



Republic of Namibia

MINISTRY OF EDUCATION

NAMIBIA SENIOR SECONDARY CERTIFICATE (NSSC)

AGRICULTURE SYLLABUS

ORDINARY LEVEL

SYLLABUS CODE: 4321

GRADES 11 - 12

FOR IMPLEMENTATION IN 2010

**DEVELOPED IN COLLABORATION WITH
UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS**



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This syllabus replaces previous NSSC syllabuses and will be implemented in 2010 in Grade 11



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1. INTRODUCTION

The Namibian Senior Secondary Certificate for Ordinary Level (NSSCO) for Agriculture is designed as a two-year course for examination after successful completion the Junior Secondary Certificate. The syllabus is designed to meet the requirements of the Curriculum Guide for Formal Senior Secondary Education for Namibia and has been approved by the National Examination, Assessment and Certification Board (NEACB). The National Curriculum Guidelines, applicable at the stage of senior secondary education (Grades 11 and 12) and at equivalent stages of non-formal education, as a part of life-long learning, recognise the uniqueness of the learner and adhere to the philosophy of learner-centred education.

The Namibia National Curriculum Guidelines:

- recognise that learning involves developing values and attitudes as well as knowledge and skills;
- promote self-awareness and an understanding of the attitudes, values and beliefs of others in a multilingual and multicultural society;
- encourage respect for human rights and freedom of speech;
- provide insight and understanding of crucial global issues in a rapidly changing world which affects quality of life: the AIDS pandemic, global warming, environmental degradation, maldistribution of wealth, expanding and increasing conflicts, the technological explosion and increased connectivity;
- recognise that as information in its various forms becomes more accessible, learners need to develop higher cognitive skills of analysis, interpretation and evaluation to use information effectively;
- seek to challenge and to motivate learners to reach their full potential and to contribute positively to the environment, economy and society.

Thus the Namibia National Syllabi provide opportunities for developing essential, key skills across the various fields of study. Such skills cannot be developed in isolation and they may differ from context to context according to a field of study.

Agriculture contributes directly to the development of all nine key skills indicated below:

- communication skills
- information skills
- numeric skills
- self-management and competitive skills
- problem- solving skills
- social and co-operative skills
- physical skills
- work and study skills
- critical and creative thinking

2. RATIONALE

The main focus of the Agriculture syllabus is to develop a critical understanding of the interrelationship between science and technology, society and environment. It must be understood that Agriculture is one way of managing our natural resources. The execution of all agricultural activities must be based on the principle of sustainable agricultural environment. These need to be done with the aim of conserving our natural resources and addressing issues of social and economic justice such as freedom from hunger and disease.

The syllabus is also specifically geared towards meeting the requirements of the Broad Curriculum Guide for Education in Namibia.

Learning experience within the natural scientific area aims at increasing the learners' knowledge and understanding of the physical and biological world of which they are part. This includes understanding how people use the natural environment to satisfy human needs, and how the environment may be changed in an ecologically sustainable way. Critical thinking, investigating phenomena, interpreting data, and applying knowledge to practical (experimental and investigative) skills and abilities are essential to the understanding of the value and limitations of natural scientific knowledge and methods, and their application to daily life. The application of scientific knowledge and attitudes to health issues are of special relevance for the individual, the family, and society as a whole.

The main objective of the syllabus is therefore to equip learners with the necessary knowledge, skills and attitude that will enable them to enter tertiary education or the world of work.

3. AIMS

The aims of the syllabus for Agriculture have been amplified to take account of the particular nature of agricultural practices. These are set out below and describe the educational purposes of a course in Agriculture for the NSSCO examination. They are not listed in order of priority.

The aims are to:

- provide insight and understanding of crucial global issues in a rapidly changing world which affect the quality of life;
- promote an appreciation of Agriculture as an applied science;
- stimulate an interest in, and create an awareness of, existing problems and opportunities in agricultural and rural development;
- stimulate positive attitudes by showing that farming can be both a beneficial and a rewarding occupation;
- develop initiative, self-reliance, resourcefulness, problem-solving abilities, scientific methods and self-education;
- develop scientific attitudes such as accuracy and precision, objectivity, integrity, enquiry, initiative and inventiveness;
- encourage the teaching, in a practical manner, of basic principles and skills in Agriculture, and of efficient farm business management;
- demonstrate the value of Agriculture to the family and community, and to show how improved agriculture can contribute to the world-wide campaign for freedom from hunger;
- provide an important element, together with the basic sciences and mathematics, in the background required for more advanced studies in Agriculture;
- ensure that schools take an active part in rural development by the integration of agricultural activities into the school curriculum;
- demonstrate desirable behavioural patterns and frame of mind in interacting with the environment in a manner that is protective, preserving and nurturing;
- develop an appreciation of the environment and promote the conservation of the landscape and its resources;
- encourage a respect for livestock and promote their welfare.

4. LEARNING CONTENT

1. The curriculum content outlined below is designed to provide guidance to teachers as to what will be assessed in the overall evaluation of learners. They are not meant to limit, in any way, the teaching programme of any particular school.
2. The learning content is set out in three columns.
 - (a) Topics
 - (b) General Objectives
 - (c) Specific Objectives
3. A **Topic** refers to those components of the subject which learners are required to study. The **General Objective** is derived from the topic and comprises the general knowledge, understanding and demonstration of skills on which learners may be assessed. The **Specific Objectives** are the detailed and more specified topics of the syllabus which are likely to be assessed.

