



AGRICULTURAL PROGRAMMES
TEVET QUALIFICATIONS FRAMEWORK (TQF) LEVEL 3
CURRICULUM FRAMEWORK
FOR
LEVEL I TRADE TEST CERTIFICATE
IN
GENERAL AGRICULTURE
CHART NO. 189/1

Prepared by:

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1.0 ACKNOWLEDGEMENTS

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2.0 RATIONALE

Agriculture has been the pivot of any developing and developed economy world over. This is because agriculture is about food, without which human existence and economic development cannot continue. The survival of agriculture in Zambia depends entirely on the involvement of many of our citizens in this life giving industry and to a large extent on the need to consider it as a source of income other than a mere provider of food.

In order to ensure that, agriculture is given its right position in economic development and national food self-sufficiency, the country has a mandate to educate the present and potential farmers on the importance of participating in the agricultural industry. The measure will not only ensure the availability of food but the creation of employment for the masses of school leaving and street potential youths.

Agriculture requires practitioners to show an understanding of the areas of practice and it is for this reason that this curriculum has been developed.

3.0 PROGRAMME PURPOSE

To equip the trainees with knowledge, skills and appropriate attitudes to carry out mixed farming in the agricultural sector.

4.0 PROGRAMME OBJECTIVES

On completion of the programme, trainees will be able to:

- 4.1 Apply occupational safety, health and environment practices
- 4.2 Produce crops efficiently.
- 4.3 Apply soil science properly.
- 4.4 Rear livestock as prescribed.
- 4.5 Practice farm engineering effectively
- 4.6 Apply farm management skills
- 4.7 Carry out fish farming proficiently.
- 4.8 Communicate effectively with all stakeholders
- 4.9 Apply computer skills effectively
- 4.10 Establish and manage a viable business in agriculture efficiently

5.0 COURSE DURATION

The course duration is one (1) year or 1200 notional learning hours

6.0 COURSE OUTLINE

MODULE No.	MODULE	No. OF HOURS
MODULE: 189/1 - 01-	A OCCUPATIONALSAFETY, HEALTH & ENVIRONMENT	80
MODULE: 189/1 -02-	A CROP PRODUCTION	160
MODULE: 189/1-03-	A SOIL SCIENCE	120
MODULE: 189/1 -04-	A LIVE STOCK PRODUCTION	220
MODULE: 189/1-05-	A FARM ENGINEERING	120
MODULE: 189/1-06-	A FARM MANAGEMENT	140
MODULE: 189/1-07-	A FISH FARMING	120
MODULE: 189/1-08-	A COMMUNICATION SKILLS	80
MODULE: 189/1-09-	A INTRODUCTION TO COMPUTERS	80
MODULE: 189/1-10-	A ENTREPRENEURSHIP	80
TOTAL		1200

7.0 TEACHING/LEARNING STRATEGIES

Strategies shall constitute

- 7.1 Demonstrations
- 7.2 Field visits
- 7.3 Practical training
- 7.4 Lecture
- 7.5 Discussions
- 7.6 Visual aids (Maps, Charts, Models and others)

8.0 PROGRAMME EVALUATION

TEVETA shall evaluate the programme every four years, as follows:

8.1 Formative evaluation

- 8.1.1 Purpose:** To determine on an on-going basis whether the programme is being implemented as planned and to advise on improvements.
- 8.1.2 Major areas of Evaluation:** Course Aims and Objectives student's entry requirements, course contents, teaching, learning activities, learning resources.
- 8.1.3 Evaluation Instruments:** Questionnaires, structured interviews, observations, checklist, examinations/test records, participation and attendance in class.
- 8.1.4 Sources of Information:** Students, trainers, administrative monitors and records.

8.2 Summative Evaluation

- 8.2.1 Major areas of evaluation** ñ Course aims, trainers's entry requirements, course content, learning resources, teaching/learning activities, trainees, assessors, examiners and graduates's performance in employment.
- 8.2.2 Evaluation Instruments:-** Questionnaires, structured interviews, observations, checklists, records, final integrated Examinations.
- 8.2.3 Sources of information:-** Trainees, trainers, assessors, examiners, administrators, sponsors, student dropouts, employers, union officials and the general public.

