
DUT
DURBAN UNIVERSITY OF TECHNOLOGY

FACULTY OF APPLIED SCIENCES

# 2019 HANDBOOK
# HORTICULTURE

# HANDBOOK FOR 2019

# FACULTY OF APPLIED SCIENCES

## DEPARTMENT OF HORTICULTURE

## IMPORTANT NOTICES

Your registration is in accordance with all current rules of the Institution. If, for whatever reason, you do not register consecutively for every year/semester of your programme, your existing registration contract with the Institution will cease. Your re-registration anytime thereafter will be at the discretion of the institution and, if permitted, will be in accordance with the rules applicable at that time.

The rules in this departmental handbook must be read in conjunction with the General Rules (G Rules) contained in the DUT General Handbook for Students as well as the relevant Study Guides.

With respect to an appeal, your attention is specifically drawn to Rules G1(8) and (9), and to the process of dealing with students issues.

## STRATEGIC DIRECTION (2015-2019)

## FACULTY OF APPLIED SCIENCES [Educate. Engage. Innovate.] VISION

Leading innovation through science and technology

## MISSION STATEMENT

Educate students
Generate new scientific knowledge
Engage communities

## VALUES

1. **Accountability:** We take ownership of all activities, resources and tasks required of us. We deliver on our promises and responsibilities.
2. **Integrity:** We adhere to moral standards and principles. We are transparent and consistent in all our actions, and lead by example.
3. **Dedication:** We are committed to achieving our goals and expectations.
4. **Professionalism:** We operate within clear boundaries with respect to our code of conduct.
5. **People Oriented:** We are committed to sustaining the morale and holistic development of staff and student. We value diversity in all forms.

## DEPARTMENT OF HORTICULTURE

### VISION

Growing a Centre of horticultural excellence that integrates people, plants and planet.

### MISSION

Empowering graduates to create sustainable healthy environments through the diverse use of plants.

### VALUES

1. **Mutual Respect**
   We accept, acknowledge and embrace diverse people, plants and perspectives.
   Ubuntu: I am because you are
2. **Integrity**
   We are true to our word. We are ethical in our dealings with one another. We keep our commitments
3. **Accountability**
   We take responsibility for our actions. We are answerable for the tasks placed on us to deliver excellence
4. **Teamwork**
   We work together to add value and achieve our goals. Leadership, to us, is not about the leader – but the team.
5. **Environmental Ethics**
   We strive to develop green consciousness amongst all planetary citizens.

***"Growing Success"***

CONTENTS

## 1. DEPARTMENTAL AND FACULTY CONTACT DETAILS

**All departmental queries to**:

| | |
|---|---|
| Secretary: | Ms S Mhlophe |
| Tel No: | 031 373 5124 |
| Fax mail: | 086 743 6240 |
| Email: | sphelelem@dut.ac.za |
| Location: | Room MB5-19; ML Sultan Campus: 41-43 Centenary Road |

**All Faculty queries to**:

| | |
|---|---|
| Faculty Officer: | Ms G Shackleford |
| General Enquiries No: | 031 373 3033 |
| Facsimile No: | 031 373 2175 |
| Email: | dutfas@dut.ac.za |
| Location: | Block S4 Level 3, Steve Biko Campus |
| Faculty Assistant: | Ms J Nagan |
| General Enquiries No: | 031 373 2717 |
| Facsimile No: | 031 373 2175 |
| Email: | jessican@dut.ac.za |
| Location: | Block S4 Level 3, Steve Biko Campus |
| **Executive Dean:** | Prof S Singh |
| Executive Dean's Secretary: | Mrs N Naidoo |
| Telephone No: | 031 373 2720 |
| Facsimile No: | 031 373 2724 |
| Email: | dutfas@dut.ac.za |
| Location: | Between Block S6 and S7, Level 4, Steve Biko Campus |

## 2. DEPARTMENTAL STAFF

| | |
|---|---|
| **Head of Department** | Dr L Gitonga-Kariuki, BSc. Agric. (Hons) (UON), MSc. Hort. (Adelaide), PhD (Plant genet.) (JKUAT), Postdoc (Mol. Biol.) (Wits), Pr Sci Nat. |
| **Secretary** | Ms S Mhlophe (PT), ND: Public Relations Management (DUT), BTech: Public Relations Management (DUT) |
| **Lecturers** | Mrs A Badenhorst, ND: Horticulture (CPUT), BTech: Horticulture (CPUT), MSc Envir. Mngt. (UNISA) |
| | Mrs I Govender, BSc (Hons) (UDW), HED (Postgrad) (UNISA), MSc (Env. Sc.) (UN), Pr Sci Nat |
| | Dr JB Foley, ND: Graphic Design (TN), PGD: Environment and Development (UN), NHD: Horticulture (TN); MTech: Tourism & Hospitality, PhD; Conservation (UKZN) |
| | Mr DM Govender, BTech: Horticulture (TSA); BTech: Business Administration (DUT); MTech: Human Resource Management (DUT); IERM (Africa) |
| | Dr I Matimati (PT) BSc (Hons), MPhil Agric (Crop Science), MSc Botany (UWC), PhD Botany (UCT). |
| **Senior Technical Assistant:** | Mr T Anumanthoo, BTech: Horticulture (DUT); BTech Business Admin (DUT) |
| **General Assistants**: | (Vacant Post)<br>Ms N Nokwindla<br>Mr B Khanyile |

## 3. QUALIFICATIONS OFFERED BY THE DEPARTMENT

Programmes offered in this Department which, upon successful completion, will lead to the award of the following qualifications:

- Diploma (D)
- National Diploma (ND)
- Bachelor of Technology (BT)

| | Qualification Code | Important dates | SAQA NLRD ID |
|---|---|---|---|
| D: Sustainable Horticulture and Landscaping | DISLD1 | 1st offered Jan 2018 | 97807 |
| ND: Horticulture | NDHRT2 | | 72238 |
| ND: Horticulture (ECP) | NDHTF1 | Last offered in 2017 | 72238 |
| BTech: Horticulture | BTHRT1 | | 72139 |

## 4. DIPLOMA IN SUSTAINABLE HORTICULTURE AND LANDSCAPING (DISLD1)

### Purpose of Qualification

One of the most rapid growth areas in the field of agriculture is that of horticulture. Horticulture includes producing, processing and marketing fruits, vegetables, and ornamental plants (turf grass, flowers, shrubs and trees grown and used for their beauty). Landscape horticulture includes the production, marketing and maintenance of landscape plants. Ranging from simple garden design to more sophisticated architectural designs, landscaping involves the organizing and enriching outdoor spaces by placing plants and structures in an agreeable and useful relationship with nature. Sustainable horticulture is dependent on a well maintained biodiversity. Hence, biodiversity conservation is an integral aspect of horticulture with a major focus on plant conservation and landscape restoration.

The three-year diploma course in Sustainable Horticulture and Landscaping is aimed at producing graduates who are competent to plan, develop and manage sustainable plant nurseries and landscapes in a variety of contexts (commercial, community, and amenity), while ensuring sustainable and effective use of natural resources. It will empower young people with the necessary skills set to create and maintain sustainable environments within the various strata of South African society. The first two years are spent in formal study while the third year involves a six-month period of structured practical learning at the department's School of Horticulture training facility and a further six-month integrated learning project with suitable industry mentors developing the required competencies.