The content material is divided into the following sections:

- General Agriculture
- Crop Husbandry
- Livestock Husbandry
- Farm Structure and Machinery
- Agricultural Economics

THEME 4.1: GENERAL AGRICULTURE

TOPIC	GENERAL OBJECTIVES Learners will:	SPECIFIC OBJECTIVES Learners should be able to:
4.1.1 Importance of sustainable Agriculture in our country	Know and understand the importance of sustainable Agriculture to people and the economy of the country	- describe the contribution of Agriculture to the family, the national economy and world trade - state the major uses of livestock kept by farmers in Namibia, including: - non-ruminants: horses, donkeys, pigs and rabbits - ruminants: cattle, sheep and goats - poultry: chickens, ducks, geese, turkeys - fish: tilapia or carp or trout - state the major uses of crops produced by farmers, such as cereals, fruits, vegetables, etc.
4.1.2 Environmental influences on agricultural practices	Understand the effect of environmental factors on agricultural activities in Namibia	- describe and explain the effects of the following environmental factors on Agriculture: <i>temperature</i> - its effect on plant growth <i>evaporation</i> - wilting of crops due to the rate of evaporation exceeding the rate of water uptake <i>humidity</i> - its effect on the rate of water loss from plants and as a factor in fungal disease attack <i>rainfall</i> - the variation in distribution, effectiveness, reliability and intensity; the water cycle <i>wind</i> - its effect on rate of evaporation and water loss, soil erosion and physical damage to plants - carry out experiments to demonstrate the effect of environmental factors on Agriculture in Namibia - describe the function of catchment areas, ground water resources and the importance of water conservation, including the process of mulching and minimum tillage
4.1.3 General principles of land tenure systems	Acquire knowledge of the different land tenure systems and know the land use types in the Republic of Namibia	- describe the main features of land tenure systems applicable in Namibia: rented land, state land, leasehold, freehold and communal tenure - describe methods of land use, shifting cultivation, settled arable land, unenclosed and enclosed grazing systems

TOPIC	GENERAL OBJECTIVES Learners will:	SPECIFIC OBJECTIVES Learners should be able to:
	Understand and debate the ways of producing sustainable crops and livestock in Namibia	- describe and explain the effect on agriculture of rotations, mixed farming, organic farming and mono-culture - explain that an increase in population size leads to a need for the efficient use of land in our country - explain how the use of land is limited by the potential for cultivation and by environmental factors - describe that the demand for food production may be in conflict with the long- term stability of the environment
4.1.4 The impact of HIV/AIDS on the Agriculture sector in Namibia	Understand the impact of HIV/AIDS on agricultural production in our country	- describe the impact of HIV/AIDS in Namibia on : - farm labour - food production - rural livelihood - household earning - health costs - production capacity and the generation of foreign income - discuss and evaluate the strategies to be employed in order to cope with the HIV and AIDS pandemic on farms in Namibia

THEME 4.2: CROP HUSBANDRY

TOPIC	GENERAL OBJECTIVES Learners will:	SPECIFIC OBJECTIVES Learners should be able to:
4.2.1 SOILS		
4.2.1.1 Soil formation	• Recognise that soil is formed from rocks through the process of weathering	• describe the ways in which parent rock undergoes physical, chemical and biological weathering • demonstrate the various types of weathering
4.2.1.2 Soil profile	• Recognise a simple soil profile	• dig a profile hole, observe and describe various soil horizons (layers) in terms of colour, organic matter and texture
4.2.1.3 Soil texture	• Understand the existence of different sizes of soil particles	• determine the different sizes of soil particles in terms of sand, silt and clay
4.2.1.4 Soil structure	• Acquire knowledge of different structures of the soil	• identify different types of the soil structure such as: - single grain structure - crumb structure - prismatic structure - granular structure - platy structure, etc. - explain what is meant by soil crumb
4.2.1.5 Soil composition	• Know and understand different components of soil	• describe the components of different types of soil in terms of sand, silt, clay, organic matter, air, water, and living organisms
4.2.1.6 Soil types	• Recognise the different types of soils used in agricultural production	• describe the main characteristics of clay soil, sand soil, and loam soil in terms of particle size, pore space, water retention, temperature, cultivation and plant growth

TOPIC	GENERAL OBJECTIVES Learners will:	SPECIFIC OBJECTIVES Learners should be able to:
4.2.1.7 Soil fertility	Know and understand the importance of soil nutrients for plant growth	- list the major plant nutrients: nitrogen, phosphorous and potassium and understand the general effect of these nutrients on plants - state one organic and one inorganic source of each of the above major elements - identify deficiency symptoms associated with each of the major nutrients - state the need for calcium, magnesium and sulphur for plant health and growth - explain the effect of overuse of fertilisers - describe the nitrogen cycle, without reference to specific named micro-organisms - explain the significance of legumes in maintaining soil fertility - carry out a simple test to determine soil pH - relate soil pH to soil types and plant growth - state the factors affecting soil pH and explain their effect on the soil - describe how soil pH can be regulated by the use of lime - describe the effect of pH as a limiting factor in crop growth
4.2.1.8 Soil zones of Namibia	Acquire knowledge and understanding of dominant soils found in different parts of our country	- use the map of Namibia (Atlas of Namibia) to identify the distribution of dominant soils found across Namibia (arenosols, calcisols, cambisols, fluvisols, gypsisols, leptosols, regosols, solonckks, and solonetzes) - describe soil formation of any one dominant soil types/groups identified - explain the agricultural potential of the different soil groups (arenosols, cambisols, fluvisols) in terms of fertility and suitability for crop production
4.2.1.9 Soil erosion and soil conservation	Understand the cause of soil erosion and the ways soil can be conserved	- list some examples of soil erosion - describe the causes of soil erosion and the method used to reduce soil erosion

TOPIC	GENERAL OBJECTIVES Learners will:	SPECIFIC OBJECTIVES Learners should be able to:
4.2.1.10 Drainage	Acquire knowledge of drainage problems and how to solve them	- define drainage - describe how soil is drained by means of ditches and pipe drains - define leaching - discuss the effects of leaching on the loss of plant nutrients
4.2.1.11 Irrigation	Know the various irrigation methods in Namibia	- explain what is meant by irrigation - list the irrigation methods applicable in our country - discuss of both positive and negative effects of irrigation on crop yield and quality - discuss reasons for using water sparingly in Namibia
4.2.2 Principles of plant growth	Acquire knowledge and skills on the principles of plant growth in relation to plant structure and physiological processes	- state the conditions necessary for plant growth - define osmosis as the movement of water molecules from the region of higher concentration to a region of lower concentration through a partially permeable membrane - explain the concepts of turgor and plasmolysis - describe the ways in which water passes from the soil into plant roots and its movement throughout the plant by vascular tissues in terms of the structure and function of the root tissues, root hairs and water potential - define diffusion as a movement of ions and molecules from the region of higher concentration to the region of lower concentration down a concentration gradient - describe the ways in which mineral salts are taken up by plants in terms of diffusion and active transport and the movement of mineral salts by xylem vessels - describe the absorption of carbon dioxide by leaves in terms of their internal structure and gaseous exchange through stomata - describe photosynthesis in terms of carbon dioxide, water, light, chlorophyll, leaf structure and the synthesis of carbohydrates and the production of oxygen - define respiration as a release of energy from food substances in living cells with the release of carbon dioxide
		define translocation in terms of movement of synthesised food to wherever it is required in the plant

