



Level 2

Occupational Standard for National Vocational Qualification Aquaponics

The National Training Agency
Belmont Rd.
St. George's
GRENADA

Phone: 1 -473 -435-9092/9093
Fax: 1-473-435-9094
E-mail: executive@grenadanta.gd
Website: www.grenadanta.gd

ACKNOWLEDGEMENT

The Grenada National Training Agency would like to thank the following persons for their contribution in vetting this document.

Members of the Aquaponic Level 2 lead body.

<u>Name</u>	<u>Profession/Organisation</u>
Kelvin Dottin	Principal, Grace Lutheran Church and School
Christopher Stroude	Social Worker, Her Majesty's Prison
Ryan Hellpap	Development Specialist, Kingdom Workers
Dunstan Campbell	Consultant, Gouyave Urban Gardeners
Dave Marancik	Director of Animal Medicine, Saint George's University, School of Veterinary Medicine
Kelvin La Touche	Grace Lutheran Church and School
Donessa George	Community Youth Officer, MAREP
Kenny George	Entrepreneur, Grenstart
Benny Languaigne	Social Worker, GRENCODA
Akarda Ventour	Consultant, SADO
Malarchy Dottin	Biotechnologist, Ministry of Agriculture
Lex Mc Bain	Retired Public Officer
Evans Gooding	President, North East Farmers Organization
Leslie Roche	Farmer, Gouyave Urban Gardener
Ted Charles	Aquaponics Farmer
Aaron Sylvester	Aquaponics Farmer
Ib Meyer	Director, Grace Lutheran Church and School
Augustine David	Feed Sales Manager, Caribbean Agro Industries
Josh Nelson	Teacher/expert in Aquaponics, St. Peter's School
Bob Anderson	Marine Biology, WLC (Wisconsin Lutheran College)

INTRODUCTION

The Grenada National Training Agency (GNTA) as empowered by the GCTVET Act of 2009 is the agency mandated to co-ordinate, facilitate and enable the development and growth of Technical and Vocational Education and Training in Grenada Carriacou and Petite Martinique.

The Agency through modes of training intervention intends to help in ensuring that there exists a supply of trained and skilled workers to service labour market needs and thereby contribute to higher levels of productivity in the Grenadian economy. The organisation by way of policy seeks to have developed and approved occupational standards derived from industry specifications and to guide the training, assessment and certification within the Grenada TVET System.

The Grenada Council for Technical Vocational Education and Training (GCTVET) created by an ACT of parliament in 2009 is empowered to approve standards for the award certification leading to CVQ's and NVQ's.

The GNTA has established industry lead groups responsible for vetting standards as well as specifying and recommending standards to be approved.

ABOUT THIS STANDARD

This is a National Vocational Qualification (NVQ) that has been approved for training and certification in Grenada.

This standard was adapted and approved by the Grenada Council for Technical Vocational Education and Training (GCTVET) on 6th September 2018.

There are some minor modifications made to accommodate the local context; however, the overall content of the document is unchanged.

QUALIFICATION OVERVIEW

The NVQ Level 2 in Aquaponics is for individuals whose role requires well developed behavioural competencies but whose scope for independent decision making and for bringing about change is unlimited.

They are likely to be in roles where they are required to:

- Provide accurate Financial Management of an Aquaponics Systems
- Carry Out Data Entry and Retrieval Procedures
- Maintain the Aquaculture Part of the System – Advanced
- Maintain the Hydroponic Part of the System – Advanced
- Observe workplace health and safety requirement
- Meeting Industry Requirements

Normally persons working at Level 2 should be able to competently carry out simple, complex and routine work activities and to collaborate with others. The qualification covers competencies by providing services in Aquaponics Level 2 such as being able to understand and carry out components of aquaponics systems operations as indicated in the competency standard.

Relevant occupation include:

- Gardener/Aquaponics farmer

The holders of this qualification will demonstrate a range of personal presentations and demonstrations of team work skills and literacy skills. To achieve this qualification all core units must be achieved. The nominal training hours are a guide for planning the delivery of training programmes.

Please note that certification can be gained through formal training or on- the- job experience by scheduling assessments with the Grenada National Training Agency (GNTA) Certified Assessors.

Occupational Standards for National Vocational Qualification (NVQ)

