



**cetb**

Bord Oideachais agus  
Oiliúna Chorcaí  
*Cork Education and  
Training Board*

**Cork Education and Training Board**

**Programme Module for**

**Horticultural Tools and Equipment**

**leading to**

**Level 4 FETAC**

**Horticultural Tools and Equipment 4N0663**

### Introduction

This programme module may be delivered as a standalone module leading to certification in a FETAC minor award. It may also be delivered as part of an overall validated programme leading to a Level 4 FETAC Certificate.

The teacher/tutor should familiarise themselves with the information contained in Cork Education and Training Board's programme descriptor for the relevant validated programme prior to delivering this programme module.

The programme module is structured as follows:

1.	Title of Programme Module
2.	FETAC Component Title and Code
3.	Duration in hours
4.	Credit Value of FETAC Component
5.	Status
6.	Special Requirements
7.	Aim of the Programme Module
8.	Objectives of the Programme Module
9.	Learning Outcomes
10.	Indicative Content
11.	Assessment <ul style="list-style-type: none"><li>a) Assessment Technique(s)</li><li>b) Mapping of Learning Outcomes to Assessment Technique(s)</li><li>c) Guidelines for Assessment Activities</li></ul>
12.	Grading
13.	Learner Marking Sheet(s), including Assessment Criteria

### Integrated Delivery and Assessment

The teacher/tutor is encouraged to integrate the delivery of content where an overlap between content of this programme module and one or more other programme modules is identified. This programme module will facilitate the learner to develop language, literacy and numeracy skills relevant to the themes and content of the module.

Likewise the teacher/tutor is encouraged to integrate assessment where there is an opportunity to facilitate a learner to produce one piece of assessment evidence which demonstrates the learning outcomes from more than one programme module. The integration of the delivery and assessment of level 4 Communications and level 4 Mathematics modules with that of other level 4 modules is specifically encouraged.

Structured communication and teamwork is encouraged between the teacher/tutor delivering this programme module and the language, literacy, numeracy and learning support teacher/tutor, as appropriate, to facilitate the learner in completing the programme module and achieving certification in the award.

**Indicative Content**

The indicative content in Section 10 does not cover all teaching possibilities. The teacher/tutor is encouraged to be creative in devising and implementing other approaches, as appropriate. The use of examples is there to provide suggestions. The teacher/tutor is free to use other examples, as appropriate. The indicative content ensures all learning outcomes are addressed but it may not follow the same sequence as that in which the learning outcomes are listed in Section 9. It is the teacher's/tutor's responsibility to ensure that all learning outcomes are included in the delivery of this programme module.

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<b>1. Title of Programme Module</b> Horticultural Tools and Equipment
<b>2. Component Name and Code</b> Horticultural Tools and Equipment 4N0683
<b>3. Duration in Hours</b> 100 Hours (typical learner effort, to include both directed and self directed learning)
<b>4. Credit Value</b> 10 Credits
<b>5. Status</b> This programme module may be compulsory or optional within the context of the validated programme. Please refer to the relevant programme descriptor, Section 9 Programme Structure
<b>6. Special Requirements</b> Delivery of this module is dependent on availability and/or access to appropriate tools and equipment.
<b>7. Aim of the Programme Module</b> The programme module aims to equip the learner with the knowledge, skill and competence to identify, select, use and maintain commonly used horticultural tools and equipment.
<b>8. Objectives of the Programme Module</b> <ul style="list-style-type: none"><li>• To enable the learner to choose the appropriate tools and equipment to perform a range of horticultural tasks</li><li>• To raise the learner's awareness of the risks associated with the operation of tools and equipment</li><li>• To acquaint the learner with the appropriate maintenance and safety procedures associated with tools and equipment</li><li>• To enable the learner to perform common horticultural tasks in a safe and efficient way, causing minimal wear and tear to tools and equipment.</li><li>• To assist the learner to develop the language, literacy and numeracy skills related to horticultural tools and equipment through the medium of the module themes and content.</li></ul>

**Learning Outcomes of Level 4 Horticultural Tools and Equipment 4N0683**

Learners will be able to:

1. List common tools and equipment used in horticultural operations and workshops to include their primary use and hazards associated with their use
2. Describe safe operating practices for a range of tools and equipment to include both hand and power
3. Prepare power hand tools and equipment for use to include using appropriate Personal Protective Equipment (PPE), pre-starting safety checks, mixing fuel, checking for leaks and damage while adhering to manufacturers' recommendations and operators' manuals
4. Use a range of hand tools safely including a hoe, rake, fork and spade
5. Use power hand tools safely including a two-stroke engine powered strimmer and a hedge cutter
6. Operate a pedestrian rotovator, scarifier, knapsack sprayer, mechanised raker, pedestrian mower, ride-on mower, trailing mower and compact-type tractor mower
7. Maintain all equipment while in use to include setting height of cut, removing blade for maintenance, sharpening blade, refuelling, replacing cord or gut as needed, and maintaining lubrication and filters
8. Prepare tools and equipment for storage to include cleaning and storage procedures
9. Operate within appropriate safety procedures to create and maintain a safe working environment including safety standards regarding lifting, carrying and handling plants, tools and equipment.

