



THE REPUBLIC OF UGANDA
Ministry of Education and Sports

Directorate of Industrial Training



**Assessment and Training
Package
For a
FLORICULTURIST**

Qualification Level: 1

Occupational Cluster: Agriculture

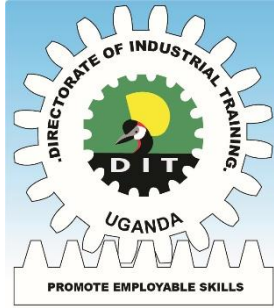
December 2020

Reviewed by:

**Qualifications Standards Department
Directorate of Industrial Training**

Funded by:

Government of Uganda



Assessment and Training Package
For a
FLORICULTURIST

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Directorate of Industrial Training

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Under BTVET Act, 2008, the functions of the Directorate of Industrial Training are:

- (a) To identify the needs of the labour market for occupational competencies that fall under the UVQF.
- (b) To regulate apprenticeship schemes.
- (c) To foster and promote entrepreneurial values and skills, as an integral part of the UVQF.
- (d) To secure adequate and sustainable financing for the efficient operations of the Directorate.
- (e) To accredit training institutions or companies as assessment centres.
- (f) To determine fees payable under the Act.
- (g) To develop, apply, expand and improve the purposeful application of Uganda vocational qualifications defined in the UVQF.
- (h) To assess and award Uganda Vocational Qualifications.
- (i) To promote on-the-job training in industry for apprenticeship, traineeship and indenture training and for other training such as further skills training and upgrading.
- (j) To prescribe the procedure for the making of training schemes.

Further to the above provisions, there is an established Uganda Vocational Qualifications Framework (UVQF), under part V of the BTVET Act, 2008. It is stated that:

The purpose of the UVQF is to;

- (a) Define occupational standards in the world of work.
- (b) Define assessment standards.
- (c) Award vocational qualifications of learners who meet the set standards of different studies.
- (d) Provide guidelines for modular training.

The UVQF shall follow principles of Competence Based Education and Training (CBET) which include:

- (a) Flexible training or learning modules.
- (b) Positive assessment and Certification.
- (c) Assessment of Prior Learning.
- (d) Recognition of formal and non-formal training.
- (e) Self-paced or individual learning.
- (f) Work place learning.

For award and recognition of certificates, the BTVET Act, 2008 provides that:

- (1) The Directorate and other examination boards established under the Act shall award certificates and diplomas for Business, Technical or Vocational Education and Training under the UVQF.
- (2) The Certificates and Diplomas to be awarded shall be in the form prescribed by the Minister on the recommendation of the Industrial Training Council.
- (3) The Certificates and Diplomas awarded under the Act shall be recognised in the Uganda education system and by the labour market.

Under the TVET Implementation Standards 2020, the proposed new mandate of the Directorate of Industrial Training shall be restricted to promoting the highest standards in the quality and efficiency of industrial training in the country and ensuring an adequate supply of properly trained manpower at all levels in the industry and the world of work.

The functions shall include:

- (a) Regulating Industrial Training and Trainers.
- (b) Developing Industrial Training Curricula.
- (c) Harmonising Curricula and Certificates of competence.
- (d) Assessing Industrial Training.
- (e) Development of Occupational Standards and Assessment and Training Packages (ATPs) for Trade Testing for the industry and world of work.
- (f) Awarding certificates in that respect.

At operational level in the Directorate, the Qualification Standards Department performs development tasks related to concepts, procedures and instruments for establishment of the UVQF in close collaboration with both public and private stakeholders in vocational training.

In particular, the Department organises and coordinates the development of Assessment and Training Packages for use in competence-based vocational training as well as standards-based assessment and certification.

The Directorate has therefore produced this Assessment and Training Package for use in implementing Competence-Based Education and Training mechanisms.

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Word from Permanent Secretary

The Kajubi Report (1989) and the Uganda Government White Paper on Education Review (1992) emphasised that the Uganda Secondary School Education should be vocationalised.

The World Bank Report on education in Uganda 2007 observed that although Uganda was experiencing steady economic growth on one hand, the secondary education curriculum was inadequately addressing the social and economic needs of the country on the other. The Report further noted that it is not the very top academic cadres that contribute most to the growth of the GDP but rather the competent middle level technicians that are flexible and technologically literate that the economy needs in the labour market at all levels.

Correspondingly, the NDP III 2020/21- 2024/5 highlights (i) low labour productivity (ii) high youth unemployment (38%) (iii) low transition rates from training to employment (35%) as some of the key challenges to Human Capital Development in Uganda.

In order to overcome these challenges, NDP III 2020/21- 2024/5, under objective 2 peaks the need to train the learners for the urgently needed skills and mainstream a dual education and training system. This paved way for the development of the lower secondary school vocational curriculum which supports both academic and vocational training.

The afore is in line with the Uganda Vision 2040. Under section 261, it emphasises that learners will be accorded opportunities to excel in the skills areas they are placed into. These will range from sports and cut to technical and vocational training. Hitherto, section 262 clearly states that the entire education system will be changed to emphasise practical skills, attitude and moral values.

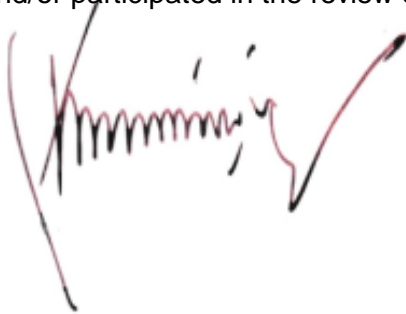
Government of Uganda through the Ministry of Education and Sports rolled out the New Lower Secondary Curriculum in secondary schools countrywide during the first term of the academic year 2020. The overall goal of this curriculum is to produce graduates with employable skills and who are competitive in the labour market. It should be emphasised that vocational training will produce graduates who are employable. In the New curriculum, emphasis will be on equipping learners with employable skills and competencies. This will enable learners perform the requisite duties of the specified occupations. This is the reason why the lower secondary school vocational curriculum was tailored to the assessment requirements of the world of work.

Reading from the Curriculum Framework page 12, it is stated that the learners will be assessed by DIT. Upon assessment and certification, the graduates will be employable and competitive in the labour market. It's against this background that DIT, within its mandate vested in the BTVET Act, 2008 comes on board to take the lead in the development of the requisite Assessment and Training Packages (ATPs) for the various occupations that will be assessed under the Lower Secondary Curriculum.

The ATPs can be used by any training provider and/or those who wish to present themselves for Occupational Assessment and Certification.

Herewith, the Directorate of Industrial Training presents the Assessment and Training Package for training, assessment and certification of a **FLORICULTURIST QUALIFICATION LEVEL 1**.

Finally, I thank all individuals, organisations and review partners who have contributed and/or participated in the review of this noble document.



Alex Kakooza
Permanent secretary

Executive Summary

This Assessment and Training Package is a Competence-Based Education and Training (CBET) tool and consists of three major parts:

- 0.1 **PART I: The Occupational Profile (OP) of a FLORICULTURIST.** This Occupational Profile which was reviewed by Floriculturists practicing in the world of work mirrors the duties and tasks that Floriculturists are expected to perform.
- 0.2 **PART II: Training Modules** in the form of guidelines to train Floriculturists both on the job as well as in training centres (or combinations of both venues of learning). The Training Modules herein have been reviewed basing on the Occupational Profile and hence are directly relevant for employment.
- 0.3 **PART III: Assessment Instruments** in the form of performance (Practical) and written (theory) test items that can and should be used to assess whether a person complies with the requirements of employment as a FLORICULTURIST. These assessment instruments were reviewed jointly by job practitioners (floriculturists) and instructors based on the occupational profile and training modules.
- 0.4 While the Occupational Profile (OP) contained in PART I of this document provides the information on **WHAT a person is expected to do** competently in the world of work, the test items, - including performance criteria- of PART III qualify the **HOW and/or HOW WELL a person must do the job.**
- 0.5 The modular format of the curriculum (PART II) allows learners to acquire job specific skills and knowledge (i.e. competencies) module by module. A single module can be accomplished within a relatively short duration allowing flexibility for learners to move directly into an entry level job, go for further modules or advance to higher levels of training. Modular courses allow more learners to access the training system because training centres as well as companies can accommodate more learners in a given period of time.
- 0.6 In addition to improved access, equity and relevance of BTVET, the UVQF will also enable people who are convinced to have acquired competencies laid down in this ATP through prior training and on-the-job experience to access assessment and certification directly; be it on the basis of a single module, a group of modules or all modules pertaining to the occupation at once. This achievement will facilitate Recognition of Prior Learning (RPL).

0.7 The parts of this Assessment and Training Package were sequentially reviewed as follows:

- i Part 1: Occupational Profile: **August 2020**
- ii Part 2: Training Modules: **August 2020**
- iii Part 3: Assessment Instruments (initial bank): **August 2020**

This ATP (or parts of it) may be periodically revised to match the dynamic trends in the occupation and hence issued in different versions.

DIT takes responsibility of any shortcomings that might be identified in this publication and welcomes suggestions for effectively addressing the inadequacies. The suggestion can be communicated to DIT through P.O. Box 20050, Kampala or through email uvaf.dit@gmail.com.



Patrick Byakatonda
Ag Director

Acknowledgement

The Qualifications Standards Department of DIT acknowledges the valuable contributions to the review of this Assessment and Training Package by the following persons, Institutions and organisations:

- Members of the DIT Industrial Training Council.
- The Director and staff of DIT.
- Ministry of Education and Sports.
- The practitioners from the world of work.
- Teachers and instructors of rabbit farming from various secondary schools.
- Agriculture Curriculum Specialists from NCDC.
- Examination specialists from UNEB.
- The facilitators involved in guiding the development panels in their activities.
- The Government of Uganda for financing the development of this ATP.