NVQ Level 2- Aquaponics

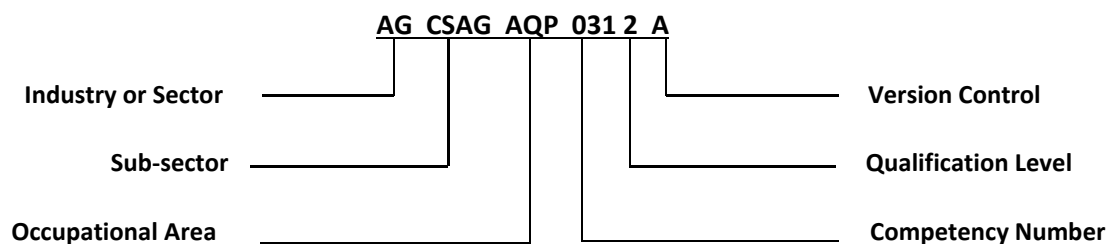
AGCSAGAQP2002

Unit Number	Unit Title	Requirement
AGCSAGAQP0062A	Construct, repair and maintain an Aquaponics System	Mandatory
AGCSAGAQP0072A	Provide accurate Financial Management of an Aquaponics System	Mandatory
ITICOR0011A	Carry Out Data Entry and Retrieval Procedures	Mandatory
AGCSAGAQP0082A	Maintain the Aquaculture Part of the System - Advanced	Mandatory
AGCSAGAQP0092A	Maintain the Hydroponic Part of the System - Advanced	Mandatory
AGGCOR0021A	Observe workplace health and safety requirement	Mandatory
AGGCOR001A	Meeting Industry Requirements	Mandatory
BCBSBM0012A	Craft Personal Entrepreneurial Strategy	Mandatory

To obtain a National Vocational Qualification (NVQ) all Mandatory Units must be achieved.

Legend to unit Code

Example: AGCSAGAQP0312A



Sector -Agriculture (AG), Sub-Sector – Climate Smart Agriculture (CSAG), Occupational Area – Aquaponics (AQP)

AGCSAGAQP0062A:

Construct, Repair and Maintain an Aquaponics System

Competency Descriptor:

This unit deals with the skills and knowledge required by persons working in the aquaponics sector and involves the use of computational and construction skills. It includes the ability to learn new processes, identify needed materials, safely use building tools and follow a construction plan.

Elements of Competency	Performance Criteria
1. Implement workplace safety and safe use of tools	<ul style="list-style-type: none"> 1.1 Explain basic occupational health and safety procedures 1.2 Describe an organized, clean, clutter free work area 1.3 Describe the tools necessary to build an aquaponics system 1.4 Demonstrate the safe use of each required tool 1.5 Explain basic first aid treatment 1.6 Carryout measurements and calculations necessary for construction of an aquaponics system
2. Identify the appropriate type of aquaponics system	<ul style="list-style-type: none"> 2.1 Describe the three most common types of small scale aquaponics systems 2.2 Describe the site requirements for each type of aquaponics system 2.3 Explain the basic function of each system 2.4 Describe The primary benefits and drawbacks of each system 2.5 Describe the major components of each system 2.6 Estimate the relative cost of each type of system
3. Construct an aquaponics system.	<ul style="list-style-type: none"> 3.1 Explain the purpose of the major component parts of each type of aquaponic system 3.2 Explain the design specifications 3.3 Describe potential local sources for system parts 3.4 Using parts provided construct an aquaponics system following design specifications 3.5 Describe alternatives for system parts
4. Demonstrate proper guidelines to repair and maintain an aquaponic system	<ul style="list-style-type: none"> 4.1 Describe the primary system failures that could occur 4.2 Explain the repair process for each primary system failure 4.3 Describe the essential backup components to have in reserve to address system failures 4.4 Demonstrate the process of identifying and fixing system water leaks 4.5 Demonstrate water pump replacement 4.6 Assemble a battery backup system

Range Statement

This unit may include but not limited to:

1. Personal protective equipment includes:
 - Boots/closed shoes
 - Safety glasses
2. Equipment and tools include:
 - Relevant tools
 - Water testing kit
 - General office equipment e.g. notebooks/computer, calculator

Underpinning Knowledge and Skills

Candidates must know and understand:

1. Training & education
2. Understanding cultural agricultural practices
3. Availability of materials
4. Budgeting
5. National policy on Agriculture
6. Food safety policy
7. National nutrition policy

Evidence Guide

1) Critical Aspects of Evidence

Evidence should include a demonstrated ability to:

- a. Effectively repeat learned skills in aquaponics regarding the following:
 1. Identifying the different types of aquaponics systems
 2. aspects of fish health and maintenance of an aquaculture environment
 3. Executing all aspects of plant health and maintenance of a hydroponic environment
- b. Follow all safety regulations when working
- c. Use personal protective equipment effectively at all times
- d. Check all tools and equipment to ensure they are in good working order
- e. Use/operate tools, equipment and materials according to manufacturer's instructions and workplace procedures
- f. Store tools, equipment and materials according to workplace procedures
- g. Dispose of waste according to workplace procedures
- h. Report, communicate and cooperate with others according to workplace procedures

2) Method of assessment

Assessors should gather a range of evidences that is valid, sufficient, current and authentic.

Evidence may be gathered through a variety of ways including direct observation oral and written questioning. Questioning techniques should not require language, literacy and numeric

skills beyond those required in this unit of competency. The candidates must have access to a suitable venue and all materials and documentation required. The candidate must be permitted to refer to any relevant workplace procedures, product and manufacturing specifications, codes an, standards, manuals and reference materials.

3) Context of assessment

This unit may be assessed on the job. The competencies covered by the unit would be demonstrated by an individual working alone or as part of a team. The assessment environment should not disadvantage the candidate.



AGCSAGAQP0072A:

Provide accurate Financial Management of an Aquaponics System

Competency Descriptor:

This unit deals with the skills and knowledge required by persons working in the aquaponics sector and involves the use of computational and financial analysis skills. It includes the ability to identify costs, estimate profits and establish realistic goals.