TOPIC	GENERAL OBJECTIVES Learners will:	SPECIFIC OBJECTIVES Learners should be able to:
		• describe the principle of modification of different parts of plants to form food storage organs and their relation to the type of food stored • describe transpiration in terms of water loss from the aerial parts of plants and the continuity of xylem in root, stem and leaf • define sexual reproduction • identify from specimens and diagrams the structure of the flower of a maize plant and a bean plant and describe the functions of the various parts in sexual reproduction • define pollination • describe the mechanism of pollination in maize (wind pollination) and bean (insect pollination) • define fertilisation • describe the process of fertilisation in a named plant • define asexual reproduction • describe the process of asexual reproduction in Irish potato (<i>Solanum tuberosum</i>) or sweet potato (<i>Ipomoea batatas</i>)
4.2.3 Crop production 4.2.3.1 Land reclamation in Namibia	• Obtain skills on the methods of reclaiming the land for agricultural purposes in our country	• state reasons for reclaiming the land in farming • describe how land (including desert) can be reclaimed by stumping, clearing, drainage, application of fertilisers or manure, etc. • explain what is meant by deforestation • describe undesirable effects of deforestation • explain the importance of sustaining reclaimed land.

TOPIC	GENERAL OBJECTIVES Learners will:	SPECIFIC OBJECTIVES Learners should be able to:
4.2.3.2 Cereal and root crop production in Namibia	Acquire knowledge and the necessary skills on the methods of producing cereal and root crops in our country	- describe and explain the methods employed in the cultivation of one cereal crop grown locally, e.g. maize, sorghum, millet, rice, oats or wheat including: - soil and climatic requirements - seedbed preparation, sowing or planting time and seed rate - application of fertiliser (inorganic and organic) - prevention and control of common pests, weeds and diseases - recognition of crop maturity harvesting and storage - describe and explain the methods employed in the cultivation of one root crop grown locally, e.g. cassava, yam, Irish potato, sweet potato or carrot including: - soil and climatic requirements - seedbed preparation - sowing or planting time and seed rate - application of fertiliser (inorganic and organic) - prevention and control of common pests, weeds and diseases - recognition of crop maturity harvesting and storage - give reasons for the suitability of cereal and root crops for local conditions - discuss the choice of a suitable cultivar including genetically modified (GM) seeds <u>in Namibia</u>
4.2.4 Crop protection 4.2.4.1 Weed control	Understand the effect of weeds on plants and ways of controlling them	- identify at least one named weed species affecting crops in Namibia - investigate and describe its harmful effects and the mode of spread - describe biological, cultural, mechanical and chemical weed control - discuss the cost-effectiveness of the methods of weed control

TOPIC	GENERAL OBJECTIVES Learners will:	SPECIFIC OBJECTIVES Learners should be able to:
4.2.4.2 Pest control	Obtain knowledge about the common pests affecting crops in our country including their control methods	- describe one example from each of the following pest types and the nature of the damage caused: <i>biting and chewing pests</i>: including grasshoppers, locusts, termites, leaf miners and beetles <i>piercing and sucking pests</i>: including aphids, mealy bugs and scale insects <i>boring pests</i>: including weevils, stalk borers and American bollworms <i>nematodes (eelworms)</i> - describe one example of a chemical, a biological and a cultural method of controlling the named pests - discuss their advantages and disadvantages
4.2.4.3 Disease control	Acquire knowledge of crop diseases, their modes of infection and control	- describe the mode of infection, harmful effects, prevention and control of one plant disease from each of the following groups: <i>bacterial diseases</i>: bacterial wilt of tomatoes, bacterial blight of cotton and soybean or cowpeas, black rot of cabbage or soft rot of vegetables <i>fungal diseases</i>: damping off of seedling, downy mildew of peas and sorghum, maize and sorghum smut, powdery mildew of beans, rust of carrots, blight of potatoes <i>viral diseases</i>: maize dwarf mosaic on sorghum, maize streak virus on maize, groundnut rosette virus, cowpea aphid-borne mosaic virus or tobacco mosaic virus on tomatoes
4.2.4.4 The use of farm chemicals	Acquire knowledge and skills of the care and safe usage of farm chemicals	- discuss the possible dangers to human health and the environment of using chemicals - describe the necessary precautions to be taken when handling and storing farm chemicals to minimise pollution and poisoning - explain the difference between pesticides and herbicides with examples of each category - describe possible environmental hazards of farm chemicals - discuss the advantages and disadvantages of using chemicals to control weeds, pests and diseases

THEME 4.3 LIVESTOCK HUSBANDRY

TOPIC	GENERAL OBJECTIVES Learners will:	SPECIFIC OBJECTIVES Learners should be able to:
4.3.1 Livestock anatomy	Develop an understanding of the anatomy of farm animals	- describe the structure of the digestive system of a ruminant and a non-ruminant (not poultry) - describe the reproductive system of a named farm animal (not poultry)
4.3.2 Livestock physiology	Acquire knowledge and understanding of the physiological processes of farm animals	- describe the processes of digestion and absorption in the alimentary canal of a ruminant and non-ruminant animal - explain the significance of micro-organisms and enzymes in the digestion of ruminants - describe the role of male and female hormones in the reproductive systems of a ruminant animal - discuss the advantages of artificial insemination - describe the process of fertilisation and birth in a named farm animal (not poultry) - define lactation and weaning and explain the importance of colostrum - explain how breeding cycles can be managed to increase yield from farm animals.
4.3.3 Livestock health 4.3.3.1 Relevant Namibian legislation	Acquire understanding of relevant legislation relating to livestock and livestock production in Namibia	- explain the principles behind the laws relating to notifiable diseases, the importing and exporting of animals and quarantine services in our country - explain the principles behind the laws relating to livestock products and the accompanying health regulations (obtained from the Ministry of Agriculture in Namibia)
4.3.3.2 Health and diseases	Recognise the signs of health and ill-health in ruminants and poultry	- identify the signs of healthy and sick animal - describe the spread of infectious and contagious diseases in ruminants and poultry - explain the importance of livestock hygiene and the isolation of sick animals - describe the use of vaccine, sera, antibiotics, antiseptics and disinfectants - discuss the veterinary services available locally