Abbreviations and Acronyms

A&C	Assessment and Certification
ATP	Assessment and Training Packages
CBET	Competency Based Education and Training
DIT	Directorate of Industrial Training
ITC	Industrial Training Council
GoU	Government of Uganda
LWA	Learning-Working Assignment
MC	Modular Curriculum
MoES	Ministry of Education and Sports
OP	Occupational Profile
PEX	Practical Exercise
PTI	Performance (Practical) Test Item
QS	Qualification Standards
RPL	Recognition of Prior Learning
TIB	Test Item Bank
TVET	Technical, Vocational, Education and Training
UVQ	Uganda Vocational Qualification
UVQF	Uganda Vocational Qualifications Framework
WTI	Written (Theory) Test Items

Key Definitions

Assessment	Assessment is the means by which evidence is gathered and judged to decide if an individual has met the stipulated assessment standards or not. Testing is a form of formal assessment.
Certification	Certification is a formal procedure to issue a certificate (qualification) to an individual that has demonstrated during formal assessment that he/she is competent to perform the tasks specified in the occupational profile.
Competence	Integration of skills, knowledge, attitudes, attributes and expertise in doing /performing tasks in the world of work to a set standard.
Competency	(Occupational) competence is understood as the ability to perform tasks common to an occupation at an acceptable level.
CBET	Competence-Based Education and Training means that programs: <ol style="list-style-type: none">1. have content directly related to work2. focus is on 'doing something well'3. assessment is based upon industry work standards, and4. curricula are developed in modular form
Duty	A Duty describes a large area of work in performance terms. A duty serves as a title for a cluster of related Tasks (see also: TASK).
Learning-Working Assignment (LWA)	LWA are simulated or real job situations / assignments that are suitable for learning in a training environment (e.g. "small projects"). In a working environment LWAs are real work situations /assignments.
Modules	Modules are part(s) of a curriculum. Modules can be considered as "self-contained" partial qualifications which are described by learning outcomes or competencies and which can be assessed and certified individually.
Occupational Profile (OP)	<p>An Occupational Profile is an overview of the duties and tasks a job incumbent is expected to perform competently in employment.</p> <p>Occupational Profiles developed by practitioners from the world of work enhance the relevance of training and learning to the requirements of the world of work.</p>

Occupational Profiles define what a person is supposed to do in performance terms. It also contains generic information regarding related knowledge and skills, attitudes/behavior, tools, materials and equipment required to perform as well as trends/ concerns in the occupation.

Occupational profiles are the reference points for developing modular curricular and assessment standards.

Qualification A qualification is a formal recognition for demonstrating competence, based on formal assessment against set standards. A qualification is provided to the individual in form of a certificate specifying the nature of the competence.

Task Job tasks represent the smallest unit of job activities with a meaningful outcome. Tasks result in a product, service, or decision. They represent an assignable unit of work and have a definite beginning and ending point. Tasks can be observed and measured.
(Also see: *Duty*)

1.0 ATP PART I

Occupational Profile for a Floriculturist

- 1.1 The OCCUPATIONAL PROFILE for a “Floriculturist” below defines the **Duties** and **Tasks** a competent Floriculturist is expected to perform in the world of work (on the job) in Uganda and the East African region today.
- 1.2 Since it reflects the skill requirements of work life, the Occupational Profile is the reference document for the subsequent development of training modules and assessment instruments (test items) which are directly relevant to employment in Ugandan and other East African businesses and industries.
- 1.3 To ensure that Occupational Profile is relevant for employment in Uganda and East Africa, DIT used the method of “occupational/job profiling.

This approach involves the brain storming of a panel of 8 to 12 competent job practitioners guided by a trained and experienced facilitator. During a two-day workshop, the panelists defined the duties and tasks performed in employment, as well as the prerequisite skills, knowledge, attitudes, tools and equipment, and the trends and concerns in the occupation/job.

- 1.4 The panelists, facilitators and coordinators who participated in developing this Occupational Profile are listed on the following page.

¹ The DACUM-method was used. DACUM is an acronym for ‘Develop A Curriculum’

Job Expert Panel

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UEFA

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Manje Estates

Omulo Charles
JP Cuttings

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Kebirungi Provia
Mbarara High School

Oryem Richard
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Funded by
Government of Uganda



THE REPUBLIC OF UGANDA
Ministry of Education and Sports

Directorate of Industrial Training

Occupational Profile

For a

"FLORICULTURIST"

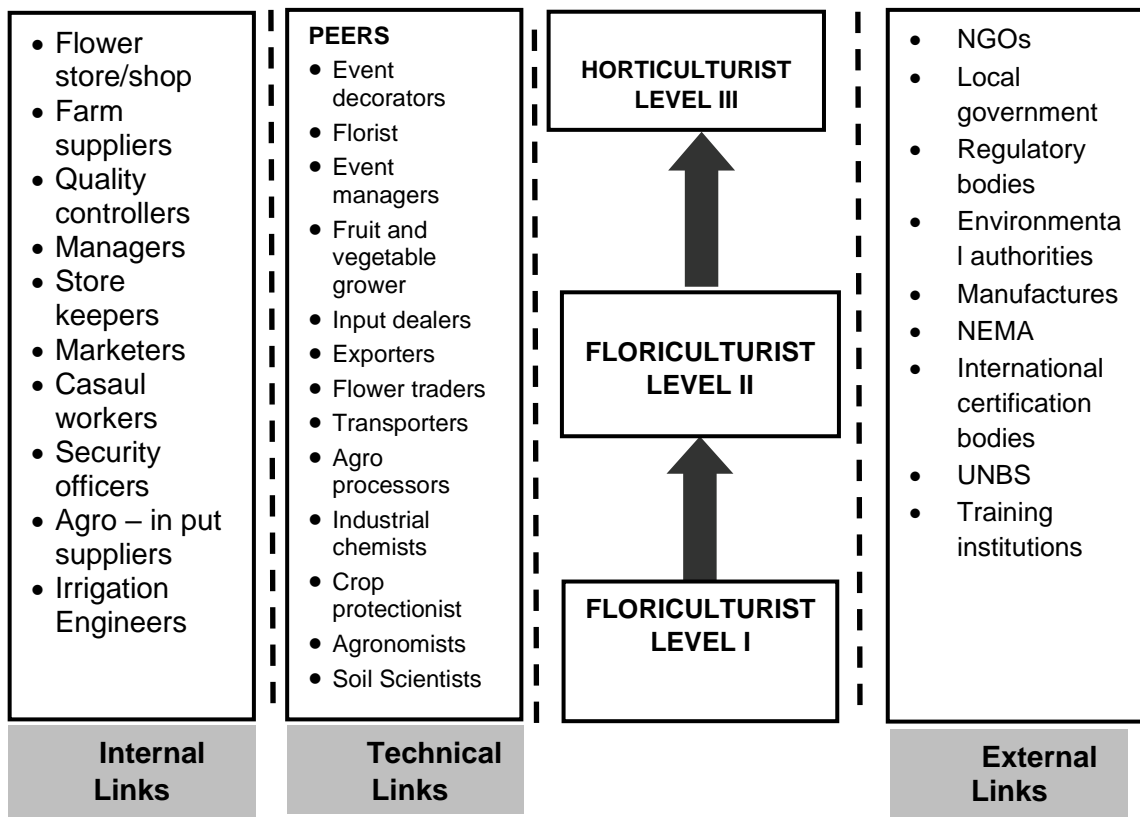
Reviewed by: Qualifications Standards
Department of Industrial Training

Dates of workshop: 10th -14thAugust2020

NOMENCLATURE FOR THE OCCUPATION OF A FLORICULTURIST

A **Floriculturist** is a person who produces and designs flowers for beauty, nature conservation and commercial purpose.

JOB ORGANISATION CHART FOR A FLORICULTURIST



Descriptions for the levels in the occupation of 'Floriculturist'

UVQ Level I Floriculturist: Is a person who establishes and manages a flower garden using basic agronomic practices for commercial purposes.

UVQ Level II Floriculturist: Is a person who grows diverse floral species using improved agronomic practices.

UVQ Level III Horticulturist: Is a person who grows fruits, vegetables and flowers for commercial purposes.

Duties and Tasks

A. PLAN FLORICULTURAL FARMING ENTREPRISE	A1	Carry out feasibility study	A2	Determine factor inputs	A3	Determine floral varieties and types
	A4	Determine site structural plan	A5	Prepare work Schedules	A6	Determine farm location
	A7	Carry out environment impact assessment	A8	Determine production methods	A9	Determine water sources
	A10	Prepare procurement plan for inputs	A11	Determine market and business partners	A12	Prepare financial plan

B. ESTABLISH HORTICULTURE NURSERY BED	B1	Select site	B2	Clear land	B3	Secure propagation area
	B4	Till land	B5	Sterilise soil	B6	Prepare growth media
	B7	Pot media	B8	Prepare seeds and other planting materials	B9	Prepare propagation materials
	B10	Pot vegetative propagation materials	B11	Pot seeds	B12	Pot seedlings
	B13	Prepare tissue culture plantlets	B14	Erect nursery shade	B15	Water seedlings
	B16	Control pests and diseases	B17	Perform peering	B18	Prick out seedlings
	B19	Prune seedling roots	B20	Perform Mulching	B21	Harden Seedlings
	B22	Set up beds and tables	B23	Grafting Planting materials	B24	Conduct trials
	B25	Propagate clones				

B. ESTABLISH HORTICULTURE GARDEN	C1 Level Soil	C2 Establish farm layout	C3 Erect farm structures
	C4 Set up soil and water conservation structures	C5 Transplant Seedlings	C6 Construct drainage structures
	C7 Apply fertilisers	C8 Construct irrigation structures	C9 Conduct medium analysis