Elements of Competency	Performance Criteria
1. Identify steps to determine the cost of constructing an aquaponics system	<ul style="list-style-type: none">1.1 Demonstrate how to determine local costs of materials1.2 Demonstrate how to determine local costs of starter plants and fish1.3 Estimate the time involved in construction1.4 Calculate construction labor costs1.5 Estimate costs of connecting to electrical service or alternatives
2. Determine the appropriate size of an aquaponics system based on economic conditions	<ul style="list-style-type: none">2.1 Describe the benefits of different plant and fish species2.2 Describe the challenges of different plant and fish species2.3 Illustrate the selection process for the best species for your system location
3. Determining the cost of initiating and operating an aquaponics system	<ul style="list-style-type: none">3.1 Explain how to calculate electrical usage and cost for each type of system3.2 Explain how to calculate the cost of water to fill and operate the system3.3 Explain how to estimate the number and cost of fish to initiate and maintain each type of system3.4 Explain how to determine the number and types of plants to grow in each type of system
4. Estimate return on investment	<ul style="list-style-type: none">4.1 Explain how to determine sale price for fish and produce4.2 Describe potential markets for fish and produce4.3 Explain the difference between gross and net profit4.4 Calculate gross and net profit4.5 Estimate system maintenance costs

Range Statement

This unit may include but not limited to:

1. Personal protective equipment includes:
 - None required
2. Equipment and tools include:
 - Relevant tools to estimate costs and benefits
 - Computer spread sheets or record keeping notebooks
 - Calculators

Underpinning Knowledge and Skills

Candidates must know and understand:

1. Basic mathematics skills
2. Budgeting process
3. Project planning process
4. Purchasing process

Evidence Guide

1) Critical Aspects of Evidence

Evidence should include a demonstrated ability to:

- a. Effectively repeat learned skills in aquaponics regarding the following:
 1. Identifying the different types of aquaponics systems
 2. aspects of fish health and maintenance of an aquaculture environment
 3. Executing all aspects of plant health and maintenance of a hydroponic environment
- b. Describe and identify different expenses and benefits of operating an aquaponics system
- c. Follow all safety regulations when working
- d. Use personal protective equipment effectively at all times
- e. Dispose of waste according to workplace procedures
- f. Report, communicate and cooperate with others according to workplace procedures

2) Method of assessment

Assessors should gather a range of evidences that is valid, sufficient, current and authentic. Evidence may be gathered through a variety of ways including direct observation oral and written questioning. Questioning techniques should not require language, literacy and numeric skills beyond those required in this unit of competency. The candidates must have access to a suitable venue and all materials and documentation required. The candidate must be permitted to refer to any relevant workplace procedures, product and manufacturing specifications, codes an, standards, manuals and reference materials.

3) Context of assessment

This unit may be assessed on the job. The competencies covered by the unit would be demonstrated by an individual working alone or as part of a team. The assessment environment should not disadvantage the candidate.



ITICOR0011A

Carry Out Data Entry and Retrieval Procedures

Competency Descriptor:

This unit deals with the skills and knowledge required to operate computer to enter, manipulate and retrieve data and to access information and communicate via the Internet.

Competency Field: Information Technology and Communications - Operations

Elements of Competency	Performance Criteria
1. Initiate computer system	<ul style="list-style-type: none">1.1 Equipment and work environment are correctly checked for readiness to perform scheduled tasks.1.2 The hardware components of the computer and their functions are correctly identified.1.3 Equipment is powered up correctly.1.4 Access codes are correctly applied.1.5 Appropriate software is selected or loaded from the menu.
2. Enter data	<ul style="list-style-type: none">2.1 Types of data for entry correctly identified and collected.2.2 Input devices selected and used are appropriate for the intended operations.2.3 Manipulative procedures of Input device conform to established practices.2.4 Keyboard/mouse is operated within the designated speed and accuracy requirements.2.5 Computer files are correctly located or new files are created, named and saved.2.6 Data is accurately entered in the appropriate files using specified procedure and format.2.7 Data entered is validated in accordance with specified procedures.2.8 Anomalous results are corrected or reported in accordance with specified procedures.2.9 Back-up made in accordance with operating procedures.
3. Retrieve data	<ul style="list-style-type: none">3.1 The identity and source of information is established.3.2 Authority to access data is obtained where required.3.3 Files and data are correctly located and accessed.3.4 Integrity and confidentiality of data are maintained.3.5 The relevant reports or information retrieved using approved procedure.3.6 Formats to retrieved report or information conform to that required.3.7 Copy of the data is printed where required.
4. Amend data	<ul style="list-style-type: none">4.1 Source of data/information for amendment is established.