## 4.1 Programme Structure (3 Year)

| Code | Modules | Level of Study | Assessment Method | SAQA Credits | Pre-requisite Modules |
|---|---|---|---|---|---|
| PLSA101* | Plant Studies 1A | 1 | Ex | 12 | |
| HRTA101* | Horticulture 1A | 1 | Ex | 16 | |
| BSMA101* | Business Management 1A | 1 | Ex | 8 | |
| EGMA101 | Estates & Grounds Management 1A | 1 | Ex | 8 | |
| GRMS101 | Growth Media Studies | 1 | Ex | 8 | |
| CSTN101 | Cornerstone 101 | 1 | Ex | 12 | |
| | | | | | |
| PLSB101* | Plant Studies 1B | 2 | Ex | 12 | Plant Studies 1A |
| HRTB101* | Horticulture 1B | 2 | Ex | 12 | Horticulture 1A |
| BSMA101* | Business Management 1B | 2 | Ex | 8 | |
| EGMB101 | Estates & Grounds Management 1B | 2 | Ex | 8 | Estate & Grounds Management 1A |
| ECLG101 | Ecology | 2 | Ex | 8 | |
| ICTL101 | • Information and Communication Technology Literacy and Skill (IGE) | 2 | CA | 8 | |
| | | | | | |
| PLSA201* | Plant Studies 2A | 3 | Ex | 8 | Plant Studies 1B |
| HRTA201* | Horticulture 2A | 3 | Ex | 12 | Horticulture 1B |
| BSMA201* | Business Management 2A | 3 | Ex | 8 | Business Management 1A & 1B |
| IPDA201 | Integrated Pest & Disease Management 2A | 3 | Ex | 8 | |
| EVSA201 | Environmental Sustainability 2A | 3 | Ex | 8 | Ecology |
| SLPA201* | Sustainable Landscape Planning & Practice 2A | 3 | Ex | 12 | |
| MWMU101 | • Me, My World, My Universe (IGE) | 3 | CA | 8 | |
| | | | | | |
| PLSB201* | Plant Studies 2B | 4 | Ex | 12 | Plant Studies 2A |
| HRTB201* | Horticulture 2B | 4 | Ex | 8 | Horticulture 2A |
| ESBM201* | Entrepreneurship & Small Business Management 2B | 4 | Ex | 8 | Business Management 2A |
| IPDB201 | Integrated Pest & Disease Management 2B | 4 | Ex | 8 | Integrated Pest & Disease Management 2A |
| EVSB201 | Environmental Sustainability 2B | 4 | Ex | 8 | Environmental Sustainability 2A |
| SLPB201* | Sustainable Landscape Planning & Practice 2B | 4 | Ex | 12 | Sustainable Landscape Planning & Practice 2A |
| | | | | | |
| PLSA301#* | Plant Studies 3A (DUT) | 5 or 6 | CA | 16` | Plant Studies 2B |
| HRTA301#* | Horticulture 3A (DUT) | 5 or 6 | CA | 16 | Horticulture 2B |
| HLOA301#* | Horticultural and Landscape Operations 3A (DUT) | 5 or 6 | CA | 8 | Entrepreneurship & Small Business Management 2B |
| SLPA301#* | Sustainable Landscape Planning & Practice 3A (DUT) | 5 or 6 | CA | 16 | Sustainable Landscape Planning & Practice 2B |

| | | | | | |
|---|---|---|---|---|---|
| WWRK101<br>LDSH101 | Choice of one from below:<br>• World of Work (IGE)<br>• Leadership (IGE) | 5 or 6 | <br>CA<br>CA | 8 | |
| ASCE101 | • Community Development & Engagement (FGE) | 5 or 6 | CA | 12 | |
| | | | | | |
| PLSB301#* | Plant Studies 3B (Industry) | 5 or 6 | CA | 12 | Plant Studies 2B |
| HRTB301#* | Horticulture 3B (Industry) | 5 or 6 | CA | 12 | Horticulture 2B |
| HLOB301#* | Horticultural and Landscape Operations 3B (Industry) | 5 or 6 | CA | 8 | Entrepreneurship & Small Business Management 2B |
| SLPB301#* | Sustainable Landscape Planning & Practice 3B (Industry) | 5 or 6 | CA | 12 | Sustainable Landscape Planning & Practice 2B |

**KEY:**

Assessment: Ex = examinable; CA = Continuous Assessment
Numbers 1 to 4 indicates the year of study, "a"= Semester 1, "b"=Semester 2 (eg 2b=Second year, Semester 2),
*These are major modules
# These are WIL and final level modules.
A Pre-Req (prerequisite) means this module must be passed prior to registration for the subsequent module.
IGE = Institutional General Education module
FGE = Faculty General Education Module, IGE = Institutional General Education module

### 4.2 Programme Information

This information must be read in conjunction with the programme rules that follow.

### 4.2.1 Academic Integrity

Refer to the DUT General Rules pertaining to academic integrity G13(1)(o) —covering falsification of academic records, plagiarism and cheating. These will be enforced wherever necessary to safeguard the worthiness of our qualifications, and the integrity of the Faculty of Applied Sciences at DUT.

### 4.2.2 Code of Conduct for Students

A professional code of conduct pertaining to behaviour, appearance, personal hygiene and dress shall apply to all students registered with the Faculty of Applied Sciences, at all times. Refer to Programme Rule 5.3.8 below.

### 4.2.3 Attendance

Students are expected to achieve 100% attendance for all planned academic activities as these are designed to provide optimal support for the required competency. Students are expected to be punctual for all academic activities. Penalties may be invoked for late attendance. Refer to Programme Rule 5.3.9 below.

### 4.2.4 Work Integrated Learning (WIL)

The compulsory WIL component of this programme comprises 12 months. Refer to Programme Rule 5.3.7 below.

### 4.2.5 Assessment and Moderation

Students are expected to work steadily through the period of registration in order to achieve the highest results possible.

Assessment details are listed under each subject at the back of this handbook.

Assessments could include a variety of testing methods including, but not limited to, written tests, oral tests, theoretical or practical examinations, group work and assignments.

Assignments must be handed personally to the lecturer who will record their receipt. Late submission will be penalised.

In the case of a continuous assessment subject (a subject which has no final examinations or supplementary examinations) opportunities for reassessment are provided for students who fail assessments. These are stipulated in the relevant study guide.

Moderation follows the DUT Assessment Policy stipulations. Refer to Programme Rule 5.3.9 below.

### 4.2.6 Employment Opportunities

The Horticulture sector is broad, diverse and multidisciplinary. In an emerging developing country such as South Arica there is an urgent demand for skilled graduates to create and conserve rich bio-diverse landscapes. There are seven broad sectors within the green economy that provide employment to our graduates. These are Nursery Production, Floriculture, Retail Garden Centres, Turf Grass Culture and Management, Conservation Horticulture, Amenity Horticulture and Landscape Design. Career opportunities are unlimited. Past alumni trained by the Durban University of Technology are leaders and innovators within the Green Industry. Horticulture and landscaping are truly portable skills and our qualifications recognized internationally. Our students have worked all over the world including Mozambique, Indian Ocean Islands, Florida USA, Australia, the UK and the Middle East.