C. MANAGE HORTICULTURE GARDEN	D1 Fill gaps	D2 Thin seedlings	D3 Control weeds
	D4 Train plants	D5 Prune flowers and ornaments	D6 Earth up plants
	D7 Pinch Plants	D8 Bend plants	D9 De-sucker plants
	D10 Irrigate garden	D11 Stake plants	D12 Apply growth boosters
	D13 Maintain Structures	D14 Scout garden	D15 Regulate growth conditions
	D16 Monitor growth		

E. PERFORM HARVEST OF HORTICULTURE PRODUCE	E1 Clean tools and equipment	E2 Disinfect tools and equipment	E3 Select mature produce
	E4 Harvest Produce	E5 Bulk Produce	E6 Pre-cool Harvest
	E7 Keep traceability records		

F. PERFORM POST HARVEST HANDLING ACTIVITIES	F1 Prepare post harvesting tools and equipment	F2 Prepare storage facilities	F3 Preserve produce
	F4 Transport Produce	F5 Cool produce	F6 Perform sorting
	F7 Perform grading	F8 Bunch produce	F9 Pack produce
	F10 Store produce		

G. PERFORM FLORAL AND ORNAMENTAL ARRANGEMENT	G1 Prepare designs	G2 Unpack flowers and associated products	G3 Sort flowers and associated products
	G4 Select flowers and foliage	G5 Prepare holding facility	G6 Trim flowers and foliage
	G7 Assemble selection	G8 Secure assembly	G9 Preserve flowers and other products
	G10 Accessorise assembly	G11 Wrap arrangement	G12 Document customer specifications

H. MARKET HORTICULTURE PRODUCE	H1 Package produce	H2 Label produce	H3 Brand produce
	H4 Price produce	H5 Display produce	H6 Exhibit Produce
	H7 Dispatch produce	H8 Advertise produce	H9 Sell Produce
	H10 Provide customer services	H11 Comply with market standards	

I. PERFORM OCCUPATIONAL HEALTH, SAFETY AND ENVIRONMENTAL PROTECTION PRACTICES	I1 Administer first aid	I2 Manage waste	I3 Perform firefighting
	I4 Display safety signs	I5 Sensitise workers health safety and environmental practices	I6 Comply with regulation and policies
	I7 Maintain personal hygiene and sanitation	I8 Use of personnel protective equipment	I8 Observe HACCP

J. PERFORM ADMINISTRATIVE TASKS	J1 Keep business Records	J2 Supervise Works	J3 Appraise workers
	J4 Recruit workers	J4 Conduct Meetings	J6 Manage Finances
	J7 Pay Bills	J8 Formalise business	J9 Network with Stake holders
	J10 Provide Security	J11 Manage tools and equipment	J12 Train workers
	J13 Prepare reports	J14 Perform guidance and counselling	J15 Motivate workers
	J16 Perform procurement	J17 Pursue Continuous Professional Development	J18 Communicate with clients
	J19 Mentor workers		

Additional Information

Generic knowledge & skills

1. Soil fertility
2. Site Selection
3. Water quality
4. Topography
5. Dimensions and measurements
6. Fertilisers types and Application
7. Sterilisation
8. Potting skills
9. Budding
10. Grafting
11. Scion collection
12. Staking
13. Harvesting Techniques
14. Transportation of produce and products
15. Finance literacy
16. Entrepreneurship skills
17. Interpersonal skills
18. Managerial skills
19. Analytical skills
20. Legal frame works
21. Waste management
22. Tools, equipment and material usage
23. First aid administration
24. Sterilising tools
25. Pruning
26. Sorting and grading
27. Clearing, drying and cooling horticulture products
28. Numeracy
29. Agro-chemicals and their applications
30. Planting methods
31. Transplanting
32. Weed control methods
33. Problem solving skills
34. Sustainable development goals
35. Marketing procedures and techniques
36. Procurement skills
37. Critical thinking
38. Innovation
39. Green house regulations and protocol
40. Health, safety and environmental protection practices
41. Propagation techniques
42. Nursery bed management
43. Irrigation techniques
44. Mulching
45. Administrative skills
46. Time management
47. Planning skills /organisational skills
48. Communication skills
49. Computer knowledge and skills
50. Organisational skills
51. Creativity

Tools, Materials and Equipment

- Hand hoes
- Spades
- Slashers
- Wheelbarrows
- Trowel
- Potting bags
- Rake
- Watering can
- Fabre net
- Secateurs
- Polythene sheet
- Poles (wooden and metallic)
- Hand saws
- Hummers
- Nails
- Fabre mats
- Gumboots
- Spikes (for labeling)
- Hand gloves
- Brochures
- Knapsack sprayer
- Personal protective
- Weighing scales
- Wash rooms
- Mother garden
- Masks
- Ploughs
- Books
- Pens
- Pipe
- PH/EC meter
- Axe
- Wires
- Ropes
- Dry grass
- Pegs
- Shades
- Iron sheets
- Chain/barbed wire
- Water tank
- Bricks
- Cement
- Timber
- Stones
- Sand
- Paint
- Saw dust
- Black soil
- Knife
- Forked hoes
- Jerry cans
- Pack house crates
- Jerry cans
- Pack house crates
- Thermometer
- Packaging materials
- Tractors
- Brush
- Sign posts
- Bill boards
- Drainage channels
- equipment
- First aid kits
- Water pumps
- Water pumps
- Yoke
- Chain
- Bulls
- Disc harrow
- Seedlings
- Field crates
- Sacks
- Planters
- Herbicides
- Pesticides
- Fertilizers
- Fungicides
- Ox-carts
- Bicycles
- Coolers
- Substrates
- Holding containers
- Trucks
- Stores
- Tape measures
- Hormones
- Syringes
- Pallets
- Sorting tables
- Markers
- Stationary
- Money
- Disposal pits
- Incinerator
- Soak pit
- Tumpline
- Notice board
- Detergents
- Plastics
- Mobile phones
- Computer
- Radio
- Television
- Inspection tool
- Inspection tools
- Quality assurance tools
- Post-harvest treatment chemicals
- Preservatives
- Magnifying glass
- Bucket
- Fumigants

Attitudes/Trait s/Behavior

- | | |
|---------------------------|-------------------------------|
| 1. Honest and transparent | 15. Disciplined |
| 2. Tolerant | 16. Enthusiastic |
| 3. Active | 17. Creative and innovative |
| 4. Hardworking | 18. Resourceful |
| 5. Punctual | 19. A good listener |
| 6. Realistic | 20. Result oriented |
| 7. Social | 21. Trainable |
| 8. Able to predict | 22. Strategic |
| 9. Organised | 23. Carries out SWOT analysis |
| 10. Respectful | 24. Empathetic |
| 11. Confident | 25. Fair |
| 12. Trustworthy | 26. Time manager |
| 13. Dedicated | 27. Self-driven |
| 14. Team player | 28. Result oriented |

Future Trends and Concerns

1. Expansion of market
2. Flower varieties improvements
3. Use of computers
4. Advanced technology
5. Exportation
6. Use of improved machines
7. Encouraging floriculture farmers to join the national association
8. Price fluctuation
9. Need for further training in floriculture farming
10. Need for stores e.g. cold rooms refrigerated trucks for floriculture products
11. Value addition
12. Environmental degradation
13. Unreliable rainfall
14. Climate change
15. Need to visit model farmers
16. Lack of capital
17. Taxes of horticulture produces need to be reduced
18. Need for specialist to give technical advice to farmers
19. Control of pests and diseases
20. Lack of formal curriculum on horticulture farming
21. Benchmarking international floriculturist to compare notes
22. Social practices

2.0 ATP-PART II

Training modules for a FLORICULTURIST

- 2.1 A curriculum is a “guide /plan for teaching and learning” which provides a guide to teachers, instructors and learners. In the envisaged system of competence-based or outcome-oriented education and training (CBET), Curricula are no longer the benchmark against which assessment is conducted. It is rather the Occupational Profile that provides the benchmark for Curriculum development as well as assessment.
- 2.2 This modular format of the curriculum allows learners of the occupation of Floriculturist to acquire job specific skills and knowledge (i.e. competencies) module by module. A single module can be accomplished within a relatively short duration allowing learners to move directly into an entry level job, do further modules and advance to higher levels of training. Modular courses allow more learners to access the training system because training centres, as well as companies can accommodate more learners in a given period of time.
- 2.3 The modules were developed jointly by both instructors and job practitioners. They were developed using the Occupational Profile as a reference point and taking into account the specifications of training and learning outcomes.
- 2.4 The modules contain “Learning-Working Assignments” (LWAs) and related “Practical Exercises” (PEXs) as key elements.

LWAs are simulated or real job situations/assignments that are suitable for learning in a training environment (e.g. “small projects”). In a working environment, LWAs are real work situations.

PEXs are therefore sub-sets of a LWA.

- 2.5 In principle, and following the philosophy of Competence-Based Education and Training (CBET), the modules can be used as a guide for learning in a training Centre, at the workplace; or a combination of both

WHO IS A FLORICULTURIST LEVEL 1?

A Floriculturist Level 1 Is a person who establishes and manages a flower garden using basic agronomic practices for commercial purposes.

TRAINING MODULES FOR A FLORICULTURIST LEVEL 1

Code	Module Title	Average duration	
		Contact hours	Weeks
UE/F/M 1.1	Establish a Flower and Ornamental Nursery bed	320	08
UE/F/M 1.2	Establish a Flower and Ornamental Garden	240	06
UE/F/M 1.3	Manage a Flower and Ornamental garden	240	06
UE/F/M 1.4	Perform Harvest and Post-Harvest Management of Flowers and Ornamental Plants	160	04
UE/F/M 1.5	Perform Floral and Ornamental Arrangement	160	04
UE/F/M1.6	Establish a Floricultural Enterprise	160	04
Summary	6 Training Modules	1280 hours	32 weeks

Note: Average duration is contact time but NOT calendar duration

It is assumed that:

- 1 day is equivalent to 8 hours of nominal learning and
- 1 month is equivalent to 160hours of nominal learning

Information given on the average duration of training should be understood as a guideline. Quick learners may need less time than indicated or vice versa.