TOPIC	GENERAL OBJECTIVES Learners will:	SPECIFIC OBJECTIVES Learners should be able to:
4.3.4 Livestock nutrition	Understand the nutritional requirements of livestock	- describe and explain the nutritional requirements of animal food materials suitable for different classes of livestock - describe and explain their nutritional content and feeding practices, including: - the importance of a balanced ration - maintenance and production ration - importance of adequate water supply - describe and explain the suitability of the ration to the age and stage of development of the livestock
4.3.5 Livestock breeding 4.3.5.1 Monohybrid inheritance	Understand the concepts and practices related to monohybrid inheritance	- define the following terms: <i>chromosomes; gene, allele, homozygous, heterozygous, dominant and recessive</i> - calculate and predict the results of simple genetic crosses involving 1:1 and 3:1 ratios
4.3.5.2 Livestock Selection	Obtain knowledge of the process of selection in livestock breeding purposes	- debate the value of selection in livestock breeding purpose - discuss the role of artificial selection in the production of improved varieties of animals of economic importance - explain the meaning of genotype and phenotype and assess their importance in animal breeding - describe how breeding can improve production, disease resistance, hardiness and appearance in a named livestock - discuss the possible consequences of using genetic engineering in livestock breeding (modification)
4.3.6 Pasture and range management 4.3.6.1 Extensive management methods	Acquire knowledge and understanding of extensive methods of pasture and range management	- explain what is meant by extensive pasture and range management - describe the vegetation of grazing lands in Namibia including grasses and legumes for grazing and bushes for browsing - describe the local species of grass, and other pasture plants including their methods of propagation and establishment - describe the value of non-grass species

TOPIC	GENERAL OBJECTIVES Learners will:	SPECIFIC OBJECTIVES Learners should be able to:
4.3.6.2 Intensive management methods	Acquire knowledge and understanding of the intensive methods of pasture and range management	- explain what is meant by intensive pasture and range management - describe stocking rate, carrying capacity and dangers of overstocking - describe the improvement of pasture by the use of fertilisers, lime and drainage - describe the use of herbicides, their advantages and disadvantages - explain improved utilisation of pasture by grazing control with reference to rotational grazing, paddock grazing, zero grazing and free- range grazing

THEME 4.4: FARM STRUCTURE AND MACHINERY

TOPIC	GENERAL OBJECTIVES Learners will:	SPECIFIC OBJECTIVES Learners should be able to:
4.4.1 Fencing	Acquire knowledge of different methods and the importance of fencing	- describe the types of fence for different purposes such as hedges and windbreaks - describe materials available for fencing and their advantages and disadvantages - describe the methods of fence construction and the cost of treating fencing posts
4.4.2 Farm buildings	Understand the importance of farm buildings for the farming enterprise	- describe materials available for building, properties and uses of wood, concrete blocks, concrete floors, metal, stone, brick, earth and thatch - compare the costs of structures made from different materials - describe the site selection and preparation for building - describe methods of making earth and concrete blocks, concrete floors and roof trusses which are structurally strong and serviceable - build simple animal structures from local materials
4.4.3 Farm water supplies	Understand the importance and value of water supply to farms in Namibia	- describe the source of water supply for human consumption, for livestock and for irrigation purposes in our country - explain water treatment by settling and filtration - describe the use of storage dams and suitable methods of constructing dams to resist water pressure which increases with depth - describe storage tanks suitable for farm use - explain the distribution of water through pipe systems in our country - explain simple plumbing systems used to maintain a plastic pipe system, including pipe-joining and fitting of tap washers
4.4.4 Farm tools	Acquire knowledge and skills in the use of farm tools	- explain the use and maintenance of saw, hammer, screwdriver, file, spanner, sprayers and hand tools used for cultivation - explain the use of ropes for securing loads, including methods of tying down loads, using tight knots that are easily loosened when the load is to be removed

TOPIC	GENERAL OBJECTIVES Learners will:	SPECIFIC OBJECTIVES Learners should be able to:
4.4.5 Intermediate technology	Acquire knowledge and skills of basic technology in farming	- explain the structure and mode of operation of mechanical devices such as trailer and pumps for raising water - explain the structure and mode of operation of farm structures such as livestock housing and gates - discuss the value to the farmer of low- cost mechanised devices and farm structures that improve upon traditional methods, but require no advanced technological knowledge

THEME 4.5 : AGRICULTURAL ECONOMICS

TOPIC	GENERAL OBJECTIVES Learners will:	SPECIFIC OBJECTIVES Learners should be able to:
4.5.1 Principles of Agricultural Economics	Understand the general principles of Agricultural economics	- state the meaning of agricultural economics - discuss factors of production such as land, capital, labour and entrepreneurship - explain the principles of supply and demand, diminishing returns, risks and uncertainty, opportunities and choices facing the farmer, decision making based on understanding economic factors
4.5.2 Farm records and accounts	Obtain knowledge of the importance of keeping records and managing farm accounts	- outline the reasons for keeping farm records - deliberate how to keep farm records - explain financial accounts relating to farming enterprises, e.g. crop production including inputs and yields, cost and returns and calculating profit and loss
4.5.3 Farm budgeting	Acquire skills on different aspects of budgeting	- state types of information for budgeting including prices of inputs and outputs and expected yield - calculate the gross margin obtained from specific crops, e.g. maize or animals, e.g. poultry - explain the preparation of budgets as an aid to planning and control - draw up a simple budget

5 ASSESSMENT OBJECTIVES

The assessment will include, wherever appropriate, personal, social, environmental, economic and technological applications of Agriculture in modern society. The Agriculture syllabus must require that all candidates demonstrate the following objectives in the context of the content and skills prescribed. Within each of the assessment objectives the assessment must take account of the candidates' ability to communicate clearly and logically, using specialist vocabulary and conventions where appropriate.

