAs) that students bring to the classroom. This knowledge assists lecturers to plan learning programmes and learning activities.

6.2 Diagnostic assessment

This assessment diagnoses the nature and causes of learning barriers experienced by specific students. It is followed by guidance, appropriate support and intervention strategies. This type of assessment is useful to make referrals for students requiring specialist help.

6.3 Formative assessment

This assessment monitors and supports teaching and learning. It determines student strengths and weaknesses and provides feedback on progress. It determines if a student is ready for summative assessment.

6.4 Summative assessment

This type of assessment gives an overall picture of student progress at a given time. It determines whether the student is sufficiently competent to progress to the next level.

7 PLANNING ASSESSMENT

An assessment plan should cover three main processes:

7.1 Collecting evidence

The assessment plan indicates which Subject Outcomes and Assessment Standards will be assessed, what assessment method or activity will be used and when this assessment will be conducted.

7.2 Recording

Recording refers to the assessment instruments or tools with which the assessment will be captured or recorded. Therefore, appropriate assessment instruments must be developed or adapted.

7.3 Reporting

All the evidence is put together in a report to deliver a decision for the subject.

8 METHODS OF ASSESSMENT

Methods of assessment refer to who carries out the assessment and includes lecturer assessment, self-assessment, peer assessment and group assessment.

LECTURER ASSESSMENT	The lecturer assesses students' performance against given criteria in different contexts, such as individual work, group work, etc.
SELF-ASSESSMENT	Students assess their own performance against given criteria in different contexts, such as individual work, group work, etc.
PEER ASSESSMENT	Students assess another student's or group of students' performance against given criteria in different contexts, such as individual work, group work, etc.
GROUP ASSESSMENT	Students assess the individual performance of other students within a group or the overall performance of a group of students against given criteria.

9 INSTRUMENTS AND TOOLS FOR COLLECTING EVIDENCE

All evidence collected for assessment purposes is kept or recorded in the student's PoE.

The following table summarises a variety of methods and instruments for collecting evidence. A method and instrument is chosen to give students ample opportunity to demonstrate the Subject Outcome has been attained. This will only be possible if the chosen methods and instruments are appropriate for the target group and the Specific Outcome being assessed.

	METHODS FOR COLLECTING EVIDENCE		
	Observation-based (Less structured)	**Task-based** (Structured)	**Test-based** (More structured)
Assessment instruments	• Observation • Class questions • Lecturer, student, parent discussions	• Assignments or tasks • Projects • Investigations or research • Case studies • Practical exercises • Demonstrations • Role-play • Interviews	• Examinations • Class tests • Practical examinations • Oral tests • Open-book tests
Assessment tools	• Observation sheets • Lecturer's notes • Comments	• Checklists • Rating scales • Rubrics	• Marks (e.g. %) • Rating scales (1-7)
Evidence	• Focus on individual students • Subjective evidence based on lecturer observations and impressions	**Open middle**: Students produce the same evidence but in different ways. **Open end**: Students use same process to achieve different results.	Students answer the same questions in the same way, within the same time.

10 TOOLS FOR ASSESSING STUDENT PERFORMANCE

Rating scales are marking systems where a symbol (such as 1 to 7) or a mark (such as 5/10 or 50%) is defined in detail. The detail is as important as the coded score. Traditional marking, assessment and evaluation mostly used rating scales without details such as what was right or wrong, weak or strong, etc.

Task lists and **checklists** show the student what needs to be done. These consist of short statements describing the expected performance in a particular task. The statements on the checklist can be ticked off when the student has adequately achieved the criterion. Checklists and task lists are useful in peer or group assessment activities.

Rubrics are a hierarchy (graded levels) of criteria with benchmarks that describe the minimum level of acceptable performance or achievement for each criterion. Using rubrics is a different way of assessing and cannot be compared to tests. Each criterion described in the rubric must be assessed separately. Mainly two types of rubrics, namely holistic and analytical, are used.

11 SELECTING AND/OR DESIGNING RECORDING AND REPORTING SYSTEMS

The selection or design of recording and reporting systems depends on the purpose of recording and reporting student achievement. **Why** particular information is recorded and **how** it is recorded determine which instrument will be used.

Computer-based systems, for example spreadsheets, are cost and time effective. The recording system should be user-friendly and information should be easily accessed and retrieved.