At completion of a module, the learner should be able to satisfactorily perform the included learning working assignments, their practical exercises and attached theoretical instructions, as the minimum exposure.

Prior to summative assessment by recognised agencies, the users of these modules guides are encouraged to carefully consider continuous assessment using samples of (or similar) performance (practical) and written test items available in part 3 of this ATP.

Code	UE/F/M1.1
Module title	M.1/1 Establish a Flower and Ornamental Nursery Bed
Related Qualification	Part of Uganda Vocational Qualification (Floriculturist UVQ1)
Qualification Level	1
Module purpose	After completion of this module, the trainee shall be able to set up a floricultural propagation unit and conduct routine management activities to nurture floral and ornamental seedlings.
Learning-Working Assignments (LWAs)	<p>LWA 1/1: Prepare Site LWA 1/2: Construct Shade LWA 1/3: Prepare Media LWA 1/4: Prepare plant materials LWA 1/5: Manage Propagation Unit LWA 1/6: Perform Occupational Health, Safety and Environmental Protection Practices</p> <p>Note:</p> <ol style="list-style-type: none"> 1. The learning exercises may be repeated until the Trainee acquires targeted competence; 2. The trainer is advised to deliver relevant theoretical instruction with demonstrations as required to perform each learning working assignment.
Related Practical Exercises (PEXs)	<p>LWA 1/1: Prepare Site PEX 1.1: Prepare tools and equipment PEX 1.2: Clear site PEX 1.3: Level site PEX 1.4: Construct drainage channels PEX 1.5: Set up soil and water conservation structures</p> <hr/> <p>LWA 1/2: Construct Shade PEX 2.1: Make shed plan PEX 2.2: Prepare tools, equipment and materials PEX 2.3: Set out shade PEX 2.4: Dig holes PEX 2.5: Fix poles PEX 2.6: Screen off shed PEX 2.7: Fence site</p>

	<p>LWA 1/3: Prepare Media</p> <p>PEX 3.1: Disinfect propagation unit and equipment PEX 3.2: Assemble materials, tools and equipment PEX 3.3: Mix media and manure PEX 3.4: Treat medium PEX 3.5: Test medium PEX 3.6: Pot medium PEX 3.7: Mount beds</p>
	<p>LWA 1/4: Prepare and Plant Materials</p> <p>PEX 4.1: Sort planting materials PEX 4.2: Clean planting materials PEX 4.3: Grade materials PEX 4.4: Treat material PEX 4.5: Store materials PEX 4.6: Plant materials</p>
	<p>LWA 1/5: Manage Propagation Unit</p> <p>PEX 5.1: Water propagation unit PEX 5.2: Control temperature and humidity PEX 5.3: Weed propagation unit PEX 5.4: Fertilise propagation unit PEX 5.5: Mulch propagation unit PEX 5.6: Thin seedlings PEX 5.7: Pinch shoots PEX 5.8: Prick out seedlings PEX 5.9: Root prune seedlings PEX 5.10: Control pests and diseases PEX 5.11: Harden seedlings</p>
	<p>LWA 1/6: Perform Occupational Health, Safety and Environmental Protection Practices</p> <p>PEX 6.1: Conduct risk assessment PEX 6.2: Use personnel protective equipment PEX 6.3: Manage waste PEX 6.4: Administer first aid PEX 6.5: Perform firefighting PEX 6.6: Maintain personal hygiene and sanitation PEX 6.7: Sensitise workers on health issues PEX 6.8: Perform routine medical checkup PEX 6.9: Demarcate work stations</p>

	<p>PEX 6.10: Maintain equipment and tools PEX 6.11: Display safety signs PEX 6.12: Observe regulations and policies PEX 6.13: Observe HACCP</p>
Occupational health and safety	<p>Precautions, rules and regulations on occupational health, safety and environmental protection, included in the listed related knowledge should be observed and demonstrated during LWAs and PEXs</p>
Pre-requisite modules	<p>None</p>
Related knowledge/ theory	<p><i>For occupational theory suggested for instruction/ demonstration, the trainer is not limited to the outline below. In any case, related knowledge/ theory may be obtained from various recognized reference materials as appropriate:</i></p> <ul style="list-style-type: none"> • Tools and equipment usage and maintenance • Media types and media testing • Types of media and their usage • Weather patterns • Grafting • Budding • Growth booster application • Plant spacing • Watering techniques • Soil and water conservation management • Shed construction techniques • Soil preparation • Seedling care and maintenance • Unit conversion • Fertiliser types and application techniques • Types of planting materials for flowers and ornamentals • Nursery site selection • Types of nurseries • Plant spacing • Qualities of good planting materials • Pesticides • Occupational health, safety and environmental protection practices • Waste management • Communication skills • Time management • Tools and equipment maintenance • Growth media management

	<ul style="list-style-type: none"> • Construction of green house • Pests and disease management • Irrigation techniques • Propagation techniques
Average duration of learning	320 hours (40 days) of nominal learning suggested to include: <ul style="list-style-type: none"> • 10 days of occupational theory and • 30 days of occupational practice
Suggestions on organization of Learning	The acquisition of competencies (skills, knowledge, attitudes) described in this module may take place at a training Centre or its equivalent provided all equipment and materials required for training are in place.
Assessment	Assessment to be conducted according to established regulations by a recognised assessment body using related Practical and Written Test Items from Item bank.
Minimum required tools/ equipment/ implements or equivalent	panga, hoe, slasher, tape measure, hammer, spade, grafting knife, water pump, wheelbarrow, test tubes, hose tubes, gum boots, rakes, cold storage, sieve, oven, grading table, buckets, hand trowel, dibbles, secateurs, scissors, scrubbers, budding knives, pots/ containers, knapsack, spade, water source and irrigation system.
Minimum required materials and consumables or equivalent	sisal string, sand, loam soil, manure, firewood, water, rooting media, planting materials, agro-chemicals, grafting tape, gloves, overcoat, disinfectants, bags, nets/ palm leaves, pegs, cement, grafting wax, spirit, aggregates, hard core, root prunes, grafting thread, wires, barbed wire, polythene sheet, nails and poles.
Special notes	

Code	UE/F/M1.2
Module title	M1.2: Establish a Flower and Ornamental Garden
Related Qualification	<u>Part of</u> Uganda Vocational Qualification (Floriculturist UVQ1)
Qualification Level	1
Module purpose	After completion of this module, the trainee shall be able to set up a floricultural garden.
Learning-Working Assignments (LWAs)	<p>LWA 2/1: Prepare Site LWA 2/2: Prepare Seedbed LWA 2/3: Transport Planting Materials LWA 2/4: Plant materials LWA 2/5: Perform Occupational Health, Safety and Environmental Protection Practices</p> <p>Note:</p> <ol style="list-style-type: none"> 1. The learning exercises may be repeated until the Trainee acquires targeted competence; 2. The trainer is advised to deliver relevant theoretical instruction with demonstrations as required to perform each learning working assignment.
Related Practical Exercises(PEXs)	<p>LWA2/1: Prepare Site PEX 1.1: Clear land PEX 1.2: Set site PEX 1.3: Demarcate land PEX 1.4: Fence land PEX 1.5: Sample media PEX 1.6: Perform media analysis PEX 1.7: Setup soil and water conservation structures PEX 1.8: Construct drainage structures</p> <p>LWA 2/2: Prepare Seedbed PEX 2.1: Prepare equipment and tools PEX 2.2: Construct irrigation structures PEX 2.3: Till land PEX 2.4: Construct beds PEX 2.5: Treat soils PEX 2.6: Apply fertilisers</p>

	<p>LWA 2/3: Transport Planting Materials PEX 3.1: Pack planting materials PEX 3.2: Load planting materials PEX 3.3: Off load planting materials</p> <p>LWA 2/4: Plant Materials PEX 4.1: Carry out a germination test PEX 4.2: Mark field PEX 4.3: Dig holes and furrows PEX 4.4: Place planting materials PEX 4.5: Shade seedlings PEX 4.6: Irrigate seedlings</p> <p>LWA 2/5: Perform Occupational Health, Safety and Environmental Protection Practices PEX 5.1: Use personnel protective equipment PEX 5.2: Administer first aid PEX 5.3: Perform fire fighting PEX 5.4: Perform routine medical checkups PEX 5.5: Manage Waste PEX 5.6: Maintain personal hygiene and sanitation PEX 5.7: Sensitise workers on health issues PEX 5.8: Demarcate work stations PEX 5.9: Maintain equipment and tools PEX 5.10: Display safety signs PEX 5.11: Comply with regulations and policies PEX 5.12: Observe HACCP</p>
Occupational health and safety	Precautions, rules and regulations on occupational health, safety and environmental protection, included in the listed related knowledge should be observed and demonstrated during LWAs and PEXs
Pre-requisite modules	None
Related knowledge/ theory	<p><i>For occupational theory suggested for instruction/ demonstration, the trainer is not limited to the outline below. In any case, related knowledge/ theory may be obtained from various recognised reference materials as appropriate:</i></p> <ul style="list-style-type: none"> • Types of flowers and ornamental plants • Cultivation of various floral types and ornamental plants • Soil profile and soil testing