### 4.2.7 Registration Periods:

January - The following groups will register in January:

All Semesters 1, 3 and 5 students

July - The following groups will register in July:

All Semesters 2, 4 and 6 students

## 4.3 Programme Rules

### 4.3.1 Minimum Admission Requirements

In addition to DUT Rule G7, the following minimum entrance requirements and the selection criteria outlined in Rule 4.3.2 will apply for applicants with reference to:-

**4.3.1.1** Academic Achievement

In line with the above, the applicants' school leaving academic achievement must comply with one of the following at the stated minimum ratings as outlined in the table below:

(i) A National Senior Certificate (NSC) with endorsement for a diploma/degree:

(ii) A Senior Certificate with matriculation exemption and the following modules at the stated minimum ratings:

(iii) A National Certificate (Vocational) Level 4 with statutory requirements for a diploma entrance and the following modules at the stated minimum ratings:

(iv)

| Compulsory Module | NSC Rating | SC | | NCV |
|---|---|---|---|---|
| | | HG | SG | |
| English (Home) OR English (1st Additional) | 4 | E | D | 50% |
| Mathematics OR Mathematical Literacy | 3 or 4, respectively | E | D | 50% |
| Life Sciences (or recognized equivalents) | 4 | E | D | 60% |

**4.3.1.2** Admission Requirements based on Work Experience, Age and Maturity; and Recognition of Prior Learning
The DUT Rules G7 (3), and G7 (8) respectively, will apply.

**4.3.1.3** Admission of International Applicants
The DUT's Admissions Policy for International Students and DUT Rules G4 and G7 (5) will apply.
International applicants must meet the equivalent programme minimum entrance requirements as stated above.

**4.3.1.4** Admission of Applicants from Other Institutions
In addition to the relevant DUT Rules a transferring applicant will only be accepted if there are places available and the student has met the applicable entrance requirements of the university.

### 4.3.2 Selection Criteria *(Programme Rule)*

In addition to the Minimum Admission Requirements (Rule 4.3.1), the following selection process will determine acceptance into the programme:

- All applicants must apply through the Central Applications Office (CAO).
- Initial shortlisting for selection is based on the applicant's academic performance in Grade 12 (Grade 11 or Grade 12 trial marks will be used for current matriculants). Applicants who meet the above criteria will be ranked based on performance according to the table below:-

| Assessment | Weighting |
|---|---|
| Academic achievement<br>• Average percentage of all compulsory modules (refer to 4.3.1.1) | 100% |

- Provisional acceptance will be given to selected applicants awaiting National Senior Certificate* (NSC). If the final Grade 12 results do not meet the minimum entrance requirements, this provisional acceptance will be withdrawn.
- Final selection for placement will be based on results of the above ranking process. Where spaces are limited, preference will be given to applicants with minimum achievement rating of 5 for Geography OR Agricultural Science OR Engineering & Graphic Design.
  (refer to DUT Rule G5).

### 4.3.3 Pass Requirements

In addition to the DUT Rules G12, G14 and G15, the following programme rules apply:

4.3.3.1 In addition to DUT Rule G12 (1) students must obtain a sub-minimum of 50% for the practical component in order to qualify for admission to the examination in that module. Refer to Table 4.1 Programme Structure.

4.3.3.2 A student is required to attend scheduled practicals to be granted a course mark. Field trips form part of practical assessments. Make-up assessments will only be granted to deserving cases in which the student must have had at least 80% attendance.

**4.3.4 Progression Rules**

In addition to the DUT Rule G16, and all prerequisite modules as identified in the Table 4.1 Programme Structure, the following programme rules apply:-

4.3.4.1 **Promotion from Semester 1 to Semester 2:**

Students must pass 4 out of 6 modules, two of which must be major modules: Plant Studies 1A, Horticulture 1A or Business Management 1A

4.3.4.2 **Promotion from Semester 2 to Semester 3**

Students must pass 4 out of 6 modules, two of which must be major modules: Plant Studies 1B, Horticulture 1B or Business Management 1B

4.3.4.3 **Promotion from Semester 3 to Semester 4**

Students must pass 5 out of 7, two of which must be major modules: Plant Studies 2A, Horticulture 2A, Business Management 2A or Sustainable Landscape Planning & Practice 2A

4.3.4.5 **Promotion from Semester 4 to Semester 5**

Students must have passed ALL modules in preceding semesters, before proceeding to Semester 5.

4.3.4.6 **Promotion from Semester 5 to Semester 6**

Students must pass a minimum of 4 out of 6 modules, three of which must be major modules: Plant Studies 3A, Horticulture 3A, Horticultural and Landscape Operations 3A or Sustainable Landscape Planning & Practice 3A

**NB:** Students must pass the Cornerstone module and all stipulated FGE and IGE modules before the award of the Diploma.

**4.3.5. Exclusion Rules**

In addition to DUT Rule G17, a student in study period 1 who fails 50% or more modules with an average of less than 40% in each of the failed modules is not permitted to reregister in this programme. Deregistration from any modules is subject to the provision of DUT Rule G6.

**4.3.6 Interruption of Studies**

Should a student interrupt their studies by more than three (3) years, the student will need to apply to the department for permission to reregister and will need to prove currency of appropriate knowledge prior to being given permission to continue with registration.

**4.3.7 Work Integrated Learning Rules *(Programme Rule)***

The DUT Rule G28 applies. (Detailed guidelines which are contained in the portfolio file handed to students on completion of their registration for the first semester of Work Integrated Learning. Registration is only complete when an ET2 form has been submitted to the Department and the appropriate registration fee has been paid.)

4.3.7.1 Registration must be completed during the annual registration period. Students must inform the Head of Department within two weeks of any changes affecting their training (eg change of employer or contact address). Any such changes must be submitted to the Department by completing the appropriate "Change of Work Integrated Learning Details" form which may be found in the portfolio file.

4.3.7.2 Where a student submits written proof of Work Integrated Learning received before registering for the Diploma: Sustainable Horticulture and Landscaping, a maximum period of six months (one semester) of Work Integrated Learning may be credited after meeting RPL requirements and departmental panel requirements.

**4.3.7.3** This programme requires all students/candidates to undergo one semester of structured Work Integrated Learning at DUT under the School of Horticulture and one semester in industry. All prescribed compulsory and elective modules together with the prescribed School of Horticulture (one semester) and Work Integrated Learning component (one semester must be passed in order to obtain the qualification.

**4.3.7.4** In terms of Work Integrated Learning placement:

(i) The employer must be accredited by the Institution for the purposes of Work Integrated Learning.

(ii) A Work Integrated Learning agreement creates a separate contract between the "employer" and the student/candidate.

(iii) The department may assist the student in obtaining suitable Work Integrated Learning placement.

### 4.3.8 Code of Conduct

In addition to the Student Code of Conduct in the DUT General Handbook for Students, and the relevant requirements as stated in the appropriate Study Guides, the following rules apply:

**4.3.8.1 Conduct of Students in Practical Facilities**

Strict adherence to instructions issued by technical, supervisory or academic staff is required due to the need to ensure effective and safe practice in these facilities. Misconduct or disregard for instructions will be referred to the relevant disciplinary procedure.

**4.3.8.2 Uniforms**

Students must adhere to instructions issued by technical, supervisory or academic staff regarding the specific dress code required during practicals. Non-compliance will result in the student being denied access to the venue.

### 4.3.9 Attendance and Assessment *(Programme Rule)*

**4.3.9.1** A student who, for any valid reason (Refer to Programme Rule 4.3.9.2), is absent from planned academic activity must provide written proof of the reason for the absence to the lecturer concerned, within five (5) working days of returning to the institution in order to be considered for a special assessment.