12 COMPETENCE DESCRIPTIONS

All assessment should award marks to evaluate specific assessment tasks. However, marks should be awarded against rubrics and not be simply a total of ticks for right answers. Rubrics should explain the competence level descriptors for the skills, knowledge, values and attitudes (SKVAs) that a student must demonstrate to achieve each level of the rating scale.

When lecturers or assessors prepare an assessment task or question, they must ensure that the task or question addresses an aspect of a Subject Outcome. The relevant Assessment Standard must be used to create the rubric to assess the task or question. The descriptions must clearly indicate the minimum level of attainment for each category on the rating scale.

13   STRATEGIES FOR COLLECTING EVIDENCE

A number of different assessment instruments may be used to collect and record evidence. Examples of instruments that can be (adapted and) used in the classroom include:

13.1   Record sheets

The lecturer observes students working in a group. These observations are recorded in a summary table at the end of each project. The lecturer can design a record sheet to observe students' interactive and problem-solving skills, attitudes towards group work and involvement in a group activity.

13.2   Checklists

Checklists should have clear categories to ensure that the objectives are effectively met. The categories should describe how the activities are evaluated and against what criteria they are evaluated. Space for comments is essential.

SECTION C: ASSESSMENT IN ANIMAL PRODUCTION

1   SCHEDULE OF ASSESSMENT

At NQF levels 2, 3 and 4, lecturers will conduct assessments as well as develop a schedule of formal assessments that will be undertaken in the year. All three levels also have an external examination that accounts for 50 percent of the total mark. The marks allocated to assessment tasks completed during the year, kept or recorded in a PoE account for the other 50 percent.

The PoE and the external assessment include practical and written components. The practical assessment in Animal Production must, where necessary, be subjected to external moderation by Umalusi or an appropriate Education and Training Quality Assurance (ETQA) body, appointed by the Umalusi Council in terms of Section 28(2) of the *General and Further Education and Training Quality Assurance Act, 2001 (Act No. 58 of 2001).*

2   RECORDING AND REPORTING

Animal Production, as is the case for all the other Vocational subjects, is assessed according to five levels of competence. The level descriptions are explained in the following table.

Scale of Achievement for the Vocational component

RATING CODE	RATING	MARKS %
5	Outstanding	80-100
4	Highly Competent	70-79
3	Competent	50-69
2	Not yet competent	40-49
1	Not achieved	0-39

The programme of assessment should be recorded in the Lecturer's Portfolio of Assessment for each subject. The following at least should be included in the Lecturer's Assessment Portfolio:

- A contents page
- The formal schedule of assessment
- The requirements for each assessment task
- The tools used for each assessment task
- Recording instrument(s) for each assessment task
- A mark sheet and report for each assessment task

The college must standardise these documents.

The student's PoE must include at least:

- A contents page
- The assessment tasks according to the assessment schedule
- The assessment tools or instruments for the task
- A record of the marks (and comments) achieved for each task

Where a task cannot be contained as evidence in the PoE, its exact location must be recorded and it must be readily available for moderation purposes.

ASSESSMENT OF ANIMAL PRODUCTION

LEVEL 4

3 INTERNAL ASSESSMENT OF SUBJECT OUTCOMES IN ANIMAL PRODUCTION - LEVEL 4

Topic 1: Advanced animal nutrition

SUBJECT OUTCOME	
1.1 Explain the main components of the diet of farm animals and carry out simple food tests.	
ASSESSMENT STANDARD	**LEARNING OUTCOME**
• Explanation is clear and accurate	• Explain the main groups of food chemicals and (for larger molecules) the kinds of smaller molecules which join together to form them, and outline the main functions of each in the body. *Range: Groups of food refers to carbohydrates (starch, glycogen, cellulose, sugars); lipids (fats, oils, fatty acids and glycerol); proteins (some examples, and amino acids including the essential amino acids); vitamins; mineral salts. Detailed structural formulae NOT needed.*
• Samples are handled safely and hygienically without contamination	• Handle samples of the different groups in laboratory practical situations.
• Food tests are successfully carried out and results are recorded	• Do simple food tests (e.g. iodine for starch, Biuret for protein, 'clear patch on paper' test for lipids) in laboratory on naturally occurring and packaged animal feedstuffs.
ASSESSMENT TASKS OR ACTIVITIES	
• Group exercises, theory tests, assignments. • Laboratory practical work as described in Learning Outcomes.	