	<ul style="list-style-type: none"> • Weather patterns • Watering techniques • Techniques of maintaining soil moisture • Soil preparation • Plant care and maintenance • Dimension and measurements • Types of fertilisers and application • Types of planting materials for flowers and ornamentals • Garden site selection • Types of flowers and ornamental gardens • Plant spacing • Qualities of good planting materials • Pests and diseases control techniques • Agro-chemicals and their application • Planting materials preparation, planting methods • Soil erosion control techniques • Tools and equipment usage and storage • Environmental awareness • Personal safety and hygiene • Knowledge of health, safety policies, regulations and practices • Waste disposal and management • First aid administration • Numeracy and literacy
Average duration of learning	240 hours (30 days) of nominal learning suggested to include: <ul style="list-style-type: none"> • <i>05 days of occupational theory and</i> • <i>25 days of occupational practice</i>
Suggestions on organization of Learning	The acquisition of competencies (skills, knowledge, attitudes) described in this module may take place at a training centre or its equivalent provided all equipment and materials required for training are in place.
Assessment	Assessment to be conducted according to established regulations by a recognised assessment body using related practical and written test items from item bank.
Minimum required tools/equipment/ implements or equivalent	panga, hoe, slasher, tape measure, hammer, spade, grafting knife, water pump, wheelbarrow, test tubes, hose tubes, gum boots, rakes, cold storage, sieve, oven, grading table, buckets, scissors, scrubbers, pots, containers, knapsack sprayer, spade, water source, hand

	trowel, secateurs, dibbles, shovel, irrigation system, poles, overall, first aid kit,
Minimum required materials and consumables or equivalent	Loam soil, manure, water, planting materials (seedlings and seeds), agro chemicals, fertilisers, gloves, overcoat, disinfectants, bags, nets/ palm leaves, cement, spirit, aggregates, hard core, root prunes, barbed wire, polythene sheet, nails, poles, strings, growth media.
Special notes	

Code	UE/F/M1.3
Module title	M1.3: Manage a Flower and Ornamental Garden
Related Qualification	Part of Uganda Vocational Qualification (Floriculturist UVQ1)
Qualification Level	1
Module purpose	After completion of this module, the trainee shall be able to care for a floricultural garden.
Learning-Working Assignments (LWAs)	<p>LWA 3/1: Feed Plants LWA 3/2: Control Pests and Diseases LWA 3/3: Control Weeds LWA 3/4: Train Plants LWA 3/5: Conserve Water and Soil LWA 3/6: Perform Occupational Health, Safety and Environmental Protection Practices</p> <p>Note:</p> <ol style="list-style-type: none"> 3. The learning exercises may be repeated until the trainee acquires targeted competence; 4. The trainer is advised to deliver relevant theoretical instruction with demonstrations as required to perform each learning working assignment.
Related Practical Exercises(PEXs)	<p>LWA 3/1: Feed plants PEX 1.1: Prepare irrigation plan/ layout PEX 1.2: Construct irrigation structures PEX 1.3: Prepare feeding regime PEX 1.4: Check for nutrient deficiency PEX 1.5: Apply fertilisers PEX 1.6: Measure electrical conductivity PEX 1.7: Measure pH PEX 1.8: Apply water</p> <p>LWA 3/2: Control Pests and Diseases PEX 2.1: Scout pests and diseases PEX 2.2: Plant repellent plants PEX 2.3: Prepare spray tools and equipment PEX 2.4: Prepare pesticides PEX 2.5: Apply pesticides PEX 2.6: Trap pests</p>

	<p>LWA 2/3: Control Weeds PEX 3.1: Hoe weeds PEX 3.2: Hand uproot weeds PEX 3.3: Mulch garden PEX 3.4: Perform weed matting PEX 3.5: Spray weeds PEX 3.6: Thin seedlings</p> <p>LWA 2/4: Train Plants PEX 4.1: Prune plants PEX 4.2: Stake plants PEX 4.3: Bend branches/ plants PEX 4.4: Pinch plants PEX 4.5: Remove water shoots PEX 4.6: Earth up plants PEX 4.7: De-sucker plants</p> <p>LWA 2/5: Conserve Water and Soil PEX 5.1: Construct trenches and intercepting ditches PEX 5.2: Construct bands PEX 5.3: Construct terraces PEX 5.4: Construct basins PEX 5.5: Construct wash stops PEX 5.6: Harvest rain water PEX 5.7: Construct water reservoirs PEX 5.8: Maintain floricultural garden structures</p> <p>LWA 2/6: Perform Occupational Health, Safety and Environmental Protection Practices PEX 6.1: Use personnel protective equipment PEX 6.2: Administer first aid PEX 6.3: Perform firefighting PEX 6.4: Perform routine medical checkups PEX 6.5: Manage waste PEX 6.6: Maintain personal hygiene and sanitation PEX 6.7: Sensitise workers on health issues PEX 6.8: Demarcate work stations PEX 6.9: Maintain equipment and tools PEX 6.10: Display safety signs PEX 6.11: Comply with regulations and policies PEX 6.12: Observe HACCP</p>
Occupational health and safety	Precautions, rules and regulations on occupational health, safety and environmental protection, included in the listed related knowledge should be observed and demonstrated during LWAs and PEXs

Pre-requisite modules	None
Related knowledge/ theory	<p>For occupational theory suggested for instruction/ demonstration, the trainer is not limited to the outline below. In any case, related knowledge/ theory may be obtained from various recognized reference materials as appropriate:</p> <ul style="list-style-type: none"> • Tools equipment and material • Plant nutrition • Soil and water conservation • Soil health maintenance • Weather patterns • Irrigation techniques • Plant care and maintenance • Dimension and measurements • Fertilizers types and their application • Pests and diseases control techniques • Agro-chemicals and their application • Sensitization on environmental issues • Personal safety and hygiene • Occupational health, safety and environmental protection practices • Waste management • First aid administration • Numeracy and literacy • Training and staking of plants • ICT skills • Irrigation techniques • Bio-security
Average duration of learning	<p>240 hours (30 days) of nominal learning suggested to include:</p> <ul style="list-style-type: none"> • 05 days of occupational theory and • 25 days of occupational practice
Suggestions on organization of Learning	<p>The acquisition of competencies (skills, knowledge, attitudes) described in this module may take place at a training centre or its equivalent provided all equipment and materials required for training are in place.</p>
Assessment	<p>Assessment to be conducted according to established regulations by a recognised assessment body using related Practical and Written Test Items from Item bank.</p>

Minimum required tools/equipment/ implements or equivalent	panga, hoe, slasher, tape measure, hammer, spade, grafting knife, water pump, wheelbarrow, test tubes, hose tubes, gum boots, rakes, sieve, buckets, scissors, scrubbers, pots, containers, knapsack sprayer, spade, water source, hand trowel, secateurs, dibbles, shovel, irrigation system, poles, overall, first aid kit,
Minimum required materials and consumables or equivalent	Loam soil, manure, water, agro chemicals, fertilisers, gloves, overcoat, disinfectants, bags, nets/ palm leaves, cement, spirit, aggregates, hard core, barbed wire, polythene sheet, nails, poles, strings, growth media.
Special notes	Theory should be integrated into practice.

Code	UE/F/M1.4
Module title	M 1.4: Perform Harvest and Post-Harvest Management of Flowers and Ornamental Plants
Related Qualification	<u>Part of</u> Uganda Vocational Qualification (Floriculturist UVQ1)
Qualification Level	1
Module purpose	After completion of this module, the trainee shall be able to harvest and manage post-harvest activities of flowers and ornamental plants.
Learning-Working Assignments (LWAs)	<p>LWA 4/1: Prepare Harvest and Post-Harvest Tools and Equipment</p> <p>LWA 4/2: Perform Harvesting of Flowers and Ornamental Plants</p> <p>LWA 4/3: Perform Post-Harvest Handling Activities</p> <p>LWA 4/4: Perform Occupational Health, Safety and Environmental Protection Practices</p> <p>Note:</p> <ol style="list-style-type: none"> <i>The learning exercises may be repeated until the trainee acquires targeted competence;</i> <i>The trainer is advised to deliver relevant theoretical instruction with demonstrations as required to perform each learning working assignment.</i>
Related Practical Exercises (PEXs)	<p>LWA 4/1: Prepare Harvest and Post-Harvest Tools and Equipment</p> <p>PEX 1.1: Assemble tools, equipment and materials PEX 1.2: Clean tools and equipment PEX 1.3: Disinfect tools and equipment PEX 1.4: Service tools and equipment</p> <p>LWA 4/2: Perform Harvesting of Flowers and Ornamental Plants</p> <p>PEX 2.1: Cut flowers and ornamental plants PEX 2.2: Collect flowers and ornamental plants PEX 2.3: Moisturise stem ends PEX 2.4: Prepare traceability records</p> <p>LWA 4/3: Perform Post-Harvest Handling Activities</p> <p>PEX 3.1: Transport produce to the pack house PEX 3.2: Pre cool flowers and ornamental plants PEX 3.3: Carry out quality checks</p>

	<p>PEX 3.4: Perform sorting PEX 3.5: Perform grading PEX 3.6: Defoliate flowers and ornamental plants PEX 3.7: Bunch flowers and ornamental plants PEX 3.8: Treat flowers and ornamental plants PEX 3.9: Pack flowers and ornamental plants PEX 3.10: Dry flowers and ornamental plants PEX 3.11; Cool flowers and ornamental plants</p> <p>LWA 4/4: Perform Occupational Health, Safety and Environmental Protection Practices</p> <p>PEX 4.1: Carry out risk analysis PEX 4.2: Use PPE PEX 4.3: Administer first aid PEX 4.4: Manage waste PEX 4.5: Perform firefighting PEX 4.6: Undertake routine medical check- ups PEX 4.7: Maintain personal hygiene and sanitation practices PEX 4.8: Perform good agricultural practices PEX 4.9: Demarcate work stations PEX 4.10: Maintain equipment and tools PEX 4.11: Display safety precaution signs</p>
Occupational health and safety	Precautions, rules and regulations on occupational health, safety and environmental protection, included in the listed related knowledge should be observed and demonstrated during LWAs and PEXs
Pre-requisite modules	None
Related knowledge/ theory	<p>For occupational theory suggested for instruction/ demonstration, the trainer is not limited to the outline below. In any case, related knowledge/ theory may be obtained from various recognised reference materials as appropriate:</p> <ul style="list-style-type: none"> • Physiology of flowers • Quality control in floriculture • Quality attributes of fresh flowers • Harvesting techniques • Preservation techniques • Sanitation • Sorting and grading • Maturity indicators • Cold chain management • Health, safety and environmental precautions