9.0 ENTRY REQUIREMENTS

- 9.1 School Leavers:** the minimum entry requirement is Grade 9-School Certificate or its equivalent with at least a pass in English Language.
- 9.2 Mature age Entry Candidates:** One year working experience in a relevant field plus a letter of recommendation from employers.
- 9.3** Level II Trade Test in General Agriculture

10.0 TRAINEES' ASSESSMENT

10.1 Final Assessment	100%
10.2 Pass Mark	50%

11.0 ATTENDANCE

The candidate must have minimum attendance of 85% to be eligible to sit for the final assessment.

12.0 PROGRESSION REQUIREMENTS

12.1 Candidates failing to pass summative assessment after first attempt will be allowed two more opportunities to re-sit the assessment, failure to which they will only be considered to re-sit the test after a two years break.

12.2 Candidates who have undergone informal training shall be allowed to sit for the final assessment as long as they show a portfolio of evidence of prior learning

13.0 STAFF QUALIFICATIONS

13.1 Certificate in General Agriculture or equivalent with not less than 2 years relevant work experience

13.2 Accredited trainer/assessor by TEVETA

13.3 A teaching qualification

13.4 A master trainer with informal qualifications shall be allowed to conduct tuition.

14.0 CERTIFICATION

Successful candidates shall be awarded a Level I Trade Test Certificate in General Agriculture by the Technical Education, Vocational and Entrepreneurship Training Authority (TEVETA).

MODULE NO: 189-01-A OCCUPATIONAL SAFETY, HEALTH AND ENVIRONMENT

NOMINAL DURATION: 80 HOURS

CREDITS: 8

MODULE PURPOSE: To equip the trainees with knowledge, skills and appropriate attitudes to effectively apply occupational safety, health and environmental practices.

LEARNING OUTCOMES: On completion of this module, trainees will be able to:

1. Apply safety standards
2. Apply safety in work place
3. Apply health practices
4. Protect the environment
5. Raise health awareness

UNIT A1.1 APPLYING SAFETY STANDARDS

- 1.1.1 Legal requirement
- 1.1.2 Statutory requirement
- 1.1.3 Environmental regulations

UNIT A1.2 APPLYING SAFETY IN WORK PLACE

- 1.2.1 Common accidents
- 1.2.2 Workplace safety
- 1.2.3 Personal protective equipment
- 1.2.4 Fire fighting
- 1.2.5 Housekeeping

UNIT A1.3 APPLYING HEALTH PRACTICES

- 1.3.1 Personal health
- 1.3.2 Occupational illness
- 1.3.3 Bites and stings
- 1.3.4 Preventive measures
- 1.3.5 First Aid

UNIT A1.4 PROTECTING THE ENVIRONMENT

- 1.4.1 Waste disposal
- 1.4.2 Sanitation
- 1.4.3 Pollution

UNIT A1.5 RAISING HEALTH AWARENESS

- 1.5.1 Common communicable diseases
- 1.5.2 Prevention interventions
- 1.5.3 Legal aspects

MODULE: 189-02-A

CROP PRODUCTION

NOMINAL DURATION:

160 HOURS

CREDITS: 16

MODULE PURPOSE: To equip the trainees with knowledge, skills and appropriate attitude to carry out crop production.

LEARNING OUTCOMES: On completion of the module, the trainees will be able to:

1. Differentiate types of crops grown in Zambia
2. Carry out crop management practices
3. Plant and sow
4. Carry out plant protection practices
5. Store crops

UNIT A2.1 DIFFERENTIATING TYPES OF CROPS GROWN IN ZAMBIA

- 2.2.1 Different types of crops
- 2.2.2 Sources of seed material
- 2.2.3 Prepare seed material

UNIT A2.2 CARRYING OUT CROP MANAGEMENT PRACTICES

- 2.3.1 Site selection
- 2.3.2 Crop rotation
- 2.3.3 Irrigation in crop production.