- 4.2 Data to be amended is correctly located within the file.
 - 4.3 The correct data/Information is entered, changed or deleted using appropriate input device and approved procedures.
 - 4.4 The Integrity of data is maintained.
5. Use document layout and data format facilities
- 5.1 Requirements for document are verified where necessary.
 - 5.2 The given format and layout are appropriately applied.
 - 5.3 Facilities to achieve the desired format and layout are correctly identified, accessed and used.
 - 5.4 Data manipulating facilities are used correctly.
 - 5.5 Format reflects accuracy and completeness.
6. Monitor the operation of equipment
- 6.1 Types of data for entry correctly identified and collected.
 - 6.2 The system is monitored to ensure correct operation of tasks.
 - 6.3 Routine system messages are promptly and correctly dealt with.
 - 6.4 Non-routine messages are promptly referred in accordance with operating requirements.
 - 6.5 Error conditions within level of authority are dealt with promptly, and uncorrected errors are promptly reported.
 - 6.6 Output devices and materials are monitored for quality.
- 7 Access and transmit information via the Internet
- 7.1 Access to the Internet is gained in accordance with the provider's operating procedures.
 - 7.2 Evidence of the ability to negotiate web sites to locate and access specified information and other services is efficiently demonstrated.
 - 7.3 E-Mail is sent and retrieved competently.
8. lose down computer system
- 8.1 The correct shut down sequence is followed.
 - 8.2 Problem with shutting down computer is reported promptly.
 - 8.3 All safety and protective procedures are observed.
 - 8.4 The system integrity and security are preserved.
9. Close down computer system
- 9.1 Cleaning materials and/or solutions used meet specified recommendation.
 - 9.2 The equipment is cleaned as directed.
 - 9.3 Wear and faults identified are promptly reported to the appropriate personnel.

Range Statement

This unit applies to activities associated with essential operations linked to using and maintaining basic computer equipment.



Work environment:

- equipment
- furniture
- cabling

Equipment

:

- install supplied computer
- install supplied peripherals

Software systems to include for:

- word processing
- spread sheet
- internet access

Data:

- textual
- numerical
- graphical

File operations:

- naming
- updating
- archiving
- traversing field and records in database
- use of search
- sort

Input devices:

- keyboard
- mouse
- scanner
- microphone
- camera

Maintenance:

cleaning:

- enclosures
- screen
- input devices

Files save on:

- network
- magnetic media
- personal PC

Evidence Guide

Competency is to be demonstrated by the ability to accurately carry out basic data entry and retrieval operations on a computer system in accordance with the performance criteria and the range listed within the range of variables statement.

(1) Critical Aspects and Evidence

It is essential that competence be observed in the following aspects:

- initiate the use on the equipment
- use document layout and data format facilities
- locate and access data
- use file operations
- manipulate input devices



- key-in and format reports
- access to the internet

(2.) Pre-requisite Relationship of Units

The pre-requisite for this unit is:

- Nil

(3) Underpinning Knowledge and Skills

Knowledge

knowledge of:

- safety for working with and around computers
- computer hardware and software systems
- procedure for initiating and closing down computer
- the operation of the data entry management system
- methods of locating files
- organisation's standards applicable to accessing files
- files operations and their applications
- file operation in database setting
- creating, locating and saving files
- using input devices
- using data checking devices
- formatting functions of software
- layout function of software
- graphic productions and manipulation
- regard for accuracy and security of information
- functions on the internet

Skills

The ability to:

- identify computer hardware
- manipulate data input devices
- access data
- use file operations
- key-in and format reports and letters
- retrieve data
- amend data
- print data
- save data
- search and receive data from the internet
- send and receive E-Mail

(4) **Resource Implications**

Files saved on network, magnetic media, and personal Computer

Input devices: Keyboard, mouse, other selection devices



(5.) Method of Assessment

Competency shall be assessed while work is undertaken under direct supervision with regular checks but may include some autonomy when working as part of a team.

Competencies in this unit may be determined concurrently. Assessment must be in accordance with the performance criteria.

(6.) Context of Assessment

This unit may be assessed on or off the job. Assessment should include practical demonstration either in the workplace or through a simulation. A range of methods to assess underpinning knowledge should support this.



AGCSAGAQP0082A:

Maintain the Aquaculture Part of the System - Advanced

Competency Descriptor:

This unit deals with the skills and knowledge required by persons working in the aquaponics sector and involves the use of computational and analytical skills involved in testing and monitoring, as well as disease and pest management related to fish health.

Elements of Competency	Performance Criteria
1. Monitor the key water quality parameters associated with fish health.	1.1 Identify safe pH range 1.2 Identify safe ammonia range 1.3 Identify safe nitrite and nitrate range 1.4 Identify safe temperature range 1.5 Set up a water quality monitoring schedule
2. Demonstrate proper procedures to improve water quality.	2.1 Remove excess waste from fish tank 2.2 Perform a water exchange 2.3 Reduce number of fish in the tank 2.4 Increase water flow
3. Identify when a fish is stressed or sick.	3.1 Describe normal fish behavior 3.2 Identify what a stressed or sick fish looks like 3.3 Identify signs of dominance/aggression 3.4 Set up a regular fish observation schedule
4. Apply proper procedures that reduce the introduction and spread of disease	4.1 Explain the risks that come with introducing new fish to a system 4.2 Develop procedures to safely introduce new fish to a system 4.3 Perform general cleaning procedure to reduce transfer of disease between systems 4.4 Set up a general cleaning schedule

Range Statement

This unit may include but not limited to:

1. Personal protective equipment includes:
2. Equipment and tools include:

Underpinning Knowledge and Skills

Candidates must know and understand:

1. Water testing procedures
2. How to keep a log of water quality test results
3. Safe ranges for all water quality parameters
4. Physical and behavioral signs of fish disease or stress
5. Safe procedures for cleaning and sanitizing equipment
6. How diseases can be transferred from the wild or between systems

Evidence Guide

1) Critical Aspects of Evidence

Evidence should include a demonstrated ability to:

1. Correctly measure test reagents
2. Correctly interpret water quality test results
3. Legibly record water quality monitoring results
4. Set up schedules for monitoring, cleaning and sanitizing
5. Cleaning procedures
6. Set up a quarantine system

2) Method of assessment

Assessors should gather a range of evidences that is valid, sufficient, current and authentic. Evidence may be gathered through a variety of ways including direct observation oral and written questioning. Questioning techniques should not require language, literacy and numeric skills beyond those required in this unit of competency. The candidates must have access to a suitable venue and all materials and documentation required. The candidate must be permitted to refer to any relevant workplace procedures, product and manufacturing specifications, codes an, standards, manuals and reference materials.

3) Context of assessment

This unit may be assessed on the job. The competencies covered by the unit would be demonstrated by an individual working alone or as part of a team. The assessment environment should not disadvantage the candidate.



AGCSAGAQP0092A:

Maintain the Hydroponic Part of the System - Advanced

Competency Descriptor:

This unit deals with the skills and knowledge required by persons working in the aquaponics sector and involves the use of computational and analytical skills involved in testing and monitoring, as well as disease and pest management related to plant health.

Elements of Competency	Performance Criteria
1. Monitor plant growth and health.	1.1 Identify healthy plant coloration 1.2 Identify signs of nutrient deficiency 1.3 Measure local growth rates for each plant species 1.4 Measure and record plant growth on a regular schedule 1.5 Identify signs of pest damage 1.6 Identify common local agricultural pests
2. Monitor plant nutrient and pH levels	2.1 Determine required nutrient ranges for species of plants in the grow bed 2.2 Determine required pH range for species of plants in the grow bed 2.3 Keep organized logs of test results
3. Apply proper procedures for removal of pests.	3.1 Explain dangers of pesticide use in aquaponic systems 3.2 Determine safe methods to kill plant pests 3.3 Identify methods to reduce pest access to plants
4. Explain plant pruning and stabilization procedures.	4.1 Describe the expected growth forms of selected plants 4.2 Describe structures required to support various plant growth forms (ie vines, tall plants, spreading plants) 4.3 Apply pruning process for each plant species 4.4 List general cleaning procedures for pruning equipment 4.5 Set up general pruning and cleaning schedule

Range Statement

This unit may include but not limited to:

- 1. Personal protective equipment includes:
- 2. Equipment and tools include:

Underpinning Knowledge and Skills

Candidates must know and understand:

1. Basic knowledge of local agricultural plant species
2. Basic knowledge of local agricultural plant pests
3. Basic knowledge of local agricultural plant diseases
4. Proper pH range for plants
5. Proper nitrate range for plants
6. Leaf coloration for a healthy plant
7. Expected plant form for each species in grow bed
8. Proper pruning procedures for each species

Evidence Guide

1) Critical Aspects of Evidence

Evidence should include a demonstrated ability to:

1. Identify local agricultural plant species
2. Identify local agricultural plant pests
3. Identify signs of plant disease
4. Identify signs of low nutrients
5. Test water for nutrient levels
6. Test water for pH level
7. Construct structures to support plants
8. Properly prune plants

2) Method of assessment

Assessors should gather a range of evidences that is valid, sufficient, current and authentic. Evidence may be gathered through a variety of ways including direct observation oral and written questioning. Questioning techniques should not require language, literacy and numeric skills beyond those required in this unit of competency. The candidates must have access to a suitable venue and all materials and documentation required. The candidate must be permitted to refer to any relevant workplace procedures, product and manufacturing specifications, codes an, standards, manuals and reference materials.

3) Context of assessment

This unit may be assessed on the job. The competencies covered by the unit would be demonstrated by an individual working alone or as part of a team. The assessment environment should not disadvantage the candidate.

AGGCOR0021A

Observe workplace health and safety requirement

Competency Descriptor:

This unit deals with the skills and knowledge required by workers to meet workplace occupational health and safety requirements.

Competency Field: Agriculture

Elements of Competency	Performance Criteria
<p>1. Maintain a clean and efficient workplace</p>	<p>1.1 Basic safety checks are undertaken before operation of all machinery and vehicles and hazards are reported to the appropriate supervisor</p> <p>1.2 Work for which protective clothing or equipment is required is identified and the appropriate protective clothing or equipment is used in performing these duties in accordance with workplace policy.</p> <p>1.3 Prior to performing manual handling jobs, risk is assessed and work is carried out according to currently recommended safe practice.</p> <p>1.4 Risks to bystanders are recognized and action is taken to reduce risk associated with jobs in the workplace</p> <p>1.5 All procedures and work instructions for controlling risk are followed closely.</p>
<p>2. Render appropriate emergency procedures</p>	<p>2.1 Individuals maintain the necessary knowledge of and ability to follow procedures for dealing with accidents, fires and emergencies, including communicating location and directions to emergency.</p> <p>2.2 Emergency procedures are followed to company standards and workplace requirements.</p> <p>2.3 Emergency equipment is used in accordance with manufacturers' specifications and workplace requirements.</p>
<p>3. Participate in arrangements for maintaining health and safety of all people in the workplace</p>	<p>3.1 Appropriate authorities are notified according to company policy. Contributions are made to the ongoing monitoring and reporting of all aspects of (OHS).</p>

Range Statement

The Range Statement provides advice to interpret the scope and context of this unit of competency, allowing for differences between enterprises and workplaces. It relates to the unit as a whole and facilitates holistic assessment. The following variables may be present for this particular unit.