	<ul style="list-style-type: none"> • Packaging procedures and rules • Tools and equipment usage and care • First aid administration
Average duration of learning	160 hours (20 days) of nominal learning suggested to include: <ul style="list-style-type: none"> • 5 days of occupational theory and • 15 days of occupational practice
Suggestions on organization of learning	The acquisition of competencies (skills, knowledge, attitudes) described in this module may take place at a training centre or its equivalent provided all equipment and materials required for training are in place.
Assessment	Assessment to be conducted according to established regulations by a recognised assessment body using related Practical and Written Test Items from Item bank.
Minimum required tools/ equipment/ implements or equivalent	buckets, harvesting knives, nose mask, sorting and grading tables, secateurs, defoliator, wheel barrows, bicycle, sharpening tools, ladders, pangas, grading shade, cold room, trimming machines, moving carts, buckets, drums, pair of scissors.
Minimum required materials and consumables or equivalent	water, box liners, wrapping boxes, nose masks, masking tape, polythene sheet, paper, rubber bands, stickers, boxes, disinfectants, overall, safety boots, bags, bulbs, preservatives.
Special notes	

Code	UE/F/M1.5
Module title	M 1.5: Perform Floral and Ornamental Arrangement
Related Qualification	Part of Uganda Vocational Qualification (Floriculturist UVQ1)
Qualification Level	1
Module purpose	After completion of this module, the trainee shall be able to make various floral designs and arrangements.
Learning-Working Assignments (LWAs)	<p>LWA 5/1: Prepare Design LWA 5/2: Prepare Materials LWA 5/3: Prepare Holding Facility LWA 5/4: Assemble Arrangement LWA 5/5: Assemble Wired Flowers and Plant Materials LWA 5/6: Make Wired Floristry Products LWA 5/7: Make Floristry Products Using a Base Medium LWA 5/8: Assemble Hand Tied Arrangements LWA 5/9: Perform Occupational Health, Safety and Environmental Protection Practices</p> <p>Note:</p> <ol style="list-style-type: none"> 1. The learning exercises may be repeated until the trainee acquires targeted competence; 2. The trainer is advised to deliver relevant theoretical instruction with demonstrations as required to perform each learning working assignment.
Related Practical Exercises (PEXs)	<p>LWA 5/1: Prepare Design PEX 1.1: Analyse site PEX 1.2: Develop theme PEX 1.3: Make sketches PEX 1.4: Make final drawings PEX 1.5: Indicate specifications</p> <p>LWA 5/2: Prepare Materials PEX 2.1: Interpret drawings and specifications PEX 2.2: Select flowers and other materials PEX 2.3: Un pack flowers and other materials PEX 2.4: Sort flowers and other materials PEX 2.5: Trim and treat flowers and other materials</p> <p>LWA 5/3: Prepare Holding Facility PEX 3.1: Select holding facility</p>

	<p>PEX 3.2: Clean holding facility PEX 3.3: Disinfect holding facility PEX 3.4: Prepare oasis</p>
	<p>LWA 5/4: Assemble Arrangement PEX 4.1: Prepare assembling area PEX 4.2: Assemble flowers PEX 4.3: Wire stalks PEX 4.4: Size the flowers PEX 4.5: Secure the assembly PEX 4.6: Wrap assembly PEX 4.7: Label assembly</p>
	<p>LWA 5/5: Assemble Wired Flowers and Plant Materials PEX 5.1: Prepare materials PEX 5.2: Prepare wiring media PEX 5.3: Wire materials PEX 5.4: Tape materials/ secure materials on the wire PEX 5.5: Assemble taped materials PEX 5.6: Accessorise the assembly PEX 5.7: Tag assembly</p>
	<p>LWA 5/6: Make Wired Floristry Products PEX 6.1: Make button hole PEX 6.2: Make corsage PEX 6.3: Make formal trail PEX 6.4: Make informal trail PEX 6.5: Make simple formal shower PEX 6.6: Make simple informal shower</p>
	<p>LWA 5/7: Make Floristry Products PEX 7.1: Make posy bowl PEX 7.2: Make posy box PEX 7.3: Make simple symmetrical line arrangement PEX 7.4: Make open spray arrangement PEX 7.5: Make asymmetrical arrangement PEX 7.6: Make formal linear arrangement</p>
	<p>LWA 5/8: Assemble Hand Tied Arrangements PEX 8.1: Select flowers and other materials PEX 8.2: Arrange flowers</p>

	<p>PEX 8.3: Trim flowers PEX 8.4: Wrap flowers PEX 8.5: Treat flowers PEX 8.6: Prepare tying materials PEX 8.7: Tie flower and other materials PEX 8.8: Accessorise the tie PEX 8.9: Store the tie</p> <p>LWA 5/9: Perform Occupational Health, Safety and Environmental Protection Practices</p> <p>PEX 9.1: Use PPE PEX 9.2: Administer First Aid PEX 9.3: Manage waste PEX 9.4: Perform firefighting PEX 9.5: Undertake routine medical check- ups PEX 9.5: Observe personal hygiene and sanitation PEX 9.6: Demarcate work stations PEX 9.7: Maintain equipment and tools PEX 9.8: Display safety precaution signs PEX 9.9: Observe HACCP</p>
Occupational health and safety	Precautions, rules and regulations on occupational health, safety and environmental protection, included in the listed related knowledge should be observed and demonstrated during LWAs and PEXs
Pre-requisite modules	None
Related knowledge/ theory	<p>For occupational theory suggested for instruction/ demonstration, the trainer is not limited to the outline below. In any case, related knowledge/ theory may be obtained from various recognised reference materials as appropriate:</p> <ul style="list-style-type: none"> • Stem analysis • Elements of floral design • Principles of floral design • Basic design mechanics • Materials usage and maintenance • Tools and equipment usage • Flower identification • Decoration designs • Health, safety and environmental precautions

	<ul style="list-style-type: none"> • Basket design and vase arrangement • Review of design elements • Tools and equipment usage and storage • Pricing of floristry products • Colour matching • Designing principles • Market trends • Material texture • Measurement skills
	<ul style="list-style-type: none"> • Drawing skills • Drawing interpretations • Recognition of flower and plant materials • Storage of floristry stock • Preparation and care for floristry stock • First aid administration • Time management • Communication skills • Team work skills • Numeracy and literacy
Average duration of learning	160 hours (20 days) of nominal learning suggested to include: <ul style="list-style-type: none"> • 5 days of occupational theory and • 15 days of occupational practice
Suggestions on organisation of learning	The acquisition of competencies (skills, knowledge, attitudes) described in this module may take place at a training centre or its equivalent provided all equipment and materials required for training are in place.
Assessment	Assessment to be conducted according to established regulations by a recognised assessment body using related practical and written test items from item bank.
Minimum required tools/ equipment/ implements or equivalent	holding facility, grid, insertion, glue gun, steel pick machine, florists' knives, rose strippers, wooden pick, first aid kit, safety boots, apron, pair of scissors
Minimum required materials and consumables or equivalent	water, floral preservatives, wire, flowers and other plant materials, gloves, detergents, glue, masking tape, pins, base medium,
Special notes	

Code	UE/ F/M1.6
Module title	M 1.6: Establish a Floricultural Enterprise
Related Qualification	Part of Uganda Vocational Qualification (Floriculturist UVQ1)
Qualification Level	1
Module purpose	After completion of this module, the trainee shall be able to start up and manage a floricultural business enterprise
Learning-Working Assignments (LWAs)	<p>LWA 6/1: Plan Floricultural Works LWA 6/2: Market Floricultural Products LWA 6/3: Generate Floriculture Records LWA 6/4: Perform Occupational Health, Safety and Environmental Protection Practices</p> <p>Note:</p> <ol style="list-style-type: none"> 1. The learning exercises may be repeated until the trainee acquires targeted competence; 2. The trainer is advised to deliver relevant theoretical instruction with demonstrations as required to perform each learning working assignment.
Related Practical Exercises (PEXs)	<p>LWA 6/1: Plan Floricultural Works PEX 1.1: Carry out environmental impact assessment PEX 1.2: Conduct a feasibility study PEX 1.3: Select farm site PEX 1.4: Determine fruit variety PEX 1.5: Source for farm inputs PEX 1.6: Identify labour requirements PEX 1.7: Determine production methods PEX 1.8: Develop site structural plan PEX 1.9: Prepare financial plan PEX 1.10: Prepare procurement plan</p> <p>LWA 6/2: Market Floricultural Products PEX 2.1: Brand products PEX 2.2: Label products PEX 2.3: Package products PEX 2.4: Price products PEX 2.5: Advertise products PEX 2.6: Perform sales promotion</p>