UNIT A2.3 PLANTING AND SOWING

- 2.3.1 Land preparation
- 2.3.2 Planting methods
- 2.3.3 Sowing methods
- 2.3.4 Plant management

UNIT A2.4 CARRYING OUT PLANT PROTECTION PRACTICES

- 2.4.1 Pests, diseases and weeds
- 2.4.2 Pest control methods
- 2.4.3 Calibration of pesticide applicators
- 2.4.4 Disease control methods
- 2.4.5 Weed control methods

UNIT A2.5 STORING CROPS

- 2.5.1 Constructing different storage facilities
- 2.5.2 Importance of storage
- 2.5.3 Methods of crop storage

MODULE: 189-03-A

SOIL SCIENCE

NOMINAL DURATION:

120 HOURS

CREDITS: 12

MODULE PURPOSE: To equip the trainees with knowledge, skills and appropriate attitude to manage and utilize soil sustainably.

LEARNING OUTCOMES: On completion of this module, the trainee will be able to:

1. Describe soil formation processes
2. Identify the physical properties of soil
3. Identify the chemical properties of soil
4. Identify different types of soil and soil organisms
5. Describe the plant-soil-water relationship

UNIT A3.1 DESCRIBING SOIL FORMATION PROCESSES

- 3.1.1 Soil components and rocks
- 3.1.2 Soil types
- 3.1.3 Advantages and disadvantages of various soil types

UNIT A3.2 IDENTIFYING THE PHYSICAL PROPERTIES OF SOILS

- 3.2.1 Soil horizons
- 3.2.2 Importance of soil horizons
- 3.2.3 Physical properties of soil

UNIT A3.3 IDENTIFY THE CHEMICAL PROPERTIES OF SOIL

- 3.3.1 The structure of PH colour chart
- 3.3.2 Major minerals and trace elements in crops
- 3.3.3 Soil improvement techniques and materials

UNIT A3.4 IDENTIFYING DIFFERENT TYPES OF SOILS AND SOIL ORGANISMS

- 3.4.1 Types of soils
- 3.4.2 Soil micro-organisms
- 3.4.3 The role of organisms in soil fertility
- 3.4.4 Benefits of organic matter to soil and plants

UNIT A3.5 DESCRIBING THE PLANT-SOIL-WATER RELATIONSHIP

- 3.5.1 Soil water
- 3.5.2 Importance of soil water in plant life
- 3.5.3 Irrigation and crop cultivation
- 3.5.4 Methods of conserving soil water

MODULE: 189-04-A

FARM ENGINEERING

NOMINAL DURATION:

120 HOURS

CREDITS: 12

MODULE PURPOSE: To equip the trainee with knowledge, skills and appropriate attitudes to utilize and maintain farm machinery and structures effectively and efficiently.

LEARNING OUTCOMES: On completion of this module, the trainee will be able to:

1. Use animals for draft purposes
2. Utilize farm machinery for various farm operations
3. Construct simple farm structures
4. Carryout maintenance of farming equipment and farm structures
5. Use different types of storage facilities

UNIT A4.1 USING ANIMALS FOR DRAFT PURPOSES

- 4.1.1 Animals suitable for draft purposes
- 4.1.2 Drafting animal training
- 4.1.3 Drafting animal utilization
- 4.1.4 Care for draft animals

UNIT A4.2 UTILIZING FARM MACHINERY FOR VARIOUS FARM OPERATIONS

- 4.2.1 Observing rules and safety precautions
- 4.2.2 Starting and stopping procedures
- 4.2.3 Farm operations using farm machinery

UNIT A4.3 CONSTRUCTING SIMPLE FARM STRUCTURES

- 4.3.1 Types of farm structures
- 4.3.2 Building materials and equipment
- 4.3.4 Constructing simple structures for various farm operations

UNIT A4.4 CARRYING OUT MAINTENANCE OF FARMING EQUIPMENT AND STRUCTURES

- 4.4.1 Importance of maintenance
- 4.4.2 Maintenance of farming equipment
- 4.4.3 Maintenance of farm structure

UNIT A4.5 USING DIFFERENT TYPES OF STORAGE FACILITIES

- 4.5.1 Conveyors
- 4.5.2 Silos
- 4.5.3 Granaries

MODULE: 189-05- A LIVESTOCK PRODUCTION

NOMINAL DURATION: **220 Hours** **CREDITS: 22**

MODULE PURPOSE: To equip the trainee with knowledge, skills and appropriate attitudes to rear animals to required standard.