SUBJECT OUTCOME	
1.2 Explain how digestion and absorption occur in farm animals. *Range: Non-ruminants (pigs, poultry) and ruminants (sheep, goats, cattle).*	
ASSESSMENT STANDARD	**LEARNING OUTCOME**
• Nutritional requirements for cattle, goat, pigs, poultry, and sheep are identified and explained.	• Explain how digestion and absorption occur in the guts of farm animals, and point to the various parts in both diagrams and carcasses and say what each part does. *Range: Structure and functions of the following components:* ▪ *Teeth* ▪ *Saliva and its enzymes* ▪ *Oesophagus (including peristalsis and sphincters)* ▪ *Gizzard in birds* ▪ *Stomach and its enzymes; acid medium* ▪ *Chambers of the ruminant stomach and their functions, and the role of bacteria* ▪ *Duodenum and small intestine and their enzymes* ▪ *Caecum and large intestine* ▪ *The role of the liver in processing absorbed molecules coming from the gut*
ASSESSMENT TASKS OR ACTIVITIES	
Students explain in theory and do in practice the activities listed in the Learning Outcomes.	

SUBJECT OUTCOME
1.3 Estimate total nutritional requirements, what is provided by grazing, and the choice and use of food supplements.   *Range: Metabolisable energy; proteins (with special reference to essential amino acids); vitamins; salts; fibre/roughage.*

ASSESSMENT STANDARD	LEARNING OUTCOME
• Accurate outline is provided.	• Outline the kinds of nutrients needed by animals kept under different environments (e.g. grazing in rainy and dry seasons, intensive rearing) and provide some indication of quantities
• Explanation is correct	• Explain factors influencing nutrient needs, e.g. phases of growth, temperature, production of eggs or milk.
• Description is accurate	• Using tables of information provided, describe the composition of some common foodstuffs, including hay, supplementary concentrates, and complete diets such as different kinds of poultry mash or pig feeds.
• Explanation is accurate, any adjustment appropriate and successful.	• Explain with examples how to adjust the feed of livestock to fit changing circumstances. Adjust feed of livestock if appropriate circumstances arise.

ASSESSMENT TASKS OR ACTIVITIES
• Students adjust feed of livestock if appropriate circumstances arise.

SUBJECT OUTCOME
1.4 Outline common problems in nutrition that affect the growth of livestock, and how these may be addressed.

ASSESSMENT STANDARD	LEARNING OUTCOME
• Problems, and methods of dealing with them, are explained.	• Outline common problems in nutrition that affect the growth of livestock, and how these may be addressed.
• Problems are accurately diagnosed, with reasons, and appropriate action is suggested.	• Identify the groups of symptoms involved in such problems, in live animals and in pictures, and suggest appropriate action in each case.

ASSESSMENT TASKS OR ACTIVITIES
Students do, in theory and practice, the activities outlined in the Learning Outcomes.

Topic 2: Cattle farming

SUBJECT OUTCOME
2.1 Identify and describe the main types of cattle, and breeds within the types, in terms of their suitability to production and adaptability to environmental conditions.   *Range: Environmental conditions refer to climate, and vegetation.*

ASSESSMENT STANDARD	LEARNING OUTCOME
• Breeds are correctly identified with real animals, pictures or photographs as appropriate.	• Identify the main types and breeds of cattle found in southern Africa.
• Characteristics of breeds, and suitable kinds of enterprise and location are accurately given.	• Explain the characteristics of each and the kinds of farm enterprise and location to which they are suited.

ASSESSMENT TASKS OR ACTIVITIES
• Students identify breeds in practical, supplemented by use of photographs and pictures where necessary.   • Theory: assignments, tests.

SUBJECT OUTCOME

2.2 Identify and explain breeding cycles in cattle in order to ensure proper planning for calving times.
Range: Breeding cycles refers to reproduction cycle and milk production cycle.

ASSESSMENT STANDARD	LEARNING OUTCOME
• Explanation is clear and accurate.	• Explain the oestrus cycle, including the main hormones involved.
• Explanation is clear and identification correct.	• Explain how to tell when a cow is coming into heat and identify such animals in the field.
• Demonstration is clear and a suitable plan is produced.	• Show how to plan calving and lactation times of animals within a herd. *Range: Instructor can design a suitable imaginary herd*

ASSESSMENT TASKS OR ACTIVITIES
Students explain in theory and do in practice the activities listed in the Learning Outcomes.