This unit of competency should be demonstrated:

- in accordance with the enterprise's policies and procedures for maintaining health and safety at the workplace

Hazardous manual handling tasks include:

- moving
- lifting
- carrying bags, drums, cartons
- shoveling
- loading materials
- pulling
- pushing
- up-ending materials
- chipping weeds
- picking fruit or vegetables

Protective clothing or equipment is required for:

- noise associated with plant and machinery
- pesticides
- dust
- work in the sun

Legislation, codes and national standards relevant to the workplace may include:

- Labour laws of Jamaica
- Pesticide control authority regulations
- Occupational Health & Safety (OHS)
- Hygiene requirements
- First Aid regulations/requirements

This unit of competency should be demonstrated in accordance with the enterprise's:

Hazards in the workplace include:

- plant and machinery operation and maintenance
- vehicles including motorcycles
- noise
- chemicals
- manual handling
- dust
- solar radiation
- natural hazards in trees (thorns and spines)
- electricity
- waterways

Risk to bystanders include:

- run-over and injury associated with vehicles and machinery
- exposure to noise

Workplace procedures will include:

- hazard policies and procedures
- emergency policies and procedures
- procedures for use of personal protective clothing and equipment
- hazard identification and issue resolution procedures
- job procedures and work instructions

OHS emergencies in the workplace may include:

- electrocution
- fire
- flood
- chemical spills
- serious injury associated with tractors
- machines
- vehicles

Workers may include:

- permanently employed workers
- casual workers
- seasonal workers
- people visiting the workplace.
- contract workers

Other individuals may include:

- people visiting the workplace

Evidence Guide

Competency is to be demonstrated by the ability to apply of knowledge and skills to a limited range maintenance tasks and roles.

(1) Critical Aspects of Evidence

- Evidence should include a demonstrated ability to consistently follow supervisor's instructions and use methods and procedures that are predictable to perform a limited range of maintenance roles in the appropriate context and to the level acceptable by the enterprise.
- The work is likely to be under direct supervision with regular checking. Reporting and

recording is undertaken within established routines using methods and procedures that are predictable. There is a specified range of duties and contexts where the choice of actions required will be made quite clear by the supervisor.

(2) Pre-requisite Relationship of Units

- Nil

(3) Underpinning Knowledge and Skills

(4) Knowledge

Knowledge of:

- significant hazards in the workplace
- local emergency services
- personal hygiene and fitness requirements

Skills

The ability to:

- follow workplace procedure for hazard identification and risk control
- act in an emergency
- maintain health and fitness
- render first aid

(5) Resource Implications

The following resources should be made available:

(4) Method of Assessment

Competency shall be assessed while work is undertaken under direct supervision and when the student/ apprentice is able to successfully perform all the required Performance Criteria relevant to the Unit in a workplace or simulated farm environment, within commercially acceptable timeframes.

Competencies in this unit may be demonstrated concurrently.

(6) Context of Assessment

This unit must be assessed through practical demonstration on-the-job or in a simulated workplace environment requiring until competency is achieved./*
The underpinning knowledge may be assessed off-the-job with the use of written or verbal items inclusive of short answer, extended essay items project or portfolio.

AGGCOR001A

Meeting Industry Requirements

Competency Descriptor:

This unit deals with the skills and knowledge required to meet the basic requirements for employment in Agriculture.

Competency Field: Agriculture

Elements of Competency	Performance Criteria
1. Agree with employment condition	1.6 Employment documentation is checked for compliance with agreed terms and conditions. 1.7 Employment conditions are checked to ensure currency is maintained.
2. Meet workplace employment requirements	2.1 Industry developments are promoted in workplace context to improve quality, productivity and conditions. 2.2 Work practices comply with codes of practice and workplace expectations. 2.3 Faults and abnormalities in the workplace are recognised and reported to the appropriate person. 2.4 Dress and personal requirements comply with workplace standards and Occupational Health & Safety (OHS). 2.5 Agreed outcomes are met through completion of workplace routines and specific instructions.
3. Observe and record in the workplace	3.8 Issues and events occurring in the workplace daily and which may require attention are identified. 3.9 Information is recorded accurately and in the required format. 3.10 Communication technology relevant to the enterprise is used under supervision.
4. Interact with others in the workplaces	4.5 Issues or events requiring action or attention are reported to supervisor with the level of detail laid down in workplace instructions. 4.6 Queries are stated clearly, courteously and concisely. 4.7 Telephone messages are taken accurately, information recorded appropriately and calls redirected to other staff efficiently. 4.8 Work instructions are clarified where necessary and concerns are raised promptly with the supervisor. 4.9 A positive attitude is maintained in interacting with others.
5. Work in a team	5.6 Allocated tasks are identified and completed within defined time-lines. 5.7 Assistance is actively sought by approaching other team members when difficulties arise.