	<p>PEX 2.7: Exhibit products PEX 2.8: Grade products PEX 2.9: Transport products PEX 2.10: Sell products PEX 2.11: Communicate with customers</p>
	<p>LWA 6/3: Generate Floriculture Records PEX 3.1: Prepare production records PEX 3.2: Prepare labour records PEX 3.3: Prepare sales records PEX 3.4: Prepare financial records PEX 3.5: Prepare inventory records</p>
	<p>LWA 6/4: Perform Occupational Health, Safety and Environmental Health Protection Practices PEX 4.1: Observe health, safety and environmental practices PEX 4.2: Display safety signs PEX 4.3: Manage waste PEX 4.4: Train other workers on health and safety issues PEX 4.5: Administer first aid PEX 4.6: Comply with safety policies and regulations PEX 4.7: Perform firefighting PEX 4.8: Observe personal hygiene and sanitation PEX 4.9: Observe HACCP</p>
Occupational health and safety	<p>Precautions, rules and regulations on occupational health, safety and environmental protection, included in the listed related knowledge should be observed and demonstrated during LWAs and PEXs</p>
Pre-requisite modules	<p>None</p>
Related knowledge/ theory	<p>For occupational theory suggested for instruction/ demonstration, the trainer is not limited to the outline below. In any case, related knowledge/ theory may be obtained from various recognised reference materials as appropriate:</p> <ul style="list-style-type: none"> • Computer applications, • Calculations and costing • Business planning and management • Financial literacy • Record keeping • Resource management

	<ul style="list-style-type: none"> • Marketing techniques • Basic literacy and numeracy skills • Communication and customer care skills • Job planning • Floriculture rules and regulations • Branding and promotion methods • Business growth strategy • First aid administration • OHSE • HACCP • Design and Construction of floriculture structures • ICT
Average duration of learning	160 hours (20 days) of nominal learning suggested to include: <ul style="list-style-type: none"> • <i>5 days of occupational theory and</i> • <i>15 days of occupational practice</i>
Suggestions on organization of learning	The acquisition of competencies (skills, knowledge, attitudes) described in this module may take place at a training center or its equivalent provided all equipment and materials required for training are in place.
Assessment	Assessment to be conducted according to established regulations by a recognised assessment body using related practical and written test items from item bank.
Minimum required tools/ equipment/ implements or equivalent	calculators, computers, printers, sign posts, furniture, stamps, phones and first aid kit, Pair of scissors.
Minimum required materials and consumables or equivalent	receipt books, stamping ink, job display cards, pens, paper, file folders,
Special notes	

3.0 ATP- PART III

Assessment Instruments for FLORICULTURIST

- 3.1 Assessment of occupational competence is the procedure by which evidence is gathered and judged to decide if an individual (candidate) has met the stipulated assessment standards.
- 3.2 Assessment of occupational competence should comprise of both practical (Performance) testing and written (theory/knowledge) testing.
- 3.3 Based on the Occupational Profile and Training Modules, a combined panel of job practitioners and Instructors developed a substantial number of test items for assessing (practical) performance as well as items for assessing occupational knowledge (theory) all stored in an electronic Test Item Bank (TIB) at the Directorate of Industrial Training.
- 3.4 Performance (Practical)Test Items (PTI)are closely related to typical work situations in Ugandan business enterprises. They comprise of a test assignment for candidates and assessment criteria and/or scoring guides for assessors' use.
- 3.5 Written Test items (WTI) for written testing of occupational theory, (knowledge) are presented in different forms which include: Short answer test items. Multiple choice test items, Matching test items.

These WTIs herein focus on functional understanding as well as trouble-shooting typically synonymous with the world of work.

- 3.6 Composition of assessment/test papers will always require good choices of different types of WTI in order to ensure the assessment of relevant occupational knowledge required of candidates to exhibit competence.
- 3.7 The test items contained in the Test Item Bank may be used for continuous/formative assessment during the process of training as well as for summative assessment of candidates who have acquired their competences non-formally or informally.

In this document, samples of test items for assessing both performance (practical) and occupational knowledge (theory) of a FLORICULTURIST are included.

3.9 Overview of Test Item Samples Included

No.	Type of Test Item	Numbers included
1.	Written (Theory)- short answer	2
2.	Written (Theory)- multiple choice	2
3.	Written (Theory)- Matching item with generic	2
4.	Written (Theory)- Matching item with work sequence	2
5.	Performance (Practical) Test Items	2
	Total	10

DIT/ QS		Test Item Database Written (Theory) Test Item- No. 1			
Occupational Title:	Floriculturist				
Competence level:	Level 1				
Code no.					
Test Item type:	Short answer	√			
	Multiple choice				
	Matching item	Generic	Cause- Effect	Work- sequence	
Complexity level:	C1				
Date of OP:	August 2020				
Related modules:	M 1.1				
Time allocation:	5 minutes				

Test Item	Outline four (4) activities that should be carried out when maintaining a propagation unit
Answer spaces	(i) (ii) (iii) (iv)
Expected key (answers)	(i) Watering (ii) Weeding (iii) Fertiliser application (iv) Thinning (v) Pricking (vi) Root pruning (vii) Hardening (viii) Mulching (ix) Controlling pests and diseases

DIT/ QS		Test Item Database Written (Theory) Test Item- No. 2		
Occupational Title:	Floriculturist			
Competence level:	Level 1			
Code no.				
Test Item type:	Short answer	√		
	Multiple choice			
	Matching item	Generic	Cause-Effect	Work-sequence
Complexity level:	C2			
Date of OP:	August 2020			
Related modules:	M1.3			
Time allocation:	5 minutes			

Test Item	Mention at least four (4) ways of training plants
Answer spaces	(i) (ii) (iii) (iv)
Expected key (answers)	(i) Prune plants (ii) Stake plants (iii) Bend branches/plants (iv) Pinch plants (v) Remove water shoots (vi) Earth up plants (vii) De-sucker plants

DIT/ QS	Test Item Database Written (Theory) Test Item- No. 3			
Occupational Title:	Floriculturist			
Competence level:	Level 1			
Code no.				
Test Item type:	Short answer			
	Multiple choice	√		
	Matching item	Generic	Cause-Effect	Work-sequence
Complexity level:	C2			
Date of OP:	August 2020			
Related modules:	M1.1			
Time allocation:	2 minutes			

Test Item	Which of the following is an activity carried out when constructing a nursery shed?
Distracters and correct answer	A. Mount nursery bed B. Screening off shed C. Mix media and manure D. Clear nursery site

Key (answer)	B
--------------	---

DIT/ QS	Test Item Database Written (Theory) Test Item- No. 4			
Occupational Title:	Floriculturist			
Competence level:	Level 1			
Code no.				
Test Item type:	Short answer			
	Multiple choice	√		
	Matching item	Generic	Cause- Effect	Work- sequence
Complexity level:	C1			
Date of OP:	August 2020			
Related modules:	M1.3			
Time allocation:	2 minutes			

Test Item	Which of the following is the first step in controlling pests and diseases?
Distracters and correct answer	A. Spray the flowers to control pests B. Mix the pesticides C. Scout for pests and diseases D. Dispose of residual pesticides

Key (answer)	C
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DIT/QS	Test Item Database Written (Theory) Test Item- no. 5			
Occupational Title:	Floriculturist			
Competence level:	Level 1			
Code no.				
Test Item type:	Short answer			
	Multiple choice			
	Matching item	Generic	Cause-Effect	Work-sequence
		√		
Complexity level:	C2			
Date of OP:	August 2020			
Related Modules:	M 1.2			
Time allocation:	3 minutes			

Test Item	Match the following nursery management activities to their purposes.
------------------	--

Column A (Activity)	
1	Mulching
2	Pricking out
3	Hardening off
4	Thinning seedlings

Column B (Purposes)	
A	Transplant excess seedlings
B	Conserve water in the soil
C	Toughen seedlings
D	Remove excess seedlings
E	Providing water to seedlings
F	Removing excess branches

Key (answer)	1-B, 2-A, 3-C, 4-D
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DIT/QS		Test Item Database Written (Theory) Test Item- no. 6			
Occupational Title:	Floriculturist				
Competence level:	Level 1				
Code no.					
Test Item type:	Short answer				
	Multiple choice				
	Matching item	Generic	Cause-Effect	Work-sequence	
		√			
Complexity level:	C2				
Date of OP:	August 2020				
Related Modules:	M 1.3				
Time allocation:	3 minutes				

Test Item	Match the following tools and materials to their uses.
------------------	--

Column A (Tools)	
1	Hoe
2	Nets
3	Barbed wire
4	Grading table
5	Spade

Column B (Uses)	
A	Sprays nursery
B	Sort materials
C	Mix media and manure
D	Level site
E	Cover shade structure
F	Fence site

Key (answer)	1-D, 2-E, 3-F, 4-B, 5-C
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DIT/QS	Test Item Database Written (Theory) Test Item- no. 7			
Occupational Title:	Floriculturist			
Competence level:	Level 1			
Code no.				
Test Item type:	Short answer			
	Multiple choice			
	Matching item	Generic	Cause- Effect	Work- sequence
				√
Complexity level:	C 2			
Date of OP:	August 2020			
Related Modules:	M1.2			
Time allocation:	3 minutes			

Test Item	Arrange the following activities carried out when transplanting seedlings from the nursery in their order of performance.
-----------	---

Column A (chronology)	Column B (work steps) in wrong chronological order	
1 st	A	Plant seedlings
2 nd	B	Add basal fertiliser
3 rd	C	Dig planting holes
4 th	D	Shade seedlings
5 th	E	Water seedlings

Key (answer)	1-C, 2-B, 3-A, 4-E, 5-D
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DIT/QS	Test Item Database Written (Theory) Test Item- no. 8			
Occupational Title:	Floriculturist			
Competence level:	Level 1			
Code no.				
Test Item type:	Short answer			
	Multiple choice			
	Matching item	Generic	Cause-Effect	Work-sequence
				√
Complexity level:	C 2			
Date of OP:	August 2020			
Related Modules:	M1. 4			
Time allocation:	5 minutes			

Test Item	Arrange the following steps followed when assembling hand tied floral arrangement
-----------	---