The three assessment objectives in Agriculture are:

- A Knowledge with understanding
- B Handling information, application and problem solving
- C Practical and investigative skills

A description of each Assessment Objective follows:

A. KNOWLEDGE WITH UNDERSTANDING

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

- correct terms, symbols, quantities and units
- facts, concepts, principles, patterns, models and theories
- techniques, procedures and principles of safe agricultural practices
- technological applications with their social, economic and environmental implications

The curriculum content defines the factual material that candidates need to recall and explain. Questions testing these objectives will often begin with one of the following words: define, name, list, indicate, give examples, state, describe, compare, explain, distinguish, outline and give reasons.

B. HANDLING INFORMATION , APPLICATION AND PROBLEM SOLVING

Learners should be able to use oral, written, symbolic, graphical and numerical forms of presentation, to:

- locate, select, organise and present information from a variety of sources
- translate information from one form to another
- use information to identify patterns, report trends and draw inferences
- present reasoned explanations for phenomena, patterns and relationships
- make predictions and propose hypotheses
- solve problems, including some of a quantitative and qualitative nature

These skills cannot be precisely specified in the curriculum content as questions testing such skills are often based on information which is unfamiliar to the candidate. In answering such questions, candidates are required to use principles and concepts that are within the syllabus and apply them in a logical, deductive manner to a novel situation. Questions testing these skills will often begin with one of the following words: discuss, deduce, compare and discuss, find, estimate, interpret, evaluate, sketch, predict, identify, relate, suggest, calculate or determine.

C. PRACTICAL (EXPERIMENTAL AND INVESTIGATIVE) SKILLS

Learners should be able to :

- understand and follow instructions
- use and organise techniques, apparatus and materials
- make and record observations and measurements
- interpret and evaluate experimental observations and data
- plan investigations

6. SCHEME OF ASSESSMENT

The assessment will consist of school based- assessment and a terminal end- of- year examination.

All candidates should be entered for papers 1, 2 and 3 as it is compulsory.

Grades available A* - G	
Paper 1 : 60 minutes 40 marks Compulsory multiple-choice paper. Forty items of the four-choice type. The questions will be testing skills mainly in Assessment Objectives A and B.	Paper 2 : 2 hrs 100 marks The paper will consist of two sections: Section A 70 marks This section will have compulsory short-answer questions. The section will also test mainly Assessment Objectives A and B with some application questions that will test Assessment Objective C. Section B 30 marks This section will have four essay-type questions. Candidates will be allowed to choose two essay questions. Each question will be marked out of 15 and will test Assessment Objectives A and B with some application questions that will test Assessment Objective C.
Practical Assessment (SBA) Paper 3 : School-Based Assessment of Practical Skills: Five Terms : 60 marks The purpose of this component is to test appropriate skills in Assessment Objective C. This is a continuous assessment of candidates' practical work. A number of practical exercises can be done continuously throughout the three terms. Each practical exercise will be marked out of 25 marks. Five practical exercise will be submitted for external moderation at the end of Grade 12. At least one should be an investigative skill. The practical exercise will be weighted at 30% of the final total mark of 200. For details see: Guide on the Marking of Practical Skills. This will be detailed in the syllabus.	

WEIGHTING OF PAPERS

All learners will be entered for papers 1, 2 and 3 specified below.

Learners will be graded from **A* - G** depending on their abilities and achievements.

Weighting of papers	Percentages
Paper 1	20%
Paper 2	50%
Paper 3 (School-Based Assessment of Practical Skills)	30%

NB: Teachers may not undertake school-based assessment without the written approval of the National Examination, Assessment and Certification Board of Namibia. Teachers will therefore have to undergo special in-service training in assessment and moderation of coursework before entering candidates.

7. SPECIFICATION GRID

Weighting of Assessment Objectives and Papers

Assessment Objectives	Weighting in Examination Overall	Paper 1 40 Marks	Paper 2 100 Marks	Paper 3 60 Marks
A. Knowledge with understanding	20%	20	20	-
B. Handling information, application and problem solving	50%	20	80	-
C. Practical (Experimental and Investigative) Skills	30%	-	-	60
	100 %	40 Marks	100 Marks	60 Marks
	Total Marks	200 Marks		

Assessment Grid

The following grid summarises the connection between the assessment objectives and papers:

Assessment Objectives	Paper 1	Paper 2	Paper 3
A	√	√	
B	√	√	
C			√

8. GRADE DESCRIPTIONS

The scheme of assessment is intended to encourage positive achievement by all candidates. Grade descriptions are therefore provided to give a general indication of the standards of achievement likely to have been shown by candidates awarded particular grades. The description must be interpreted in relation to the content specified by the Agriculture syllabus but is not designed to define that content. The grade awarded will depend in practice upon the extent to which the learner has met the assessment objective overall. Shortcomings in some aspects of the assessment may be balanced by better performance in others. Grade description in the Namibian Senior Secondary Curriculum for Science Subjects (including Agriculture) will range from **A, C, E** and **G**.