## **10. Indicative Content**

This section provides suggestions for programme content but is not intended to be prescriptive. The programme module can be delivered through classroom based learning activities, group discussions, one-to-one tutorials, field trips, case studies, role play and other suitable activities, as appropriate.

### **Section 1 : Tools and Equipment relating to Turf Lawn Preparation and Maintenance**

**Facilitate the learner to list common tools and equipment associated with turf lawn preparation and maintenance**

**Facilitate the learner to describe relevant factors relating to the selection and application of tools and equipment in lawn preparation and maintenance** (for example, soil aeration, drainage, manual and mechanised levelling, stone removal, sowing and rolling).

**Facilitate the learner to describe the use and functions of tools and equipment relating to lawn preparation and maintenance** (for example, mowing, mulching, fertilising, moss raking, etc)

**Facilitate the learner to safely perform lawn laying and maintenance tasks while maintaining a high level of control of tools/ equipment, to include:** roto – tilling, landscape raking (broad raking), stone burying, mechanised stone-raking, mechanised grass-sowing, soil-rolling, fertilizer-spreading, mowing using a ride-on mower, pedestrian mower, trailing mower and compact-type tractor mower, scarifying and edging using a half-moon tool.

**Facilitate the learner's awareness all relevant maintenance and safety procedures**

### **Section 2: Tools and Equipment relating to Vegetable and Flower Production**

**Facilitate the learner to list common tools and equipment associated with vegetable and flower production**

**Facilitate the learner to describe the use and functions of tools and equipment relating to vegetable and flower production** (for example, forking, digging, incorporating organic matter, raking, hoeing, aerating, row setting, mechanical sowing, ridging, watering, spraying)

**Facilitate the learner to safely perform tasks relating to vegetable and flower production, while maintaining a high level of control of tools/ equipment, to include:**

- soil/bed preparation: forking in, single and double digging (spade), barrow loading (shovel), raking to fine tilth (narrow rake)
- maintenance: hoeing, aerating, row setting/marking, precision sowing(with push seeder), ridging with push-hoe, watering and spraying

**Facilitate the learner's awareness of all relevant maintenance and safety procedures**

### **Section 3: Tools and Equipment relating to Shrub and Tree Pruning and Trimming**

**Facilitate the learner to list common tools and equipment associated with shrub and tree pruning and trimming**

**Facilitate the learner to describe the use and functions of tools and equipment relating to shrub and tree pruning and trimming in various settings** ( mechanised hedge and shrub trimming(petrol trimmer), pruning with secateurs, knives, loppers and bow-saws)

**Facilitate the learner to safely perform tasks relating to shrub and tree pruning and trimming, while maintaining a high level of control of tools/ equipment, to include:** trimming a hedge using a petrol trimmer and hand-shears; pruning a tree or shrub using secateurs, removing larger limbs with a lopper and bow-saw, cleaning a collar using a pruning knife

**Facilitate the learner's awareness all relevant maintenance and safety procedures**

### **Section 4: Safety Procedures**

**Facilitate the learner to operate within appropriate safety procedures to create and maintain a safe working environment including safety standards regarding lifting, carrying and handling plants, tools and equipment, to include:**

Listing of the hazards associated with the use of each tool identified in Sections 1-3

- Describing safe operating practices for the use of tools identified in Sections 1-3
- Identification of appropriate physical warm-up practice by user, for example, lower back, neck, muscles

**Facilitate the learner to prepare power hand tools and equipment for safe use to include:**

- Use of PPE or personal protective equipment as appropriate(for example, steel toecap boots, gloves, kneepads)
- Pre-starting safety checks(for example, checking for loose blades or entangled materials, checking that power applications are turned off and that gears are neutral etc.).
- Checking for leaks and damage( for example, oil and fuel, air and fuel filters)
- Ensuring setting of desired operational gauging as required
- Adhering to manufacturers' recommendations and operators' manuals

### **Section 5: Maintenance and Storage Procedures**

**Facilitate the learner to maintain each tool identified in Sections 1-3 while in use, to include,** as appropriate, setting height of cut, sharpening blade, oiling, removal and replacement of starting cord or gut, or other wearing components (for example, disposable air filters, barrier rings, handles etc.), and maintaining lubrication

**Facilitate the learner to prepare tools and equipment for storage, to include proper cleaning procedures** ( for example, assessing for damage/ leaks after operation, removing entangled wire/ debris, removing corrosive residues such as grass, fertilizer etc.)