**4.3.9.2** The DUT Rule G13(3)(a) which refers to special examinations also refers to special assessments set within departments for students who have missed coursework assessments. In these cases the department will determine the validity of the student's reason for not taking the assessment, and the nature of the special assessment.

### 4.3.10 Health and Safety *(Programme Rule)*

Students must adhere to all Health and Safety regulations both on campus and off campus at all times. Failure to do so will be treated as a breach of discipline. Refer to the appropriate Health and Safety policies.

### 4.3.11. General Education Modules *(Programme Rule)*

Students must comply with the university's General Education requirement. This includes the following standalone General Education modules which comprise of:

- 1 Compulsory DUT Cornerstone 101 module
- 1 Compulsory Faculty General Education module
- 3 Elective Institutional General Education modules (Students will take elective modules as indicated in Table 4.1 Programme Structure)

## 5. NATIONAL DIPLOMA: HORTICULTURE (NDHRT2)

**Purpose of Qualification**

The purpose of this programme is to produce graduates who are competent to plan, develop and manage sustainable plant nurseries and landscapes in a variety of contexts (commercial, community, and amenity), while ensuring sustainable use of natural resources and minimising harm to the environment.

### 5.1 PROGRAMME STRUCTURE (3 YEAR)

| Code | Subjects | Year/ Sem of Study | Assessment Method | NATED Credits | Pre-requisite Subjects |
|---|---|---|---|---|---|
| GMET101* | Growth Media Technology I | Ia | Ex | 0.070 | |
| HORT102* | Horticulture | Ia | Ex | 0.090 | |
| PMAS101* | Plant Material Studies I | Ia | Ex | 0.090 | |
| SPLN101 | Site Planning I | Ia | Ex | 0.070 | |
| SUMN102* | Supervisory Management I | Ia | Ex | 0.090 | |
| HMEC101 | Horticultural Mechanisation I | Ia | Ex | 0.070 | |
| TGCL101 | Turf-grass Culture I | Ib | Ex | 0.070 | |
| ESTD102 | Environmental Studies I | Ib | Ex | 0.090 | |
| HORT202* | Horticulture II | Ib | Ex | 0.133 | Horticulture I |
| HMNT203* | Horticultural Management II | Ib | Ex | 0.132 | Supervisory Management I |
| PMAS201* | Plant Material Studies II | Ib | Ex | 0.095 | Plant Material Studies I |
| PLPR201 | Plant Protection II | 2 | Ex | 0.125 | |
| ESTD201 | Environmental Studies II | 2 | Ex | 0.125 | Environmental Studies I |
| HORT302*# | Horticulture III | 2 | Ex | 0.300 | Horticulture II |
| PMAS301*# | Plant Material Studies III | 2 | Ex | 0.150 | Plant Materials Studies II |
| HPRM301*# | Horticultural Production Management III | 2 | Ex | 0.300 | Horticultural Management |
| HRTP201/2 | Horticulture Practice II A/B | 3 | CA | 0.500 | See Rule 4.3.7.5 |
| HTPS201/2 | Horticulture Practice II A/B (SoH) | 3 | CA | 0.500 | See Rule 4.3.7.5 |

**KEY:** The three major subjects at each level are indicated with an * next to the subject code.
Assessment: Ex = examinable; CA = Continuous Assessment
Numbers I to 3 indicates the year of study, "a"= Semester 1, "b"=Semester 2 (eg 1b=First year, Semester 2)
# These subjects are final level subjects.
A Pre-Req (prerequisite) means this subject must be passed prior to registration for the subsequent subject

### 5.2 PROGRAMME INFORMATION

This information must be read in conjunction with the programme rules that follow.

#### 5.2.1. Academic Integrity

Refer to the DUT General Rules pertaining to academic integrity G13 (1) (o) —covering falsification of academic records, plagiarism and cheating. These will be enforced wherever necessary to safeguard the worthiness of our qualifications, and the integrity of the Faculty of Applied Sciences at DUT.

### 5.2.2. Code of Conduct for Students

A professional code of conduct pertaining to behaviour, appearance, personal hygiene and dress shall apply to all students registered with the Faculty of Applied Sciences, at all times. Refer to Programme Rule 5.3.8 below.

### 5.2.3. Attendance

Students are expected to achieve 100% attendance for all planned academic activities as these are designed to provide optimal support for the required competency. Students are expected to be punctual for all academic activities. Penalties may be invoked for late attendance. Refer to Programme Rule 5.3.9 below.

### 5.2.4 Work Integrated Learning (WIL)

The compulsory WIL component of this programme comprises 12 months. Refer to Programme Rule 5.3.7 below.

### 5.2.5. Assessment and Moderation

Students are expected to work steadily through the period of registration in order to achieve the highest results possible.

Assessment details are listed under each subject at the back of this handbook.

Assessments could include a variety of testing methods including, but not limited to, written tests, oral tests, theoretical or practical examinations, group work and assignments.

Assignments must be handed personally to the lecturer who will record their receipt. Late submission will be penalised.

In the case of a continuous assessment subject (a subject which has no final examinations or supplementary examinations) opportunities for reassessment are provided for students who fail assessments. These are stipulated in the relevant study guide.

Moderation follows the DUT Assessment Policy stipulations. Refer to Programme Rule 5.3.9 below.

### 5.2.6. Employment Opportunities

The Horticulture sector is broad, diverse and multidisciplinary. In an emerging developing country such as South Arica there is an urgent demand for skilled graduates to create and conserve rich bio-diverse landscapes. There are seven broad sectors within the green economy that provide employment to our graduates. These are Nursery Production, Floriculture, Retail Garden Centres, Turf Grass Culture and Management, Conservation Horticulture, Amenity Horticulture and Landscape Design. Career opportunities are unlimited. Past alumni trained by the Durban University of Technology are leaders and innovators within the Green Industry. Horticulture and landscaping are truly portable skills and our qualifications recognized internationally. Our students have worked all over the world including Mozambique, Indian Ocean Islands, Florida USA, Australia, the UK and the Middle East.

### 5.2.7 Registration Periods:

January - The following group will register in January:

All 3rd year experiential learning students

## 5.3 PROGRAMME RULES

### 5.3.1 Minimum Admission Requirements

No students will be admitted under this programme in 2018

### 5.3.2. Selection Criteria

No students will be admitted under this programme in 2018

### 5.3.3. Pass Requirements

In addition to the DUT Rules G12, G14 and G15, the following programme rules apply:

**5.3.3.1** In addition to DUT Rule G12(1) students must obtain a sub- minimum of 50% for the practical component in order to qualify for admission to the examination in that subject. Refer to Table 5.1 **Programme Structure.**

**5.3.3.2** A student is required to attend all field trips and scheduled practicals to be granted a course mark. *(Approved by Senate Rules Comm wef 2014/10)*

### 5.3.4. Re-registration Rules

In addition to the DUT Rule G16, and all prerequisite subjects as identified in the Programme Structure (5.1), the following programme rules apply:-

**5.3.4.1** **Promotion from Semester 2 to Year 2:**
Students must pass a minimum of 4 out of the 5 second semester subjects of which two must be major subjects. (Refer to Table 5.1Programme Structure)
*(Approved by Senate Rules Comm wef 2014/10)*

**5.3.4.2** In addition, a student must pass a minimum of eight first and second semester subjects combined

**5.3.4.3** A student not complying with the above may be permitted to re- register for outstanding first and second semester subjects with the approval of the departmental assessment committee.