6. Meet, greet and direct clients and customers

- 5.8 Feedback provided by others in the working groups is acknowledged.
- 5.9 Appropriate lines of communication with supervisors and peers are demonstrated according to enterprise policy.
- 5.10 Support and tolerance are offered and provided to colleagues.
- 5.11 Participation in team problem solving activities is demonstrated.
- 6.7 Client is greeted in line with enterprise policy.
- 6.8 Questioning and active listening is used to elicit client needs.
- 6.9 Clients with special needs are referred or redirected as required.
- 6.10 A positive attitude is maintained in interacting with clients and customers.
- 6.11 Telephone is answered promptly, calls re-directed to appropriate person or messages recorded according to enterprise policy.

Range Statement

This unit of competency should be demonstrated in accordance with the enterprise's terms and conditions which may include:

- relevant awards
- employment contracts
- workplace requirements orally or in writing
- work ethics
- personal grooming and hygiene policy policies and procedures
- enterprise position description (delegated responsibilities)
- organisational structure of enterprise

- Hygiene requirements
- First Aid regulations/requirements

Industry developments may include:

- implications of technology changes on employment
- industry environment
- changes in market conditions

Actions may include:

Legislation, codes and national standards relevant to the workplace may include:

- Labour laws of Jamaica
- Pesticide control authority regulations (PCA)
- relevant environmental protection agency
- Occupational Health & Safety (OHS)

- reporting
- rectifying faults
- prevention of damage, such as reporting of machinery problems before they become major
- fixing minor problems such as water leaks, damage to fences

Work practices may include:

- care of equipment
- handling of products
- materials and crops
- farm operations
- maintaining time books, diaries and other records

Communication technology may include:

- Faxes
- Answering machines
- Telephone networks, cellular phone, intercom system, two-way radio
- electronic mail (e-mail)
- simple/basic interaction with computers
- Customers include those with special needs

Evidence Guide

Competency is to be demonstrated by the ability to apply knowledge and skills of industry requirements in an agricultural related enterprise.

(1) Critical Aspects of Evidence

Evidence should include a demonstrated ability to:

- consistently follow supervisor's instructions and apply industry requirements in an agricultural setting in the appropriate context and to the level acceptable by the enterprise
- report and record within established routines using methods and procedures that are predictable

(2) Pre-requisite Relationship of Units

- AGGCOR0031A Plan and organize work

(3) Underpinning Knowledge and Skills

Knowledge

Knowledge of:

- trade and professional ethics
- industry awards and conditions
- employer's expectations
- sources of information for industry
- labour laws of Jamaica
- basic contract law
- enterprise's established policies and procedures
- impact of technology on industry
- obligation of employers to employees
- obligation of employees to employer
- enterprise policy in relation to greeting and assisting clients and customers
- location of enterprise layout and resources
- communication technology and systems used by the enterprise
- questioning and listening techniques
- effective interpersonal skills
- verbal and non-verbal communication skills

Skills

The ability to:

- understand and comply with employment conditions
- apply trade and professional ethics
- meet workplace employment requirements
- use appropriate communication strategies and techniques
- identify faults and abnormalities in the workplace
- reports faults and abnormalities in the workplace
- complete assigned tasks
- observe and record in the workplace
- interact with others in the workplace
- work in a team
- meet, greet and direct clients and customers
- maintain personal presentation
- apply basic contract law

- communication strategies and techniques
- system-related problems and human-related problems
- calculate wages including statutory deductions

(4) Resource Implications

The following resources should be made available:

- Job description and/or employment contract
- Enterprises policies and procedures

(4) Method of Assessment

Evidence may be gained in a variety of ways including:

- observation
- oral questioning/written test
- supporting statement from supervisor/manager

(5) Context of Assessment

This unit must be assessed through practical demonstration on-the-job or in a simulated workplace agricultural environment.

The underpinning knowledge may be assessed off-the-job with the use of written or verbal items

BCBSBM0012A

Craft Personal Entrepreneurial Strategy

Competency Descriptor:

This unit deals with the skills and knowledge required to craft an entrepreneurial strategy that fits with entrepreneur’s attitudes, behaviours, management competencies and experience necessary to meet the requirements and demands of a specific opportunity.