**Facilitate the learner to adhere to relevant safety procedures**

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**Assessment****11a. Assessment Techniques**

Skills Demonstration 80%

Examination - Theory 20%

**11b. Mapping of Learning Outcomes to Assessment Techniques**

In order to ensure that the learner is facilitated to demonstrate the achievement of all learning outcomes from the component specification; each learning outcome is mapped to an assessment technique(s). This mapping should not restrict an assessor from taking an integrated approach to assessment.

<b>Learning Outcome</b>	<b>Assessment Technique</b>
1. List common tools and equipment used in horticultural operations and workshops to include their primary use and hazards associated with their use	Skills demonstration/ Examination-theory
2. Describe safe operating practices for a range of tools and equipment to include both hand and power	Skills demonstration/ Examination-theory
3. Prepare power hand tools and equipment for use to include using appropriate Personal Protective Equipment (PPE), prestarting safety checks, mixing fuel, checking for leaks and damage while adhering to manufacturers' recommendations and operators' manuals	Skills demonstration/ Examination-theory
4. Use a range of hand tools safely including a hoe, rake, fork and spade	Skills demonstration/ Examination-theory
5. Use power hand tools safely including a two-stroke engine powered strimmer and a hedge cutter	Skills demonstration/ Examination-theory
6. Operate a pedestrian rotovator, scarifier, knapsack sprayer, mechanised raker, pedestrian mower, ride-on mower, trailing mower and compact-type tractor mower	Skills demonstration/ Examination-theory
7. Maintain all equipment while in use to include setting height of cut, removing blade for maintenance, sharpening blade, refuelling, replacing cord or gut as needed, and maintaining lubrication and filters	Skills demonstration/ Examination-theory
8. Prepare tools and equipment for storage to include cleaning and storage procedures	Skills demonstration/ Examination-theory
9. Operate within appropriate safety procedures to create and maintain a safe working environment including safety standards regarding lifting, carrying and handling plants, tools and equipment	Skills demonstration/ Examination-theory

**11c. Guidelines for Assessment Activities**

The assessor is required to devise assessment briefs and marking schemes for the skills demonstration and examination papers, marking schemes and outline solutions for the examination. In devising the assessment briefs and examination papers, care should be taken to ensure that the learner is given the opportunity to show evidence of achievement of ALL the learning outcomes.

Assessment briefs may be designed to allow the learner to make use of a wide range of media in presenting assessment evidence, as appropriate. Quality assured procedures must be in place to ensure the reliability of learner evidence.

<b>Skills Demonstrations</b>	<b>80 %</b>
The learner will complete 4 skills demonstrations at appropriate intervals during the programme module taking seasonal factors into account. The skill demonstrations may be recorded on video for evidence and/or marking sheet as per section 12	
<b>Skills Demonstration 1: Using tools/ equipment in tilling/raking/ burying/seeding</b>	<b>20%</b>
<p><b>The learner will engage in the use of the relevant horticultural tools and/or equipment to perform one of the following actions:</b></p> <ul style="list-style-type: none"> <li>• Roto – tilling</li> <li>• Mechanised stone – raking</li> <li>• Mechanised stone – burying</li> <li>• Mechanised grass seeding</li> </ul> <p><b>The learner will perform the action by operating the relevant horticultural tools/ equipment in accordance with correct operational, safety, maintenance and storage procedures</b></p>	
<b>Skills Demonstration 2: Using tools/ equipment in mowing</b>	<b>20%</b>
<p><b>The learner will engage in the use of the relevant horticultural tools and/or equipment to perform one of the following actions:</b></p> <ul style="list-style-type: none"> <li>• Mowing grass with tractor type trailer mower</li> <li>• Mowing grass with a ride-on mower</li> <li>• Mowing grass with a pedestrian self-propelled mower</li> <li>• Mowing grass with a high grass mower</li> <li>• Cutting high grass with a mechanised petrol strimmer/ brushcutter</li> </ul> <p><b>The learner will perform the action by operating the relevant horticultural tools/ equipment in accordance with correct operational, safety, maintenance and storage procedures.</b></p>	