SUBJECT OUTCOME

2.3 Explain the principles of rearing calves for both dairy and meat production.

ASSESSMENT STANDARD	LEARNING OUTCOME
• A suitable plan is outlined and explained.	• Outline a plan for rearing calves over a period of a year, explaining the reasons for each action.
• Calves ae successfully cared for and appropriate records are kept.	• Care for calves, including handling, feeding, identifying problems and dealing with them with the help of a supervisor.

ASSESSMENT TASKS OR ACTIVITIES
Students explain in theory and do in practice the activities listed in the Learning Outcomes.

SUBJECT OUTCOME

2.4 Explain feeding requirements of cattle in relation to their growth stages.

ASSESSMENT STANDARD	LEARNING OUTCOME
• Feeding requirements are correctly calculated, estimation is explained and information is used.	• Work out exactly what the feeding requirements are for animals being kept at the college or teaching location, and explain the reasons for these requirements. After checking with supervisor, put the information to practical use.
• Suitable modifications are devised and appropriate written proposals are presented.	• Given various scenarios such as changes in prices of feedstuffs, work out suitable modifications to the diet or even the feeding system, and present written proposals with justifications. • *Range: Feeding systems will include intensive stall feeding, natural grazing, sown pasture grazing and the use of supplements where appropriate.*

ASSESSMENT TASKS OR ACTIVITIES
Students explain in theory and do in practice the activities listed in the Learning Outcomes.

SUBJECT OUTCOME
2.5 Explain methods and principles for selection of breeding stock in order to produce quality stock.

ASSESSMENT STANDARD	LEARNING OUTCOME
• Characteristics of cattle at the college and/ or other location are assessed..	• Explain the desired characteristics to use, and select breeding stock if possible. *Range: 3 breeds commonly used in the region of the college.*
• Criteria are explained.	• Explain the criteria to use when selecting breeding stock. • *Range: Mendelian or other genetics is not required.*

ASSESSMENT TASKS OR ACTIVITIES
• Practical: assess characteristics of cattle at the college and/or other locations. • Theory: explain how selection is done (tests, assignments, group discussion).

SUBJECT OUTCOME
2.6 Identify and control diseases and parasites affecting cattle according to workplace procedures.

ASSESSMENT STANDARD	LEARNING OUTCOME
• Diseases are correctly identified.	• Identify diseases (bacterial, protozoan and viral) and parasites which are common in the area and affect the cattle. *Range: Use visual aids to supplement and assist field observation*
• Treatment is correctly identified	• Identify the treatment used for different diseases and parasites.
• Procedures are clearly explained	• Explain the workplace procedures used for treatment of afflicted and infected cattle.
• Control measures are used where applicable.	• Apply the above in the workplace environment. *Range: It is not expected that diseased animals will deliberately be introduced into the herd!*

ASSESSMENT TASKS OR ACTIVITIES
Students explain in theory and do in practice the activities listed in the Learning Outcomes.

SUBJECT OUTCOME
2.7 Demonstrate an ability to handle cattle.

ASSESSMENT STANDARD	LEARNING OUTCOME
• Ability to handle cattle is demonstrated.	• Explain different ways of handling cattle in different circumstances. *Range: Circumstances include transportation, milking, branding, dehorning, castrating and treating.*
• Ability to handle cattle successfully in demonstrated.	• Apply appropriate ways of handling cattle at all stages of rearing and production.

ASSESSMENT TASKS OR ACTIVITIES
Students explain in theory and do in practice the activities listed in the Learning Outcomes.

SUBJECT OUTCOME	
2.8 Identify suitable areas for cattle production in terms of climatic conditions, vegetation and market availability.	
ASSESSMENT STANDARD	**LEARNING OUTCOME**
• Areas for cattle production identified, with explanation.	• Identify and discuss suitable areas for cattle production in terms of climatic conditions, vegetation and market availability. *Range: Areas discussed should include all the climatic zones in southern Africa.*
ASSESSMENT TASKS OR ACTIVITIES	
Group work, assignments, tests.	

Topic 3: Dairy Farming.