### 5.3.5 Exclusion Rules

In addition to DUT Rule G17, a first semester/year student who fails three or more subjects with a final result of less than 40% in each subject is not permitted to reregister in this programme. Deregistration from any subjects is subject to the provision of DUT Rule G6.
*(Approved by Senate Rules Comm wef 2014/10)*

### 5.3.6 Interruption of Studies

In accordance with DUT Rule G21A(b), the minimum duration for this programme will be 3 years of registered study and the maximum duration will be 5 years of registered study, including any periods of WIL. Should a student interrupt their studies by more than three (3) years, the student will need to apply to the department for permission to reregister and will need to prove currency of appropriate knowledge prior to being given permission to continue with registration.
*(Approved by Senate Rules Comm wef 2014/10)*

### 5.3.7 Work Integrated Learning Rules

In addition to the DUT Rule G28, the following programme rules apply: (Detailed guidelines which are contained in the portfolio file handed to students on completion of their registration for the first semester of Work Integrated Learning. Registration is only complete when an ET2 form has been submitted to the Department and the appropriate registration fee has been paid.)

**5.3.7.1** Registration must be completed during the annual registration period. Students must inform the Head of Department within two weeks of any changes affecting their training (eg change of employer or contact address). Any such changes must be submitted to the Department by completing the appropriate "Change of Work Integrated Learning Details" form which may be found in the portfolio file.

**5.3.7.2** Where a student submits written proof of Work Integrated Learning received before registering for the ND: Horticulture, a maximum period of six months (1 semester) of Work Integrated Learning may be credited after scrutiny by a departmental panel. NB- If a credit is granted, the student must still register for that period.

**5.3.7.3** This programme requires all students/candidates to undergo one semester of structured Work Integrated Learning at DUT under the School of Horticulture and one semester in industry. All prescribed compulsory and elective subjects and the prescribed Work Integrated Learning component must be passed in order to obtain the qualification.

**5.3.7.4** In terms of Work Integrated Learning placement:

(i) The employer must be accredited by the Institution for the purposes of Work Integrated Learning.

(ii) A Work Integrated Learning agreement creates a separate contract between the "employer" and the student/candidate.

(iii) The department will assist the student in obtaining suitable Work Integrated Learning placement.

**5.3.7.5** A student who is registering for the requisite one semester of structured Work Integrated Learning at DUT School of Horticulture:

(i) is required to have passed all first year subjects (Semester 1 and 2) and

(ii) is required to have passed a minimum of three second year subjects of which two must be major subjects.

iii) In addition to (i) and (ii) the student will not be allowed to register at DUT for outstanding second year subjects whilst registered for structured work integrated learning.
*(Approved by Senate wef 2011/05)*

### 5.3.8 Code of Conduct

In addition to the Student Code of Conduct in the DUT General Handbook for Students, and the relevant requirements as stated in the appropriate Study Guides, the following rules apply:

#### 5.3.8.1 Conduct of Students in Practical Facilities

Strict adherence to instructions issued by technical, supervisory or academic staff is required due to the need to ensure effective and safe practice in these facilities. Misconduct or disregard for instructions will be referred to the relevant disciplinary procedure. *(Approved by Senate Rules Comm wef 2014/10)*

#### 5.3.8.2 Uniforms

Students must adhere to instructions issued by technical, supervisory or academic staff regarding the specific dress code required during practicals. Non-compliance will result in the student being denied access to the venue.
*(Approved by Senate Rules Comm wef 2014/10)*

### 5.3.9 Attendance and Assessment

5.3.9.1 A student who, for any valid reason (Refer to Programme Rule 5.3.9.2 below), is absent from a particular practical or test, must provide written proof of the reason for the absence to the lecturer concerned, within five (5) working days of returning to the institution in order to be considered for a special assessment.
*(Approved by Senate Rules Comm wef 2014/10)*

5.3.9.2 The DUT Rule G13 (3) (a) which refers to special examinations also refers to special assessments set within departments for students who have missed coursework assessments. In these cases the department will determine the validity of the student's reason for not taking the assessment, and the nature of the special assessment. *(Approved by Senate Rules Comm wef 2014/10)*

### 5.3.10 Health and Safety

Students must adhere to all Health and Safety regulations both while at DUT and in WIL placements. Failure to do so will be treated as a breach of discipline. Refer to the appropriate Health and Safety policies.
*(Approved by Senate Rules Comm wef 2014/10)*

## 6. NATIONAL DIPLOMA: HORTICULTURE (EXTENDED CURRICULUM) (NDHTF1)

**Purpose of Qualification**

The purpose of the ND: Horticulture is to produce graduates who are competent to plan, develop and manage sustainable plant nurseries and landscapes in a variety of contexts (commercial, community, amenity) while ensuring sustainable use of natural resources and minimising harm to the environment.

This qualification is offered through a three year programme (refer to item 4 above), or through an augmented curriculum - offered over a minimum of four years of study — which is devised to enhance student development and to improve the student's chances of successful completion.

## 6.1 PROGRAMME STRUCTURE (4 YEAR)

| Code | Subjects | Year/Sem of Study | Assessment Method | NATED Credits | Pre-requisite Subjects |
|---|---|---|---|---|---|
| PMAS101* | Plant Material Studies I | 1annual | Ex | 0.045 | |
| SUMN102* | Supervisory Management I | 1annual | Ex | 0.045 | |
| HORT102* | Horticulture I | 1a | Ex | 0.050 | |
| HTTQ101 | Horticultural Techniques I | 1a | CA | 0.500 | |
| HORT202* | Horticulture II | 1b | Ex | 0.080 | Horticulture I |
| HTTQ201 | Horticultural Techniques II | 1b | CA | 0.500 | Horticultural Techniques I |
| GMET101 | Growth Media Technology I | 2a | Ex | 0.030 | |
| HMEC101 | Horticultural Mechanisation I | 2a | Ex | 0.035 | |
| SPLN101 | Site Planning I | 2a | Ex | 0.030 | |
| ESTD102 | Environmental Studies I | 2b | Ex | 0.040 | |
| HMNT203* | Horticultural Management II | 2b | Ex | 0.070 | Supervisory Management I |
| PMAS201* | Plant Material Studies II | 2b | Ex | 0.040 | Plant Material Studies I |
| TGCL101 | Turf-grass Culture I | 2b | Ex | 0.035 | |
| PLPR201 | Plant Protection II | 3 | Ex | 0.050 | Environmental Studies I |
| ESTD201 | Environmental Studies II | 3 | Ex | 0.050 | Horticulture II |
| HORT302*# | Horticulture III | 3 | Ex | 0.149 | Plant Materials Studies II |
| PMAS301*# | Plant Material Studies III | 3 | Ex | 0.075 | Horticultural Management II |
| HPRM301*# | Horticultural Production Management III | 3 | Ex | 0.176 | Environmental Studies I |
| HRTP201/2 | Horticulture Practice II A/B | 4 | CA | 0.500 | See Rule 4.3.7.5 |
| HTPS201/2 | Horticulture Practice II A/B (SoH) | 4 | CA | 0.500 | See Rule 4.3.7.5 |

**KEY:** The three major subjects at each level are indicated with an * next to the subject code. Assessment: Ex = examinable; CA = Continuous Assessment
Numbers 1 to 4 indicates the year of study, "a"= Semester 1, "b"=Semester 2 (eg 1b=First year, Semester 2)
# These subjects are final level subjects.
A Pre-Req (prerequisite) means this subject must be passed prior to registration for the subsequent subject.