Grade A

At Grade A learners will be expected to:

- recall a wide range of knowledge from all areas of the syllabus
- use detailed scientific knowledge and understanding in a range of application relating to scientific systems or phenomena
- use a wide range of scientific and technical vocabulary throughout their work
- explain how theories can be changed by new evidences and identify some areas of uncertainty in science
- select and collate information from a number of sources and present it in a clear, logical form
- solve problems in situations that may involve a wide range of variables
- process data from a number of sources to identify patterns or trends
- generate a hypothesis to explain facts, or find facts to support a hypothesis

Grade C

At grade C learners will be expected to:

- recall a range of scientific information from all areas of the syllabus
- use and apply scientific knowledge and understanding in some general contexts
- use appropriate scientific and technical vocabulary in a range of contexts
- explain how scientific theories can be modified by new scientific evidence
- select a range of information from a given source and present it in a clear, logical form
- identify patterns or trends in given information
- solve problems involving more than one step, but with a range of variables
- generate a hypothesis to explain a given set of facts or data

Grade E

At Grade E learners will be expected to:

- recall a range of information, using basic concepts, principles and theories
- use and apply knowledge and understanding in some specific every-day contexts
- make some use of scientific and technical vocabulary to make simple generalisations from information
- recognise how scientific explanations can be derived from experimental evidence
- select basic information from a given source and present it fairly
- solve a problem involving one step or more with minimum assistance
- identify a few patterns or trends where manipulation of data is needed
- differentiate between two hypotheses which explain a set of data

Grade G

At Grade G learners will be expected to:

- recall a limited range of information, using basic concepts, principles and theories
- make use of limited scientific vocabulary, recall basic concepts, principles and theories
- apply some scientific and technical vocabulary to make simple generalisations from information
- recognise how simple explanations can be derived from experimental evidence
- select and present a single piece of information from a given source
- solve a problem involving one step, or more than one step if structured help is needed
- identify patterns or trends where only minor manipulation of data is needed
- recognise which of two given hypotheses explains a set of facts or data

9. GLOSSARY OF TERMS USED IN SCIENCE PAPERS

It is hoped that the glossary (which is relevant only to science subjects) will prove helpful to learners as a guide, i.e. it is neither exhaustive nor definitive. The glossary has been deliberately kept brief not only with respect to number of terms included but also to the descriptions of their meanings. Learners should appreciate that the meaning of a term must depend in part on its context.

1. *Define* (the term(s) ...) is intended literally, only a formal statement or equivalent paraphrase being required.
2. What do you understand by/What is meant by (the term(s) ...) normally implies that a definition should be given, together with some relevant comment on the significance or context of the term(s) concerned, especially where two or more terms are included in the question. The amount of supplementary comment intended should be interpreted in light of the indicated mark value.
3. *State* implies a concise answer with little or no supporting argument, e.g. a numerical answer that can readily be obtained by inspection.
4. *List* requires a number of points, generally each of one word, with no elaboration. Where a given number of points is specified, this should not be exceeded.
5. *Explain* may imply reasoning or some reference to theory, depending on the context.
6. *Describe* requires the candidate to state in words (using diagrams where appropriate) the main points of the topic. It is often with reference either to particular phenomena or to particular experiments. In the former instance, the term usually implies that the answer include reference to (visual) observation associated with the phenomena.
In other contexts, *describe* should be interpreted more generally, i.e. the candidate has greater discretion over the nature of the organisation of the material to be included in the answer. *Describe* and *explain* may be coupled, as may *state* and *explain*.
7. *Discuss* requires the candidate to give a critical account of the points involved in the topic.
8. *Outline* implies brevity, i.e. restricting answers to giving essentials.
9. *Predict* implies that the candidate is not expected to produce the required answer by recall but by making a logical connection between other pieces of information. Such information may be wholly in the question or may depend on answers extracted in an earlier part of the question. *Predict* also implies a concise answer, with no supporting statement required.
10. *Deduce* is used in a similar way to predict except that some supporting statement is required, e.g. reference to a law or principle, or the necessary reasoning is to be included in the answer.
11. *Suggest* is used in two main contexts, i.e. either to imply that there is no unique answer (e.g. in chemistry, two or more substances may satisfy the given conditions describing an 'unknown'), or to imply that candidates are expected to apply their general knowledge to a 'novel' situation, one that may be formally 'not in the syllabus'.
12. *Find* is a general term that may variously be interpreted as *calculate*, *measure*, *determine*, etc.
13. *Calculate* is used when a numerical answer is required. In general, working should be shown, especially where two or more steps are involved.
14. *Measure* implies the quantity concerned can be directly obtained from a suitable measuring instrument, e.g. length, using a rule, or mass, using a balance.
15. *Determine* often implies that the quantity concerned cannot be measured directly but is obtained by calculation, substituting measured or known values of other quantities into a standard formula, e.g. the Young modulus, relative molecular mass.
16. *Estimate* implies a reasoned order of magnitude statement or calculation of the quantity concerned, making such simplifying assumptions as may be necessary about points of principle and about the values of quantities not otherwise included in the question.
17. *Sketch*, when applied to graph work, implies that the shape and/or position of the curve need only be qualitatively correct, but candidates should be aware that, depending on the context, some quantitative aspects may be looked for, e.g. passing through the origin, having an intercept, asymptote or discontinuity at a particular value. In diagrams, sketch implies that a simple, freehand drawing is acceptable; nevertheless, care should be taken over proportions and the clear exposition of important details.

ANNEXURES

1. ASSESSMENT CRITERIA FOR COURSE WORK (SCHOOL-BASED ASSESSMENT)

To be read together with the Distance Training Manual obtainable from MoE (DNEA)

INTRODUCTION AND AIMS OF COURSEWORK IN AGRICULTURE

Paper 3 will be based on practical activities (practical work) and will be compulsory for all learners of Agriculture. The teacher's assessment of practical work should aim at evaluating skills and abilities essential to the study of Agriculture that are not measured by theory examination. Each practical activity should count out of 25 marks leading to an overall mark of 60. At least one of the practical activities should be of an investigative nature.

MODERATION

- **Internal Moderation**

When several teachers in a centre are involved in internal assessment, 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 entry before they are subjected to external moderation.

- **External Moderation**

The internal coursework assessment will be externally moderated. Individual Candidate Record Cards and Coursework Assessment Summary Forms must be received by the DNEA in Windhoek no later than 31 October of each year. These forms must be accompanied by a sample of written components undertaken by candidates and the instructions for practical work prepared for candidates by the assessor or teacher. The sample should cover the full ability range. Where there are ten or fewer candidates, all the coursework that contributed to the final mark for all the candidates must be sent to DNEA for moderation purposes. If there are more than ten candidates, all the coursework that contributed to the final mark for ten of them will be required. The centre should select candidates covering the whole mark range, with the marks spaced as evenly as possible, from the highest mark to the lowest. If appropriate, the samples should be selected from the classes of different teachers offering Agriculture at this level. All records and supporting written work should be retained until after publication of results. Examples of both coursework forms for paper 3 are included at the back of the syllabus.