LEARNING OUTCOMES: On completion of this module, the trainee will be able to:

1. Rear cattle
2. Rear sheep and goats
3. Rear pigs
4. Rear poultry
5. Rear rabbits

UNIT A5.1 REARING CATTLE

- 5.1.1 Housing cattle
- 5.1.2 Feeding cattle
- 5.1.3 Cattle breed methods
- 5.1.4 Disease control methods
- 5.1.5 Record keeping

UNIT A5.2 REARING SHEEP AND GOATS

- 5.2.1 Housing sheep and goats
- 5.2.2 Feeding sheep and goats
- 5.2.3 Sheep and goats breeding methods
- 5.2.4 Disease control methods
- 5.3.5 Record keeping

UNIT A5.3 REARING PIGS

- 5.3.1 Pig housing
- 5.3.2 Feeding pigs
- 5.3.3 Pig breeding methods
- 5.3.4 Disease control methods
- 5.3.5 Record keeping

UNIT A5.4 REARING POULTRY

- 5.4.1 Poultry housing
- 5.4.2 Poultry feeding
- 5.4.3 Poultry rearing methods
- 5.4.4 Disease control methods
- 5.4.5 Keeping poultry records

UNIT A5.5 REARING RABBITS

- 5.5.1 Housing for rabbits
- 5.5.2 Housing for rabbits
- 5.5.3 Rabbit feeding

5.5.4 Disease control methods
5.5.5 Record keeping

MODULE: 189-06-A

FARM MANAGEMENT

NOMINAL DURATION:

140 HOURS

CREDITS: 14

MODULE PURPOSE: To equip the trainee with knowledge, skills and appropriate attitudes to manage the farm effectively and efficiently.

LEARNING OUTCOMES: On completion of this module, the trainee will be able to:

1. Outline the functions of farm management
2. Apply principles of farm management
3. Identify factors of farm production
4. Carryout market farm products
5. Apply principles of Book keeping

UNIT A6.1 OUTLINING THE FUNCTIONS OF FARM MANAGEMENT

- 6.1.1 Planning
- 6.1.2 Organising
- 6.1.3 Directing (leading)
- 6.1.4 Controlling

UNIT A6.2 APPLYING PRINCIPLES OF FARM MANAGEMENT

- 6.2.1 Scope of farm management
- 6.2.2 Types and sizes of farms
- 6.2.3 Farm management principles
- 6.2.4 Management functions

UNIT A6.3 IDENTIFYING FACTORS OF FARM PRODUCTION

- 6.3.1 Factors of production
- 6.3.2 Production systems
- 6.3.3 The production cycle
- 6.3.4 Simple control systems

UNIT A6.4 CARRYING OUT MARKETING FARM PRODUCTS

- 6.4.1 Sourcing for market
- 6.4.2 Buying and selling
- 6.4.3 Managing of merchandise

UNIT A6.5 APPLYING PRINCIPLES OF BOOK KEEPING

- 6.5.1 Accounting equation
- 6.5.2 Books of Prime Entry
- 6.5.3 Bank Reconciliation
- 6.5.4 Cash handling

MODULE: 189-07-A

FISH FARMING

NOMINAL DURATION:

120 HOURS

CREDITS: 12

MODULE PURPOSE: To equip the trainee with knowledge, skills and appropriate attitudes to establish and manage fish farms

LEARNING OUTCOMES: On completion of this module, the trainee will be able to:

1. Discuss importance of fish farming in Zambia
2. Construct fish ponds
3. Manage fish ponds
4. Carry out integrated fish farming and protection
5. Harvest and market fish

UNIT A7.1 DISCUSSING IMPORTANCE OF FISH FARMING IN ZAMBIA

- 7.1.1 Economic importance of fish farming
- 7.1.2 Health benefits of eating fish
- 7.1.3 Factor affecting fish farming in Zambia