## 6.2 PROGRAMME INFORMATION

Refer to 5.2 Programme Information under the ND: Horticulture.

## 6.3 PROGRAMME RULES

Refer to 5.3 Programme Rules under the ND: Horticulture and the following rules which apply specifically to ND: Horticulture (ECP).

### 6.3.1 Minimum Admission Requirements

No students will be admitted under this programme in 2018.

**6.3.2 Selection Criteria**

No students will be admitted under this qualification in 2018.

**6.3.3 Pass Requirements**

Refer to Rule 5.3.3 which is applicable to both the ND and ND (ECP).

**6.3.4 Re-registration Rules**

In addition to the DUT Rule G16, Programme Rules 5.3.4.3 and 5.3.4.4 above, and all prerequisite subjects as identified in the Programme Structure (6.1), the following programme rules apply:-

**6.3.4.1 Promotion from Year 1 (ECP) to Year 2: Semester 1 (ECP):**

The following subjects must be passed before proceeding to the next level:

- Horticulture Techniques I (HTTQ101)
- Horticulture Techniques II (HTTQ201)

In addition, at least two of the subjects listed below must also be passed:

- Horticulture I (HORT102)
- Supervisory Management I (SUMN102)
- Plant Material Studies I (PMAS101)

**6.3.4.2** Those students who do not comply with the above rule may need to apply for re-registration in the ECP to the Department of Horticulture.

6.3.5 **Exclusion Rules**

Refer to Rule 5.3.5 which is applicable to both the ND and ND (ECP).

6.3.6 **Interruption of Studies**

In accordance with Rule G21A(b), the minimum duration for this programme will be 4 years of registered study and the maximum duration will be 5 years of registered study, including any periods of WIL. Should a student interrupt their studies by more than three (3) years, the student will need to apply to the department for permission to reregister and will need to prove currency of appropriate knowledge prior to being given permission to continue with registration.

*(Approved by Senate Rules Comm wef 2014/10)*

6.3.7 **Work Integrated Learning Rules**

Refer to Rule 5.3.7 which is applicable to both the ND and ND (ECP).

6.3.8 **Code of Conduct**

Refer to Rule 5.3.8 which is applicable to both the ND and ND (ECP).

6.3.9 **Attendance and Assessment**

Refer to Rule 5.3.9 which is applicable to both the ND and ND (ECP).

6.3.10 **Health and Safety**

Refer to Rule 5.3.10 which is applicable to both the ND and ND (ECP).

## 7. BACHELOR OF TECHNOLOGY: HORTICULTURE (BTHRT1)

### 7.1 PROGRAMME STRUCTURE

| Code | Subjects | Year/Sem of Study | Assessment Method | NATED Credits | Pre-requisite Subjects |
|---|---|---|---|---|---|
| HPRM401 | Horticultural Production Management IV | Annual | Ex | 0.400 | Hort. Management III |
| HPTC401 | Horticultural Production Techniques IV | Annual | Ex | 0.400 | Horticulture III |
| RSMT101 | Research Methodology | Annual | CA | 0.200 | |

**KEY:** * Assessment: Ex = examinable; CA = Continuous Assessment
A Pre-Req (prerequisite) means this subject must be passed prior to registration for the subsequent subject.

### 7.2 PROGRAMME INFORMATION

The BT: Horticulture will be offered on a part-time basis where the subjects Horticultural Production Management IV and Horticultural Production Techniques IV will be offered each alternate year. The subject Research Methodology will be offered every year.

### 7.3 PROGRAMME RULES

#### 7.3.1 Minimum Admission Requirements

In addition to Rule G7 and G23A (a) (1), applicants without the subjects Horticultural Production Management III and Horticulture III, are required to complete these subjects prior to registration for the BTech: Horticulture. *(Approved by Senate Rules Comm wef 2014/10)*

#### 7.3.2 Selection Criteria

In addition to the Minimum Admission Requirements (Rule 7.3.1), the following selection process will determine placement in the programme:

- Applicants who meet the above criteria will be invited to undergo an interview.
- Final selection for placement will be based on performance in the National Diploma, the interview and available places (refer to DUT RuleG5).
  *(Approved by Senate Rules Comm wef 2014/10)*

#### 7.3.3 Pass Requirements

The DUT Rules G12, G14 and G15 apply.

#### 7.3.4 Re-registration Rules

The DUT Rule G16 applies.
All BTech Students will register in January:

- Horticultural Production Management IV OR
- Horticultural Production Techniques IV (offered each alternate year) AND
- Research Methodology.

**7.3.5 Exclusion Rules**

The DUT Rules G17 and G23 (A) (a) (4) apply.

**7.3.6 Interruption of Studies**

In accordance with Rule G23A (a), the minimum duration for this programme will be 2 year of registered study and the maximum duration will be 2 years of registered study, including any periods of WIL. Should a student interrupt their studies by more than three (3) years, the student will need to apply to the department for permission to reregister and will need to prove currency of appropriate knowledge prior to being given permission to continue with registration.

## 8. SERVICED SUBJECTS

The Department of Horticulture's rules apply to all serviced subjects. The following subjects may be serviced externally to this department.

| Department | Subject | Subject Code |
|---|---|---|
| Management and Entrepreneurial Studies | Horticultural Production Management 3 | HPRM301 |
| | Supervisory Mgt 1 | SUMN102 |
| TBA | Research Methodology | RSMT101 |

## 9. SHORT COURSES

This programme does not currently offer any short courses.

## 10. SUBJECT CONTENT

**NB**: Students to read this section in conjunction with the relevant Study guides.

### 10.1 DIPLOMA IN SUSTAINABLE HORTICULTURE AND LANDSCAPING

**DISLD1**

**HORTICULTURE 1A (HRTA101)**

**CONTACT TIME:** Theory (4)
Practical (2)

**ASSESSMENT**

**Course Mark:**
Theory: 50%
Assignment: 25%
Practicals: 25%

**Examination:** 1 x 3 hour paper

**Final Mark:** Course Mark (40%) + Examination Mark (60%)

**SYLLABUS:** This module enables the student to select, propagate and culture a range of plant materials through sexual and asexual propagation methods while practicing the principles of sustainability. Upon completion of this module the student will be able to:
Understand the uses of plants, utilize knowledge of sanitary practices in horticulture, demonstrate and apply knowledge of sexual plant propagation, demonstrate and apply knowledge of asexual plant propagation and maintain newly propagated plant material.

**HORTICULTURE 1B (HRTB101)**

**CONTACT TIME:** Theory (4)

**ASSESSMENT**

**Course Mark:** Theory: 80%
Assignment: 20%

**Examination:** 1 x 3 hour paper

**Final Mark:** Course Mark (40%) + Examination Mark (60%)

**SYLLABUS** Greenhouse Technology: Greenhouse structures, siting and orientation, Covering materials, Structural components; Growth Environmental Manipulation Systems and Specialized Growth Structures; Shadehouses and Covering materials, Planning, Layout and Development of a Community Nursery; Pathways for plant growth and development; Environmental factors affecting growth and development; Changes in plant life cycles – Flowers and fruit for profit and factors influencing its growth and development; Temperature: Measures of heat (heat energy), The greenhouse effect, Greenhouse heating and cooling and ventilation systems; Relative Humidity-RH:
Understanding and how it affects plant growth in the greenhouse environment, Measurement; Irrigation and Fertigation systems: Irrigation system selection for nurseries and landscaped gardens, wetting patterns, Advantages and possible problems in irrigation systems, Fertigation systems and chemical equipment, Types of fertilizers and fertilizer solutions

**HORTICULTURE 2A (HRTA201)**

**CONTACT TIME:** Theory (4)
Practical's (2)

**ASSESSMENT**

**Course Mark:** Theory: 50%
Assignment: 25%
Practical's: 25%

**Examination:** 1 x 3 our paper

**Final Mark**: Course Mark (40%) + Examination Mark (60%)

**SYLLABUS:** This module will equip the student with the required skills to produce the highest quality plant material within the context of commercial, amenity and community nurseries. The student will gain knowledge of the horticultural significance and profitability of each crop in the global, national and local context. The latest cultivation and production techniques for a wide range of ornamental conservation and community crops are presented.