PAPER 3 : PRACTICAL EXERCISES (60 MARKS)

The Agriculture teacher is required to assess the practical work carried out by learners during the first five terms of the Senior Secondary programme. This entails keeping a record for all learners, showing the operations carried out and the marks awarded. Much essential “field work” in Agriculture has no written component, but exercises should be designed to generate some written work, e.g. plans, records of results, etc. At least one practical exercise must assess the planning of an investigation as stated in the assessment objective C. Each practical exercise should be assessed according to the criteria stated below in Section 2.

- **Examples of tasks suitable for assessment of practical work in Agriculture**

Vegetable production, animal husbandry, soil and crop husbandry offer many opportunities to assess the learners’ practical work.

The following are a few examples as guide to the teacher :

1. digging, and the preparation of rough tilth
2. preparation of a seed bed
3. seed sowing (drills left open for checking depth and spacing)
4. fertilising (calculation of quantities, placement, top dressing)
5. transplanting and shading
6. mulching
7. weeding
8. pruning
9. growing of cereal and root crops
10. crop protection (spraying, pest and disease control)
11. harvesting and storage of crops
12. care of livestock, including routine hygiene measures (clean water, feed, removal of litter)
13. maintenance of cages, pens, nest-boxes in clean and tidy condition
14. slaughtering and dressing chickens
15. handling of animals (de-horning, castration and branding)

2. CRITERIA FOR THE ASSESSMENT OF PRACTICAL WORK

The following five criteria should be assessed and marked out of a maximum of five marks.

1. Responsibility - the ability to assume responsibility for the task in hand, and to work on given instructions without detailed supervision and help
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
3. Technique - the ability to tackle a practical task in a methodical, systematic way and to handle tools skilfully and to good effect
4. Perseverance - the ability to see the task through to a successful conclusion with determination and sustained effort
5. Quality - the ability to attend to detail, so that the work is well-finished and well-presented

The final mark for paper 3 should be a maximum of 125 marks. This will be scaled down to 60 marks by the DNEA in Windhoek.

Guide to marking practical work

1. Responsibility

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

2. Initiative

- offers solutions or explanations for unexpected problems - recognises, 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	5 or 4
- offers solutions or explanations for unexpected problems after seeking advice - solves problems with help - recognises faults in experimental methods, given some indicators - can plan an investigation with help	3 or 2
- is uncertain how to proceed and requires considerable help - recognises only the most obvious errors in experimental methods after considerable guidance given help - can plan an investigation, but in outline only	1 or 0

3. Technique

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

4. Perseverance

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

5. Quality

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

3. PHYSICAL AND CHEMICAL CONCEPTS AND PROCESSES

For the purpose of assessment, learners will be expected to demonstrate:

1. an understanding of temperature, pressure, evaporation and relative humidity
2. an understanding of the terms element, mixture, compound, atom, molecule and ion
3. an understanding of the terms acid, base and pH value
4. an understanding of energy transfer/conversion

4. MATHEMATICAL REQUIREMENTS

Calculators may be used in all parts of the assessment.

Learners should be able to:

1. add, subtract, multiply and divide
2. understand averages, decimals, fractions, percentages and ratios
3. understand the relationship between surface area and volume
4. use direct and inverse proportion
5. draw charts and graphs, including histograms, from given data
6. interpret charts and graphs
7. select suitable scales and axes for graphs

5. TERMINOLOGY, UNITS, SYMBOLS AND PRESENTATION OF DATA FOR AGRICULTURE

These will be used by Principal Examiners during the setting of papers. Learners should be made aware of the terminology during teaching and practical work.

This section follows the practice laid down in the following documents:

Association for Science Education booklet, *SI Units, Signs, Symbols and Abbreviations* (1981)

Institute of Biology, Biology Nomenclature, Standard Terms and Expressions used in the Teaching of Biology (2000).

1. Numbers

The decimal point will be placed on the line, e.g. 52.35.

Numbers from 1000 to 9999 will be printed without commas or space.

Numbers greater than or equal to 10 000 will be printed without commas. A space will be left between each group of three whole numbers, e.g. 4 256 789.

2. Units

The International System of Units will be used (SI units). Units will be indicated in the singular and not in the plural, e.g. 28 kg.

(a) SI units commonly used in Agriculture are listed below.

N.B. Care should be taken in the use of *mass* and *weight*. In many agricultural contexts, the term *mass* is correct, e.g. dry mass, biomass.

Quantity	Name of units	Symbol for unit
length	metre	m
	kilometre	km
	centimetre	cm
	millimetre	mm
	micrometre	µm
mass	tonne (1000kg)	(no symbol)
	kilogram	kg
	gram	g
	milligram	mg
	microgram	µg
time	year	y
	day	d
	hour	h
	minute	m
	second	s
amount of substance	mole	mol

(b) Derived SI units are listed below.

energy	kilojoule	kJ
	joule	j
	(calorie is obsolete)	

(c) Recommended units for area, volume and density are listed below.

area	hectare = 104 m ²	ha
	square metre	m ²
	square decimetre	dm ²
	square centimetre	cm ²
	square millimetre	mm ²
volume	cubic kilometre	km ³
	cubic metre	m ³
	cubic decimetre (preferred to litres)	dm ³
	litre	dm ³ (not l)
	cubic centimetre	cm ³
	cubic millimetre	mm ³
density	kilogram per cubic metre	or kg m ⁻³
	gram per cubic centimetre	or g cm ⁻³

(d) Use of Solidus

The Solidus (/) will be used for a quotient, e.g. m/s for minutes per second.

3. Presentation of data

(a) Tables

- (i) Each column of a table will be headed by the physical quantity and appropriate SI unit, e.g. time/min. There are three acceptable methods of stating units, e.g. metres per sec or m per s or m⁻¹.
- (ii) The column headings of the table can then be directly transferred to the axes of a constructed graph.