UNIT A7.2 CONSTRUCTING FISH PONDS

- 7.2.1 Classifying fish ponds
- 7.2.2 Site selection for a fish pond
- 7.2.3 Pond construction
- 7.2.4 Pond preparation for stocking

UNIT A7.3 MANAGING FISH PONDS

- 7.3.1 Fish species
- 7.3.2 Stocking rate
- 7.3.3 Fish handling and protection
- 7.3.4 Growing fish
- 7.3.5 Fish pond management

UNIT A7.4 CARRYING OUT INTEGRATED FISH FARMING AND PROTECTION

- 7.4.1 Integrated fish farming practices
- 7.4.2 Fish feeds
- 7.4.3 Fish diseases
- 7.4.4 Control of fish diseases

UNIT A7.5 HARVESTING FISH

- 7.5.1 Fish cropping
- 7.5.2 Methods of cropping
- 7.5.3 Care of fish during cropping

MODULE 189-08-A COMMUNICATION SKILLS

DURATION:

80 HOURS

CREDITS: 8

MODULE PURPOSE: To equip trainees with knowledge, skills and appropriate attitudes to communicate effectively with various stakeholders.

LEARNING OUTCOMES: On completion of the module, the trainees will be able to:

1. Use the library
2. Identify the concepts of effective communication
3. Apply study skills
4. Apply business correspondence skills
5. Write reports
6. Apply interpersonal skills in an organisation
7. Apply for a job
8. Use technical English

UNIT A8.1 USING THE LIBRARY

- 8.1.1 Filing systems
- 8.1.2 References and dictionaries
- 8.1.3 Periodicals
- 8.1.4 Bibliography
- 8.1.5 Effective use of library facilities

UNIT A8.2 IDENTIFYING PROCESS OF COMMUNICATION

- 8.2.1 Nature and purpose of communication
- 8.2.2 Types of communications
- 8.2.3 Communication process
- 8.2.3 Barriers to effective communication
- 8.2.4 Strategies of effective communication

UNIT A8.3 APPLYING STUDY SKILLS

- 8.3.1 Reading
- 8.3.2 Writing skills
- 8.3.2 Listening and speaking
- 8.3.3 Vision

UNIT A8.4 APPLYING BUSINESS CORRESPONDENCE SKILLS

- 8.4.1 Letters
- 8.4.2 Memorandum
- 8.4.3 Circulars
- 8.4.4 Notices
- 8.4.5 Forms and documentation

UNIT A8.5 WRITING REPORTS

- 8.5.1 Types of reports
- 8.5.2 Report formats

- 8.5.3 Composing different types of reports
- 8.5.5 Research techniques

UNIT A8.6 APPLYING INTERPERSONAL SKILLS

- 8.6.1 Consulting
- 8.6.2 Instructions
- 8.6.3 Permission
- 8.6.5 Decision making
- 8.6.5 Dealing with clients

UNIT A8.7 APPLYING FOR A JOB

- 8.7.1 Application letter
- 8.7.2 Curriculum vitae
- 8.7.3 Interview

UNIT A8.8 USING TECHNICAL ENGLISH

- 8.8.1 Technical definitions
- 8.8.2 Technical instructions
- 8.8.3 Technical descriptions

MODULE : 189-09-A

INTRODUCTION TO COMPUTERS

DURATION: 80 HOURS

CREDITS: 8

MODULE PURPOSE: To equip the trainees with knowledge, skills and appropriate attitudes to effectively use computer applications.