Upon completion of this module the student will be able to:
Source, propagate and successfully culture ornamental, exotic and indigenous, plant material for use within the commercial, amenity and community sectors of the green industry, while demonstrating knowledge of sustainable practices.
Apply a broad knowledge base of all the major categories of plant production including;

- Floriculture,
- Annuals/Bedding plants.
- Foliage crops and Indoor plants

**HORTICULTURE 2B (HRTB201)**

**CONTACT TIME:** Theory (4)
Practical's (2)

**ASSESSMENT**

**Course Mark:**
Theory: 50%
Assignment: 25%
Practical's: 5%

**Examination:** 1 x 3 hour paper

**Final Mark**: Course Mark (40%) + Examination Mark (60%)

**SYLLABUS:** This module will equip the student with an understanding of Sustainable Horticulture and Ethnobotany and the importance of indigenous plants in local communities. The importance of conservation through cultivation is emphasized and the relevant legislative framework pertaining to nursery cultivation and plant collection is outlined.

Upon completion of this module the student will be able to:

Source, propagate and successfully culture ornamental exotic and indigenous, plant material for use within the commercial, amenity, conservation and urban greening sectors of the green industry, while demonstrating knowledge of sustainable practices.

Apply a broad knowledge base of all the major categories of plant production including;

- Exotic and Indigenous bulbous plant species
- Exotic and Indigenous medicinal and culinary herb
- Exotic and Indigenous tree species

**PLANT STUDIES 1A (PLSA101)**

**CONTACT TIME:** Theory (4);
Practical (2)

**ASSESSMENT**

**Course Mark:** Theory 50%;
Assignments; 25%
Practical Portfolio 25%

**Examination:** 1 x 3 hour paper

**Final Mark**: Course Mark (40%) + Examination Mark (60%)

**SYLLABUS:** This module will equip the student with knowledge of the internal and external structure of plants, (focusing more on the external morphology and plant adaptations to the environment), the identification of plants and their uses. During this module the student develops an appreciation for the role of plants in a complex and changing global ecosystem, and specifically the characteristics that make plants suitable for uses in different situations/ environments. Additionally, the student will be able to select plants for various situations based on their functional characteristics.

The module content includes:

- General External morphology of plants including physical structure of roots, stems, leaves, flowers, pollination and fertilization, and fruit is described.
- Descriptions of trees, shrubs, groundcovers, climbers, grasses annuals, aquatics, succulents, herbs, indoor plants, bulbs, vegetables and bedding plants are correctly demonstrated and applied in terms of morphology.
- Diversity of plant types, habitats and their natural relationships; the identification and roles of Indigenous, exotic and endemic plants are described
- The horticultural significance, application and role of Plant taxonomy, plant nomenclature and classification is explained.
- Knowledge of plants listed in the National Plant List is acquired in terms of Plant types, habitats, relationships, appearance (form, growth habit, colour texture, seasonal and visual effects)

**PLANT STUDIES 1B (PLSB101)**

**CONTACT TIME:** Theory (4)
Practical (2)

**ASSESSMENT**

**Course Mark:** Theory 50%
Assignments 25%
Practical Portfolio 25%

**Examination:** 1 x 3 hour paper

**Final Mark**: Course Mark (40%) + Examination Mark (60%)

**SYLLABUS:** This module will equip the student with a knowledge of the internal and external structure of plants, the identification of plants and their uses. Students will understand the physiological processes within plants and how these are influenced by changes in the environment and other environmental processes. During this module the student develops an appreciation for the role of plants in a complex and changing global ecosystem, and specifically the characteristics that make plants suitable for uses in different situations/ environments. Additionally, the student will be able to select plants for various situations based on their functional characteristics, with a knowledge of the physiological processes and internal structure.

The module content includes:

- Descriptions of trees, shrubs, groundcovers, climbers, grasses annuals, aquatics, succulents, herbs, indoor plants, bulbs, vegetables and bedding plants are correctly demonstrated and applied in terms of morphology.
- Diversity of plant types, habitats and their natural relationships; the identification and roles of Indigenous, exotic and endemic plants are described
- Knowledge of plants listed in the National Plant List is acquired in terms of Plant types, habitats, relationships, appearance (form, growth habit, colour texture, seasonal and visual effects)
- Internal Plant morphology including cytology (cell structure); histology (plant tissues) and anatomy is described.
- Plant physiology and metabolic processes including enzymes; water relations; mineral nutrition; photosynthesis and respiration are explained.
- Various functional factors affecting plant selection including climatic and microclimate conditions; edaphic conditions and growing media; water requirements and environmental stresses are discussed.

**PLANT STUDIES 2A (PLSA201)**

**CONTACT TIME**: Theory (4);
Practical (2)

**ASSESSMENT**

**Course Mark**: , Theory: 60%
Practicals: 40%

**Examination**: 1 x 3 hour paper

**Final Mark**: Course Mark (40%) + Examination Mark (60%)

**SYLLABUS** This module extends student's knowledge of plant taxonomy, plant identification and uses within the horticulture and landscape sector. Theoretical and practical aspects relating to a broad scope of planting and maintenance. Evolutionary development and life cycles of plants over geological time from lower (non-vascular) plant forms (viruses, bacteria, fungi, algae, bryophytes) to higher (vascular) plant forms (ferns, gymnosperms, angiosperms). Elementary floral diagrams are explained and appropriate plant families are explored in detail. Further Knowledge of plants listed in the National Plant List is acquired in terms of Plant types, habitats, relationships, appearance (form, growth habit, colour, texture, seasonal and visual effects). The selection and sustainable use of plant material are developed for a range of contexts.

**PLANT STUDIES 2B (PLSB201)**

**CONTACT TIME**: Theory (4);
Practical (2)

**ASSESSMENT**

**Course Mark**: Theory: 60%
Practicals: 40%

**Examination**: 1 x 3 hour paper

**Final Mark**: Course Mark (40%) + Examination Mark (60%)

**SYLLABUS** Theoretical and practical aspects relating to a broad scope of planting and maintenance. Plant growth responses as adaptive behaviour to the environment is explained in terms of hormones and plant growth regulators, Trophic responses to light (phototropism) and gravity (geotropism), photoperiodism, temperature. Further Knowledge of plants listed in the National Plant List is acquired in terms of plant types, habitats, relationships, appearance (form, growth habit, colour, texture, seasonal and visual effects). The selection and sustainable use of plant material are developed for a range of contexts. Arboriculture principles and practices are described in terms of optimal tree selection, maintenance and placement for a range of contexts. Specialised techniques available to achieve desired plant forms (e.g. bonsai, topiary).