<b>Skills Demonstration 3:</b>	
<b>Using tools/ equipment in pruning</b>	<b>20%</b>
<p><b>The learner will engage in the use of the relevant horticultural tools and/or equipment to perform one of the following actions:</b></p> <ul style="list-style-type: none"> <li>• Pruning using bypass secateurs</li> <li>• Pruning using loppers</li> <li>• Pruning using a pruning -saw</li> <li>• Pruning using a bow – saw</li> </ul> <p><b>The learner will perform the action by operating the relevant horticultural tools/ equipment in accordance with correct operational, safety, maintenance and storage procedures.</b></p>	
<b>Skills Demonstration 4:</b>	
<b>Using tools/ equipment in sowing/ digging/ spraying/ hoeing</b>	<b>20%</b>
<p><b>The learner will engage in the use of the relevant horticultural tools and/or equipment to perform one of the following actions:</b></p> <ul style="list-style-type: none"> <li>• Sowing using a pedestrian precision seeder</li> <li>• Single digging with a spade/fork/Chillington Mattock</li> <li>• Using a knapsack sprayer</li> <li>• Using a hoe</li> </ul> <p><b>The learner will perform the action by operating the relevant horticultural tools/ equipment in accordance with correct operational, safety, maintenance and storage procedures.</b></p>	

<b>Examination - Theory</b>	<b>20 %</b>
<p>The learner will undertake examination as follows: 1 hour duration The examination will consist of 10 short questions relating to the overall programme module</p>	

### 12. Grading

Distinction:	80% - 100%
Merit:	65% - 79%
Pass:	50% - 64%
Unsuccessful:	0% - 49%

At levels 4, 5 and 6 major and minor awards will be graded. The grade achieved for the major award will be determined by the grades achieved in the minor awards.

<b>Horticultural Tools and Equipment 4N0683</b>	<b>Learner Marking Sheet Skills Demonstration 1</b>  Using tools/ equipment in tilling/raking/ burying/seeding 20%
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Learner's Name: \_\_\_\_\_

Learner's PPSN: \_\_\_\_\_

Assessment Criteria	Maximum Mark	Learner Mark
<p><b>The learner will engage in the use of the relevant horticultural tools and/or equipment to perform one of the following actions:</b></p> <ul style="list-style-type: none"> <li>• Roto – tilling</li> <li>• Mechanised stone – raking</li> <li>• Mechanised stone – burying</li> <li>• Mechanised grass seeding</li> </ul> <p><b>The learner will perform the action by operating the relevant horticultural tools/ equipment in accordance with correct operational, safety, maintenance and storage procedures, such as:</b></p> <ul style="list-style-type: none"> <li>• Selection and wearing of appropriate PPE</li> <li>• Correct checking of oil / lubricants /hydraulic fluid, filling/replacing if necessary</li> <li>• Correct clearance check of rotating implement/blades</li> <li>• Correct checking of work settings(depth/speed)</li> <li>• Correct checking of pre-start control/gear positions</li> <li>• Correct idle transportation</li> <li>• High level of control in working state</li> <li>• Efficient patterning</li> <li>• Correct safety stopping/shut-off</li> <li>• Correct cleaning of equipment and post work routine</li> </ul>	<b>20</b>  <b>2 marks each</b>	
<b>Total Marks</b>	20	

This is to state that the evidence presented in the attached portfolio is complete and is the work of the named learner.

Assessor's Signature: \_\_\_\_\_

Date: \_\_\_\_\_

External Authenticator's Signature: \_\_\_\_\_

Date: \_\_\_\_\_

<b>Horticultural Tools and Equipment 4N0683</b>	<b>Learner Marking Sheet Skills Demonstration 2</b>  Using tools/ equipment in mowing 20%
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Learner's Name: \_\_\_\_\_

Learner's PPSN: \_\_\_\_\_

Assessment Criteria	Maximum Mark	Learner Mark
<p><b>The learner will engage in the use of the relevant horticultural tools and/or equipment to perform one of the following actions:</b></p> <ul style="list-style-type: none"> <li>• Mowing grass with tractor type trailer mower</li> <li>• Mowing grass with a ride-on mower</li> <li>• Mowing grass with a pedestrian self-propelled mower</li> <li>• Mowing grass with a high grass mower</li> <li>• Cutting high grass with a mechanised petrol strimmer/brushcutter</li> </ul> <p><b>The learner will perform the action by operating the relevant horticultural tools/ equipment in accordance with correct operational, safety, maintenance and storage procedures, such as:</b></p> <ul style="list-style-type: none"> <li>• Selection and wearing of appropriate PPE</li> <li>• Correct checking of oil / lubricants /hydraulic fluid, filling/replacing if necessary</li> <li>• Correct clearance check of blades, tension on belts</li> <li>• Correct checking of work settings(height/speed)</li> <li>• Correct checking of pre-start control/gear positions</li> <li>• Correct idle transportation</li> <li>• High level of control in working state</li> <li>• Efficient patterning</li> <li>• Correct safety stopping/shut-off</li> <li>• Correct cleaning of equipment and post work routine</li> </ul>	<p><b>20</b></p> <p><b>2 marks each</b></p>	
<b>Total Marks</b>	20	