LEARNING OUTCOMES: On completion of this module, the trainees will be able to:

1. Operate a computer system
2. Use an operating system
3. Use word processor for technical report writing
4. Send and receive e-mail
5. Use spread sheets
6. Use internet
7. Use power point for presentation

UNIT A9.1 OPERATING A COMPUTER SYSTEM

- 9.1.1 On and off the computer
- 9.1.2 Components of a computer
- 9.1.3 Input and output devices
- 9.1.4 Storage devices
- 9.1.6 Printers
- 9.1.4 Hard disc and its maintenance
- 9.1.5 Basic computer maintenance

UNIT A9.2 USING AN OPERATING SYSTEM

- 9.2.1 File system
- 9.2.2 Libraries
- 9.2.3 Install programmes
- 9.2.4 Virus, protection and removal

UNIT A9.3 USING WORD PROCESSING FOR RECHNICAL REPORT WRITING

- 9.3.1 Document handling
- 9.3.2 Basic editing functions
- 9.3.3 Commands

UNIT A9.4 SENDING AND RECEIVING E-MAIL

- 9.4.1 Composing e-mail
- 9.4.2 Sending e-mail
- 9.4.3 Receiving e-mail
- 9.4.4 Replying to e-mail
- 9.4.5 Forwarding e-mail
- 9.4.6 Observing etiquette

UNIT A9.5 USING SPREADSHEETS

- 9.5.1 Spread sheet handling
- 9.5.2 Use of commands
- 9.5.3 Functions
- 9.5.4 Charts
- 9.5.5 Graphs

UNIT A9.6 USING THE INETRNET

- 9.6.1 Benefits of using internet
- 9.6.2 Browsing the web
- 9.6.3 Saving web pages
- 9.6.4 Downloading documents
- 9.6.5 Rulers for using the internet

UNIT A9.7 USING POWERPOINT FOR PRESENTATIONS

- 9.7.1 Presentation handling
- 9.7.2 Inserts
- 9.7.3 Formatting
- 9.7.4 Diagrams and drawings
- 9.7.5 Graphs

MODULE: 189-10-A

ENTREPRENEURSHIP

DURATION:

80 HOURS

CREDITS: 8

MODULE PURPOSE: To equip trainees with entrepreneurial knowledge, skills and appropriate attitude to efficiently establish and manage a profitable business.

LEARNING OUTCOMES: On completion of the module, the trainee will be able to

1. Use entrepreneurial concepts
2. Demonstrate entrepreneurial competencies
3. Establish an enterprise
4. Manage business
5. Expand a business
6. Establish business networks
7. Develop a business exit plan

UNIT: A10.1 USING ENTREPRENEURSHIP CONCEPTS

- 10.1.1 Concepts of entrepreneurship
- 10.1.2 Economic trends in Zambia
- 10.1.3 Role of entrepreneurship in national development
- 10.1.4 Informal and formal sectors
- 10.1.5 Types of entrepreneurs
- 10.1.6 Entrepreneurship, money and wealth
- 10.1.7 Creativity, inventions and innovations

UNIT: A10.2 DEMONSTRATING ENTERPRENEURIAL COMPETENCES

- 10.2.1 Identifying competences
- 10.2.2 Assessing competences
- 10.2.3 Applying competences

UNIT: A10.3 ESTABLISHING AN ENTERPRISE

- 10.3.1 Generating and selecting business ideas
- 10.3.2 Market survey
- 10.3.3 Business opportunity
- 10.3.4 Business model and form
- 10.3.5 Business plan
- 10.3.6 Business registration and licensing
- 10.3.7 Complying with statutory obligations
- 10.3.8 Financial and non-financial resources
- 10.3.9 Launching the business

UNIT: A10.4 MANAGING A BUSINESS

- 10.4.1 Develop business systems
- 10.4.2 Markets and marketing
- 10.4.3 Production and technology

- 10.4.4 Human resources
- 10.4.5 Finance
- 10.4.6 Business ethics and values
- 10.4.7 Assessing business performance

UNIT: A10.5 EXPANDING A BUSINESS

- 10.5.1 Producing and selling new products
- 10.5.2 Expanding existing markets
- 10.5.3 Buying other similar businesses
- 10.5.4 Diversifying into new markets

UNIT: A10.6 ESTABLISHING BUSINESS NETWORKS

- 10.6.1 Working with other businesses
- 10.6.2 Belonging to an industry association
- 10.6.3 Establishing linkages with service providers
- 10.6.4 Participating in community events

UNIT: A10.7 DEVELOPING A BUSINESS EXIT PLAN

- 10.7.1 Exit plan
- 10.7.2 Succession plan
- 10.7.3 Estate plan

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