(b) Graphs

- (i) The independent variables will be plotted on the x-axis (horizontal axis) and the dependent variable on the y-axis (vertical axis).
- (ii) Each axis will be labelled with the physical quantity and the appropriate SI unit, e.g. time/min.
- (iii) The graph is the whole diagrammatic presentation. It may have one or several curves plotted on it.
- (iv) Curves and lines joining points on the graph should be referred to as 'curves'.
- (v) Points on the curve should be clearly marked as crosses (x) or encircled dots ⊙. If a curve further is included, vertical crosses (+) may be used to mark the points.

(c) Pie Charts

These should be drawn with the sectors in rank order, largest first, beginning at 'noon' and proceeding clockwise. Pie charts should preferably contain no more than six sectors.

(d) Bar Charts

These are drawn when one of the variables is not numerical, e.g. numbers of eggs of different colours. They should be made up of narrow blocks of equal width that do not touch.

(e) Column Graphs

These are drawn when plotting frequency graphs from discrete data, e.g. frequency of occurrence of nests with different numbers of eggs. They should be made up of narrow blocks of equal width that do not touch.

(f) Histograms

These are drawn when plotting frequency graphs with continuous data, e.g. frequency of occurrence of stems of different length or chicks of different masses. The blocks should be drawn in order of increasing or decreasing magnitude and they should be touching.

6. INDIVIDUAL RECORD CARD (NSSCO)

Please read the instructions printed overleaf and the General Coursework Regulations before completing this form.

Centre Number				Centre Name		November	2	0	0	
Candidate Number				Candidate Name		Teaching Group/Set				

Brief description of Practical Exercise taken	1 Responsibility - following instructions	2 Initiative - coping with problems	3 Technique - tackling tasks systematically and skilfully	4 Perseverance - seeing a task through to the end	5 Quality -attending to details	Total 125 (DNEA and OMR)	
						Initial Total (X)	Total Mark (scaled) (X ÷ 125 x 60)
Marks to be transferred to Coursework Summary Form	(max 25)	(max 25)	(max 25)	(max 25)	(max 25)	(max 125)	(max 60)

WMS619

REPUBLIC OF NAMIBIA

0600/04/CW/I/06

Note: The total raw mark out of 125 should be entered on the Optical Mark Reader (OMR) form and sent to DNEA in Windhoek

7. INSTRUCTIONS FOR COMPLETING INDIVIDUAL RECORD CARDS

Complete the information at the end of the form.

1. Mark each Practical Exercise for each candidate according to the instructions given in the syllabus booklet.
2. Enter marks and total marks in the appropriate spaces. Complete any other sections of the form required.
3. Ensure that the addition of marks is independently checked.
4. It is essential that the marks of candidates from different teaching groups within each centre are moderated internally. This means that the marks awarded to all candidates within a Centre must be brought to a common standard by the teacher responsible for co-ordinating the internal assessment (i.e. the internal moderator), and a single valid and reliable set of marks should be produced which reflects the relative attainment of all candidates in the Coursework component at the Centre.
5. Attach this form to the candidate's Practical Exercises, and retain until required for external moderation. Further detailed instructions about external moderation will be sent in early October of the year of examination. See also instructions on the Coursework Assessment Summary Form (0600/04/CW/S/06)

8. COURSEWORK ASSESSMENT FORM (NSSCO)

Please read the instructions printed overleaf and the general coursework regulations before completing this form

Centre Number					Centre Name		November	2	0	0	
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Candidate Number	Candidate Name	Teaching Group/ Set	1 Responsibility -following instructions (max 25)	2 Initiative -coping with problems (max 25)	3 Technique -tackling tasks systematicall y and skilfully (max 25)	4 Perseverance -Seeing a task through to the end (max 25)	5 Quality -attending to detail (max 25)	Total 125 (DNEA and OMR)	Total Mark (scaled mark) from individual Candidate Record Card (max 60)	Internally Moderate d Mark (max 60)

Name of teacher completing this form		Signature		Date					
Name of internal moderator		Signature		Date					

WMS620

REPUBLIC OF NAMIBIA

0600/04/CW/S/0

Note: The total raw mark out of 125 should be entered on the Optical Mark Reader (OMR) form and sent to DNEA in Windhoek

9. INSTRUCTIONS FOR COMPLETING COURSEWORK ASSESSMENT FORMS

1. Complete the information at the head of the form.
2. List the candidates in an order which will allow ease of transfer of information to a computer printed Coursework Mark Sheet MS1 at a later stage (i.e. in candidate index number order, where this is known; see item B.1 below). Show the teaching group or set for each candidate. The initials of a teacher may be used to indicate group or set.
3. Transfer each candidate's mark from his or her individual Candidate Record Card (0600/04/CW/I/06) to this form as follows:
 - (a) Where there are columns for individual skills or assignments, enter the marks initially awarded (i.e. before internal moderation took place).
 - (b) In the column headed 'Total Mark', enter the total (scaled) mark awarded before internal moderation took place.
 - (c) In the column headed 'Internal Moderated Mark', enter the total (scaled) mark awarded after internal moderation took place.
4. Both the teacher completing the form and the internal moderator (or moderators) should check the form to ensure all additions and transcriptions are correct before signing the bottom portion.

10. PROCEDURES FOR EXTERNAL MODERATION

1. The Directorate of National Examinations and Assessment (DNEA) sends a computer- printed Coursework Mark Sheet MS1 to each centre (in early October) showing the names and index numbers of each candidate. Transfer the total internally moderated mark for each candidate from the Coursework Assessment Summary Form to the computer-printed Coursework mark sheet MS1.
2. The top copy of the computer-printed Coursework Mark Sheet MS1 must be despatched in the specially provided envelope to arrive as soon as possible at DNEA, but not later than 31 October.
3. Send samples of the candidates' work covering the full ability range with the corresponding Individual Candidate Record Cards, this summary form and the second copy of MS1, to reach DNEA by 31 October.
4. If there are ten or fewer candidates, all the coursework that contributed to the final mark for all the candidates must be sent to DNEA. Where there are more than ten candidates, all the coursework that contributed to the final mark for ten of them will be required.
5. 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 range is covered, with marks spaced as evenly as possible from the top mark to the lowest mark.
6. DNEA reserves the right to ask for further samples of coursework.
7. Send, with the sample work, instructions given to candidates and information as to how internal moderation was carried out.



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