Competency Field: Small Business Operations

Elements of Competency	Performance Criteria
1. Demonstrate knowledge of the nature of entrepreneurship	1.1 Concepts associated with entrepreneurship are clearly defined. 1.2 Factors which influence entrepreneurship in and outside of Jamaica are correctly identified and explained. 1.3 The importance of entrepreneurship to economic development and employment explained clearly. 1.4 The findings of research conducted on entrepreneurial ventures and successes in Jamaica are clearly presented in an appropriate format. 1.5 Differences between wage employment and entrepreneurial ventures are correctly stated.
2. Identify and assess entrepreneurial characteristics	2.1 Relevant researched carried out and required entrepreneurial characteristics identified. 2.2 Entrepreneurial characteristics identified are assessed and ranked. 2.3 An understanding of the process and discipline that puts an individual in charge of evaluating and shaping choices and initiating action that makes sense is correctly demonstrated. 2.4 Factors which will help an entrepreneur to manage the risk and uncertainties of the future while maintaining a future orientated frame of mind are identified.
3. Develop self-assessment profile	3.1 Self-assessment tools/methods to identify personal entrepreneurial potential are identified and properly used. 3.2 The ability to apply creativity and problem-solving techniques and principles to solve business related problems is demonstrated. 3.3 Feedback from others for becoming aware of blind spots/reinforcing or changing existing perceptions of both strengths and weaknesses is appropriately obtained.
4. Craft an entrepreneurial strategy	4.1 A profile of the past which includes accomplishments and preferences in terms of life and work styles, coupled with a look into the future and an identification of what one would like to be doing is developed.

- 4.2 The level of commitment, determination and perseverance; orientation towards goals; taking initiative and accepting personal responsibility; recognizing management competencies and identifying areas for development is determined.
- 4.3 Guidelines to obtain feedback which is solicited, honest, straightforward, and helpful but not all positive or negative and in writing to facilitate reviews are developed.
- 4.4 Framework and process for setting goals, which demand time, self-discipline, commitment, dedication and practice are developed.
- 4.5 Distinct steps which are involved in the goal setting process are included.
- 4.6 Goals established are specific and concrete, measurable, relate to time, realistic and attainable.
- 4.7 Priorities, including identifying conflicts and trade-offs and how these may be resolved are established.
- 4.8 Potential problems and obstacles that could prevent goals from being attained are identified.
- 4.9 Specified action steps that are to be performed in order to accomplish goals are identified.
- 4.10 The method by which results will be measured is indicated.
- 4.11 Milestones for reviewing progress and tying these to specific dates on a calendar are established.
- 4.12 Risks in meeting goals are identified
- 4.13 Sources of help to obtain resources are identified.
- 4.14 Evidence of the ability to review process and periodically revise goals is demonstrated.

Range Statement

At this stage of the entrepreneurial process the entrepreneur must be able to conduct a self-assessment profile, examine the frame work for self-assessment and develop a personal entrepreneurial strategy, identify data to be collected in the self-assessment process and learn about receiving feedback and setting goals.

Concept associated to include:

- risk
- entrepreneur
- macro-screening
- micro-screening
- competition
- wage employment

Influencing factors to include:

- market conditions
- markets – demand/supply
- global trends
- level of economic activities
- funding
- economic stability
- social stability
- resources availability

The entrepreneur must be able to:

- understand the extreme complexity in predicting or aligning themselves to specific careers in an environment of constant change
- determine the kind of entrepreneur he or she wants to become based on attitudes, behaviours, competencies, experience and how these fit with the requirements and demands for a specific opportunity
- evaluate thoroughly his or her attraction to entrepreneurship
- effectively develop personal plan
- utilize available information that will enhance his or her ability to achieve success

The entrepreneur may encounter setbacks if planning process is not effectively pursued. Pitfalls may include:

- proceeding without effective planning may result in commitment to uncertainty
- commitment to a premature path with the desirability of flexibility can lead to disaster
- personal plans fail for the same reasons as business plans including frustration if the plan appears not to be working immediately and problems of changing behaviour from an activity-oriented routine to one that is goal oriented developing plans that fail to anticipate
- obstacles, and those that lack progress milestones and reviews

Evidence Guide

Competency is to be demonstrated when the entrepreneur is able to critically undertake a personal entrepreneurial assessment exercise to determine if he or she possesses the necessary credentials to be a successful entrepreneur. This stage of the entrepreneurial process is extremely critical since experience has shown that the founder is one of the critical forces if the venture is to succeed and prosper.

(1) Critical Aspects of Evidence

The entrepreneur will be assessed by his/her action in developing an orchestrated plan in order to effectively pursuing the business concept

(2) Pre-requisite Relationship of Units

The entrepreneur is required to develop an understanding of the requirements to achieve success as an entrepreneur.

Unit Code Understanding the Entrepreneurial Process

(3) Underpinning Knowledge and Skills

Knowledge

Knowledge of:

- Personal entrepreneurial profile systems
- Effective management systems: marketing; operations/productions; finance; administration; law
- Measuring feedback
- Developing a personal plan
- Developing a business plan
- Understanding of the difference between entrepreneurial culture and the management culture

Skills

The ability to:

- Determine barriers to entrepreneurship
- Minimize exposure to risk for being an entrepreneur
- Exploit any available resource pool
- Tailor reward systems to meet a particular situation
- Effectively plan and execute activities
- Use computer technology to undertake assessment

Resource Implications

The following resources should be made available:

- Personal computer with the internet and appropriate software that will enable him/her to conduct the necessary analysis with access to the internet

(4) Method of Assessment

A useful method of assessment is to determine if the venture can stand up to the test of critical evaluation.

(5) Context of Assessment

This stage of the entrepreneurial process is assessed when comparisons are made between actual outcomes with plans and projections