SUBJECT OUTCOME	
3.1 Demonstrate an understanding of the operation of a milking parlour.	
ASSESSMENT STANDARD	**LEARNING OUTCOME**
• Suitable explanation of milking theory is given.	• Explain milking theory. *Range: Udder structure, milking stimuli, optimum pulsation rate and vacuum pressure of milking machines.*
• Suitable explanations are given and practical action is taken.	• Explain ways of assessing milk quality and take preventative and remedial action in a milking parlour. *Range: Odours, colour, structure, bacterial load; group sick animals for separate milking and treatment.*
• Suitable explanations are given and practical action is taken.	• Explain and apply parlour hygiene requirements. *Range: Disposal of wastewater and manure and control of flies; cleaning udders and equipment; explain importance of rapid cooling of freshly drawn milk.*
• Suitable explanations are given and practical action is taken.	• Explain the principles of operation of milk cooling devices and ensure they work correctly. *Range: Monitor temperatures; identify needs for maintenance, report and call assistance.*
• Records are kept, with explanation of reasons, and problems diagnosed.	• Explain how to keep and use records, and be able to diagnose problems using sample records provided. *Range: Records of milk production by individual animals, mastitis incidence, stored milk temperature, milk tainting, cracks in udders, incidence of oestrus.*
• Products are identified and described, and precautions to be taken during manufacture are outlined.	• Identify and briefly describe the end products of milk processing and illustrate examples of simple on-farm processing. *Range: Products include butter, cheese, whey, maas, buttermilk or yoghurt; pasteurised, homogenised and sterilised whole milk.*
• Income and expenditure is calculated correctly.	• Calculate income and expenditure of a simple dairy operation, using templates provided by the instructor.
ASSESSMENT TASKS OR ACTIVITIES	
• Students explain in theory and do in practice the activities listed in the Learning Outcomes.	

Topic 4: Ostrich farming

SUBJECT OUTCOME	
4.1 Demonstrate an understanding of the processes involved in ostrich farming.	
ASSESSMENT STANDARD	**LEARNING OUTCOME**
• Feasibility of ostrich farming in a particular location is assessed with explanations.	• Describe ostriches in terms of their suitability to environmental and other conditions and demand for market products, and assess the feasibility of ostrich farming in a particular location. *Range: Conditions will include climate and vegetation. Market products may include meat and feathers.*
• Ostrich breeds and their housing arrangements are discussed.	• Identify and describe ostrich breeds and possible housing arrangements, with advantages and disadvantages of each.
• Feeding needs and the ways of meeting these is explained.	• Describe the different feeding needs of ostriches in relation to their production, and identify and explain the different ways of feeding ostriches. *Range: Will include arrangements for organising grazing, and supplementary feeds as appropriate.*
• Common local diseases and parasites are correctly identified from biological samples or illustrations.	• Identify common local diseases and parasites that affect quality ostrich production. *Range: Diseases refers to bacterial, protozoan and viral diseases. Parasites will include external and internal parasites.*
• Correctly explain how prevention and control measures work, with reference to life cycles of disease and parasite organisms.	• Outline the life cycles of disease and parasite organisms, with particular reference to measures for prevention and control.
• Appropriate treatments are correctly identified.	• Identify the treatments used for different diseases and parasites so as to apply the appropriate intervention.
• Explanation is clear and correct.	• Explain the workplace procedures used to minimise infection, and for treatment of infected ostriches.
• Procedures are correctly used.	• Apply the above in the workplace environment.
• Explanation and use (if possible) are correct. .	• Explain the operation of, and use of, artificial brooding systems for ostriches, and use them if available. .
• Ostriches are correctly handled.	• Handle ostriches in different circumstances during young and adult stages.
ASSESSMENT TASKS OR ACTIVITIES	
Students explain in theory and do in practice the activities listed in the Learning Outcomes.	

4   SPECIFICATIONS FOR EXTERNAL ASSESSMENT IN ANIMAL PRODUCTION - LEVEL 4

4.1   Integrated Summative Assessment Task (ISAT)

A compulsory component of ESASS is the **Integrated Summative Assessment Task (ISAT),** which is a major assessment task that draws on the students' cumulative learning achieved during the year. The task requires *integrated application of competence* and is executed and recorded in compliance with assessment conditions.

The ISAT may be applied as follows:
- The students could be assigned tasks at the beginning of the year which they will have to complete in various phases during the year to obtain part assessment. The final assessment is made at the end of the year upon completion of the task (project).

The ISAT will be set by the externally appointed examiner and be conveyed to colleges within the first quarter of each year.

The integrated assessment approach allows for the student to be assessed in more than one subject within the same ISAT.

4.2   National examination

A national examination is conducted annually in October or November by means of a paper set externally and marked and moderated externally. The following distribution of cognitive application is suggested:

LEVEL 4	KNOWLEDGE AND COMPREHENSION	APPLICATION	ANALYSIS, SYNTHESIS AND EVALUATION
	30%	50%	20%