Column A (chronology)	Column B (work steps) in wrong chronological order	
1 st	A	Select flowers and other materials
2 nd	B	Arrange flowers
3 rd	C	Trim flowers
4 th	D	Wrap flowers
5 th	E	Treat flowers
6 th	F	Prepare tying materials
7 th	G	Tie flowers and other materials
8 th	H	Accessorise the tie
9 th	I	Store the tie

Key (answer)	1-A, 2-E, 3-B, 4-F, 5-C, 6-D, 7- G, 8-H; 9-I,
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PERFORMANCE TEST ITEMS(SAMPLES)

DIT/ QS	Test Item Database Performance Test Item No. 9
Occupational Title:	Floriculturist
Competence level:	Level 1
Code no.	
Test Item:	Prepare a birthday gift bouquet (hand tie) using fresh natural flowers
Complexity level:	P2
Date of OP:	August 2020
Related module:	M1.4
Related skills and knowledge:	Elements (shape, texture and color) and principles of floral design, trimming, wiring, taping, health and safety precautions, tools and equipment usage, presentation skills, safe handling of flowers, floral market trends, preservation techniques.
Required tools, Equipment, and Materials:	Assorted fresh natural flowers, water, preservative, Disinfectant, flower food, Cutting tools- scissors, secateurs, wire cutter Tying materials (e.g. ribbon, cello tape, paper, polythene) Accessories (e.g. birth day card, chocolates, sweets, tags, crafts)
Time allocation:	2 Hours
Preferred venue:	Florist shop
Remarks for candidates	Candidates must have personnel protective equipment
Remarks for assessors	Provide all the required resources for the assessment

#	Assessment criteria	Scoring guide	Max. Score	
			Process	Result
1	Preparation for the task	Wore PPE; <ul style="list-style-type: none"> • Gloves • Apron • overcoat • Nose mask 		1 1 1 1
2	Preparation of materials	Assembled tools, materials and equipment		2
		Cleaned work area	2	
		Dirt free work environment observed		1
		Sorted flowers and other material	2	
		Damage free flowers organised in containers observed		3
		unpacked flowers without damage	2	
		Removed excess leaves and stalks	3	
		Well-trimmed flower stalks observed		2
		Treated flowers	3	
		Soaked flowers in clean water with flower food and drops of jik	3	
		Fresh turgid flower clusters observed		2
		Made design sketches	3	
3	Assembling of hand - tie gift bouquet	Arranged flowers	2	
		Trimmed flowers to size	2	
		Wrapped flowers	2	
		Prepared tying material	3	
		Tied flower and other materials	3	
		A firmly tied bouquet to the assembly observed .		3
4	Preparation of the gift for delivery	Added accessories to the assembly	2	
		Tagged assembly	2	
		Packed gift bouquet for delivery	3	

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		Well packed flower bouquet observed		2
5	Demobilisation of resources	Cleaned work area	2	
		Disposed waste		2
		Stored tools , equipment and unused materials		2
		Removed personal protective gear		2
	TOTAL		39	25
		64		

DIT/ QS	Test Item Database Performance Test Item- no. 10
Occupational Title:	Floriculturist
Competence level:	Level 1
Code no.	
Test Item:	Establish a floricultural nursery bed of 2m long and plant flower seeds
Complexity level:	P 2
Date of OP:	August 2020
Related module:	M1.1
Related skills and knowledge:	<ul style="list-style-type: none"> • Media preparation • Nursery site selection • Shed construction and techniques • Tools and equipment usage • Media sterilisation • Knowledge on health and safety practices • Seed propagation techniques • Fertiliser types and their application
Required tools, Materials and Equipment:	Panga, hand hoe, tape measure, rake, string, slasher, sieve, fertilisers, pegs, poles, flower seeds, nails, and palm leaves, nets, dry grass, wheelbarrow, hammer, gumboots, overall. gloves, head gear, hole digger
Time allocation:	4 hours
Preferred venue:	Garden
Remarks for candidates	Candidates must have personnel protective equipment
Remarks for assessors	Avail all the required materials, tools and equipment required for assessment

#	Assessment criteria	Scoring guide	Max. Score	
			Process	Result
1	Preparation for the task	Wore personnel protective gear <ul style="list-style-type: none"> • Safety boots • Overall • Gloves 		1 1 1

#	Assessment criteria	Scoring guide	Max. Score	
			Process	Result
		Assembled tools, equipment and materials		2
2	Identification of site	Selected gentle sloping site		2
		Selected an open site		2
3	Preparation of the bed	Slashed site	2	
		Site slashed to ground level observed		2
		Tilled site	3	
		Deep tilth at a depth of 20cm verified		3
		Removed trash	2	
		Demarcated the bed by 2mx1m	2	
		Demarcated bed of 2mx1m verified		2
		Raised the bed by 10cm	2	
		Bed raised by 10cm verified		2
		Added ½ basin full of compost manure	2	
		Uniform spread of compost manure observed		3
		Sterilised the soils	3	
4	Sowing of the flower seeds	Made planting farrows 10cm apart and 1inch deep	2	
		Planting farrows of 10cm apart and 1inch deep verified		2
		Sowed seeds in farrows	2	
		Covered seeds with a thin layer of soil	2	
		Watered nursery bed	2	
		Moist nursery bed observed		3
5	Construction of the shed	Dug holes at the 4 corners of the bed	2	
		Holes dug to the depth of 2 feet observed		2
		Fixed poles	2	
		Firmly fixed poles observed		3
		Covered shed structure	2	
		Firmly established nursery bed of 2 by 1m verified		3
		Labelled nursery	2	

#	Assessment criteria	Scoring guide	Max. Score	
			Process	Result
		Fenced Nursery	3	
6	Documentation of the activity	Recorded activity details	1	
		Recorded spacing		1
		Recorded date of making a nursery shade		1
		Recorded planting date		1
		Recorded expected date of transplanting		1
		Recorded name and variety of crop planted		1
7	Demobilisation of resources	Cleaned work area		1
		Cleaned tools and equipment		1
		Stored tools, equipment and unused materials		2
		Removed protective gear		1
TOTAL			36	44
Maximum Score (Y)		(X/Y)*100	80	

4.0 ATP-PART IV

INFORMATION ON REVIEW PROCESS

4.1 Occupational Profile Review (August 2020)

The Assessment and Training Package was exclusively reviewed by job practitioners of the Floriculturist occupation, Secondary school Teachers who double as examiners of Agriculture with the Uganda National Examinations Board (UNEB) and Curriculum Development Specialists working with the National Curriculum Development centre (NCDC).

The job expert panel, guided by UVQF Facilitators reviewed duties and tasks performed and provided additional generic information regarding the occupation.

4.2 Training Module Review (August 2020)

Based on the reviewed Occupational Profile for a Floriculturist of August 2020, Training Modules were reviewed by job practitioners, guided by UVQF Facilitators.

4.3 Test Item Review (August 2020)

Based on the reviewed Occupational Profile for a Floriculturist of August 2020, and Training Modules of August 2020, Test Items were reviewed by combined panels of Teachers and job practitioners, guided by UVQF Facilitators.

4.4 Methodology

The rationale for the Assessment and Training Package Review was to link Vocational Education and Training to the real world of work by bridging Occupational Standards to Training Standards through industry-led Standards-Based Assessment.

Active participation of both teachers and job practitioners' panels consolidated the development philosophy.

The panelists worked as teams in workshop settings complemented by off-workshop field research and literature review activities including international benchmarking.

4.5 Review panels

The participating panels of Job Practitioners required at review stages were constituted by members from the following organisations:

Review panel		
No.	Name	Institution/ Organisation
1.	Sendikaddiwa James	National Curriculum Development Center
2.	Tushabe David	UFEA
3.	Ninsiima Bonitah	St. Patrick Sembabule
4.	Omong Dennis Edger	Naalya SS Bweyogerere
5.	Kwikiriza K. Loy	St. Johns ssWakitaka
6.	Jafar Abubakar	Bukalasa Agriculture College
7.	Oryem Richard	Mubende Light SS
8.	Kebirungi Provia	Mbarara High School
9.	Ninsiima Jane	Nsangi Maya
10.	Omulo Charles	JP cuttings
11.	Drijaru Josephine	Manje Estates
12.	Esther Iuma Nekambi	UEFA

4.6 Quality check panel

No.	Name	Organisation
1.	Sendikaddiwa James Kajubi	NCDC
2.	Aryatuha Ronnet	DIT
3.	Ssentongo Simon Peter	DIT
4.	Sempala Patrick	MoES
5	Mugabe Brian	DIT

4.6 Facilitator team

This Assessment and Training Package was reviewed by a Facilitator team listed below:

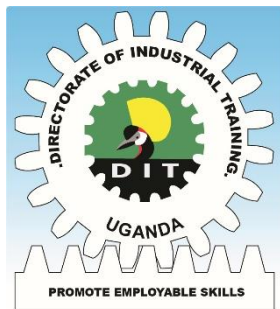
1. **Team Leader:** Ms. Mukyala Ruth Ag Deputy Director, DIT
2. **Facilitators:** Mr. Richard Ochwo, SPQO, DIT; and Mr. Kirabira, Yusuf QO, DIT
3. **Quality check facilitator:** Ms. Asiimwe Moreen
4. **Data Entrants:** Ms. Patra Nakimuli
Ms. Agnes Kusasira
Ms. Nyakamadi Janet
Ms. Nampijja Janet
Mwanguzi Willy
Nabirye Asha
Ninsiima Isabella
Ms. Atai Sarah
5. **Compiled by:** Ms. Kusasira Agnes, Data Entrant DIT
6. **Edited by:** Ms. Mukyala Ruth Ag Deputy Director, QS Dept DIT
7. **Coordinated by:** Mr. Byakatonda Patrick Ag. Director, DIT;

Reference time

The Assessment and Training Package was compiled in December 2020 and may be periodically revised to match the dynamic trends in the occupation and hence issued in different versions.

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