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<b>Horticultural Tools and Equipment 4N0683</b>	<b>Learner Marking Sheet Skills Demonstration 3</b>  Using tools/ equipment in pruning 20%
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Learner's Name: \_\_\_\_\_

Learner's PPSN: \_\_\_\_\_

Assessment Criteria	Maximum Mark	Learner Mark
<p><b>The learner will engage in the use of the relevant horticultural tools and/or equipment to perform one of the following actions:</b></p> <ul style="list-style-type: none"> <li>• Pruning using bypass secateurs</li> <li>• Pruning using loppers</li> <li>• Pruning using a pruning -saw</li> <li>• Pruning using a bow – saw</li> </ul> <p><b>The learner will perform the action by operating the relevant horticultural tools/ equipment in accordance with correct operational, safety, maintenance and storage procedures, such as:</b></p> <ul style="list-style-type: none"> <li>• .Selection and wearing of appropriate PPE</li> <li>• Correct sharpening of blade/tensioning of tool</li> <li>• Correct disinfection of blade</li> <li>• Correct angle in cut approach</li> <li>• Correct pressure/ movement</li> <li>• Safe support and removal of cut limb</li> <li>• Correct cleaning of blades</li> <li>• Correct oiling of tool</li> <li>• Correct replacement of blade/spring</li> <li>• Correct covering of blades with pouch or case.</li> </ul>	<p><b>20</b></p> <p><b>2 marks each</b></p>	
<b>Total Marks</b>	20	

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<b>Horticultural Tools and Equipment 4N0683</b>	<b>Learner Marking Sheet Skills Demonstration 4</b>  Using tools/ equipment in sowing/ digging/ spraying/ hoeing 20%
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Learner's Name: \_\_\_\_\_

Learner's PPSN: \_\_\_\_\_

Assessment Criteria	Maximum Mark	Learner Mark
<p><b>The learner will engage in the use of the relevant horticultural tools and/or equipment to perform one of the following actions:</b></p> <ul style="list-style-type: none"> <li>• Sowing using a pedestrian precision seeder</li> <li>• Single digging with a spade/fork/Chillington Mattock</li> <li>• Using a knapsack sprayer</li> <li>• Using a hoe</li> </ul> <p><b>The learner will perform the action by operating the relevant horticultural tools/ equipment in accordance with correct operational, safety, maintenance and storage procedures, such as:</b></p> <ul style="list-style-type: none"> <li>• Selection and wearing of appropriate PPE</li> <li>• Correct preparation of work settings such as spacing and jet density</li> <li>• Correct safety checking of handles/ straps and wheels</li> <li>• Correct and efficient application</li> <li>• Safe back positioning and low straining levels</li> <li>• Appropriate care for tool in use</li> <li>• Correct cleaning of tool when finished</li> <li>• Correct oiling of metal parts and handles</li> <li>• Correct replacement of handle/discs/jets</li> <li>• Correct covering of blades with pouch or case.</li> </ul>	<p><b>20</b></p> <p><b>2 marks each</b></p>	
<b>Total Marks</b>	<b>20</b>	

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Date: \_\_\_\_\_

<b>Horticultural Tools and Equipment 4N0683</b>	<b>Learner Marking Sheet Examination 20%</b>
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Learner's Name: \_\_\_\_\_

Learner's PPSN: \_\_\_\_\_

<b>Assessment Criteria</b>	<b>Maximum Mark</b>	<b>Learner Mark</b>
<b>Examination Questions</b> Ten short answer questions, answer all (2 marks each) (Indicate questions answered)		
Question 1 _____	2	
Question 2 _____	2	
Question 3 _____	2	
Question 4 _____	2	
Question 5 _____	2	
Question 6 _____	2	
Question 7 _____	2	
Question 8 _____	2	
Question 9 _____	2	
Question 10 _____	2	
<b>Total Marks</b>	<b>20</b>	

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Date: \_\_\_\_\_

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Date: \_\_\_\_\_