**BUSINESS MANAGEMENT 1A (BSMA101)**

**CONTACT TIME:** Theory (4)

**ASSESSMENT**

**Course Mark:** Theory: 66.66%
Assignment: 33.33%

**Examination:** 1 x 3 hour paper

**Final Mark**: Course Mark (40%) + Examination Mark (60%)

**SYLLABUS:** This module will introduce students to terminology, concepts, principles and theories of business management, and to provide a critical perspective of the main function of management, in order to create a knowledge and understanding of the role and nature of business and how it is managed while practicing the principles of sustainability. Upon completion of this module the student will:
Understand and appreciate the value of studying management and its relevance to their field of study and society in general.

- Obtain a basic understanding of what managers do, and the competencies required to be a manager in the workplace.
- Demonstrate integrative knowledge and comprehension of concepts, principles, theories and practices in business management.
- Critically understand the key functions of management namely (planning, leading, organizing and controlling).

**BUSINESS MANAGEMENT 1B (BSMB101)**

**CONTACT TIME:** Theory (4)

**ASSESSMENT**

**Course Mark:** Theory: 66.66%
Assignment: 33.33%

**Examination:** 1 x 3 hour paper

**Final Mark:** Course Mark (40%) + Examination Mark (60%)

**SYLLABUS:** This module introduces students to the role, importance and interdependence of key functional areas of a business focusing specifically on marketing management and financial management in order to develop a critical and informed understanding of key concepts and practices that can be applied in the business world while practicing the principles of sustainability. This module incorporates communication as a critical component for success in the workplace. Upon completion of this module students will be able to:

- Gain knowledge and understanding of marketing management theory, concepts, principles and strategies that can be applied to practical business situations. Apply knowledge and understanding of financial management terminology, concepts, principles and tools to practical business and personal situations.
- Demonstrate and apply an understanding of theories, process and skills of communication in a business setting.
- Develop skills in measuring, analysing and solving business problems, interpreting data and information, and effective communication.

**BUSINESS MANAGEMENT 2A (BSMA201)**
**CONTACT TIME:** Theory (4)
**ASSESSMENT**
**Course Mark:** Theory Tests 70%
Practicals 30%
**Examination:** 1 x 2 hour paper
**Final Mark:** Course Mark (40%) + Examination Mark (60%)
**SYLLABUS;** the subject offering provides students with the managerial concepts (entrepreneurial) and ownership (entrepreneurial) principles required for a successful future in an industry.
Students will be introduced to the principles of business, and through case study analysis and real world examples, will learn how to apply these concepts to address problems and opportunities facing South Africa's job market. This programme is a multidisciplinary one and covers a range of business areas which includes business management, business ethics and sustainability, personal management, marketing and financial management.

**ENTREPRENEURSHIP & SMALL BUSINESS MANAGEMENT 2B (ESBM201)**
**CONTACT TIME:** Theory (4)
**ASSESSMENT**
**Course Mark:** Theory Tests 70%
Practicals 30%
**Examination:** 1 x 2 hour paper
**Final Mark:** Course Mark (40%) + Examination Mark (60%)
**SYLLABUS:** Entrepreneurship is an essential survival tool in today's competitive business environment. Management and Entrepreneurship have an impact on almost everything we see and do in today's world and are especially relevant in South Africa with the prevalence of small businesses. Students have the opportunity to take up an exciting career requiring talent and creativity as entrepreneurs (job makers).
These modules introduce the wider context of the importance of good business management. Students will learn how businesses identify and get to know their target markets, and then how to manage products and people to build and maintain a sustainable business. A comprehensive approach to all aspects of business management is offered in the subject and allows students to explore the extensive scope of the business function.

**SUSTAINABLE LANDSCAPE PLANNING & PRAC 2A (SLPA201)**
**CONTACT TIME:** Theory (4)
**ASSESSMENT**
**Course Mark:** Theory Tests 45%
Assignment: 10%
Practical portfolio 45%
**Examination:** Continual Assessment
**Final Mark:** Course mark (100%)
**SYLLABUS:** Students will develop an understanding of sustainable principles and practices in the context of designing, installing and maintaining environmentally-sound, functional, safe, economically viable, socially responsible and attractive landscape. They will acquire primary knowledge of the landscaping industry, phases of landscaping and the landscaping process, in community, commercial, domestic or amenity contexts. Students are introduced to the hard and soft landscape materials and develop foundational competence in basic site survey and planning techniques.

**SUSTAINABLE LANDSCAPE PLANNING & PRAC 2B (SLPB201)**
**CONTACT TIME:** Theory (4)
**ASSESSMENT**
**Course Mark:** Theory Tests 45%
Assignment: 10%
Practical portfolio 45%
**Examination:** Continual Assessment
**Final Mark:** Course mark (100%)
**SYLLABUS:** Various landscape design approaches, influences and aspects that contribute to the creation of aesthetically pleasing, and functionally landscapes are studied. The landscape design process is then activated in terms of developing design solutions based on site characteristics and client needs. Focus is placed on a) Establishing the project brief; b) Surveying and analysing the site; c) Developing a design concept; d) Drawing and presenting a basic landscape plan; and finally preparing estimates. An understanding of plant characteristics is emphasised in plant selection and various drawing and communication techniques are presented to enhance client and designer relationships.

**ESTATE & GROUNDS MANAGEMENT 1A (EGMA101)**

**CONTACT TIME:** Theory (4)
**P**ractical (2)

**ASSESSMENT**

| | | |
|---|---|---|
| **Course Mark:** | Theory: | 50% |
| | Practicals: | 25% |
| | Assignment: | 25% |
| **Examination:** | 1 x 3 hour paper | |
| **Final Mark**: | Course Mark (40%) + Examination Mark (60%) | |

**SYLLABUS:** This module provides students with the knowledge and skills required to manage and maintain estates and grounds to a high level of quality for a variety of contexts including amenity, sports, corporate and domestic use. The module forms an important part of developing and maintaining sustainable landscapes and sport and leisure facilities for the client and community. Upon completion of this module the student will be able to:

Utilise the necessary knowledge and skills to manage a variety of turf grass and planting environments in various contexts. Students will further equip themselves with the skills and knowledge to identify and use appropriate horticultural equipment in a safe and environmentally responsible manner.

**ESTATE & GROUNDS MANAGEMENT 1B (EGMB101)**

**CONTACT TIME:** Theory (4)

**ASSESSMENT**

| | | |
|---|---|---|
| **Course Mark:** | Theory: | 50% |
| | Assignment: | 50% |
| **Examination:** | 1 x 3 hour paper | |
| **Final Mark**: | Course Mark (40%) + Examination Mark (60%) | |

**SYLLABUS:** To equip the learner to maintain estates and grounds to a high level of quality for a variety of contexts including amenity, sports, corporate and domestic use. The module forms an important part of developing and maintaining sustainable landscapes for the client and community.

Upon completion of this module the student will be able to:

- Demonstrate knowledge of arboriculture practise including primary felling and stumping procedures and fundamental tree pruning techniques
- Demonstrate knowledge of the nature and significance of tree audits and valuations for amenity and estate work.
- Demonstrate knowledge of trees and the law (Removal of IAP's and public liability issues)
- Demonstrate knowledge of troubleshooting in terms of identification of problematic trees (invasive root systems, overhanging branches) and optimal tree selection and placement for amenity and estate and grounds use
- Demonstrate the ability to maintain and practise general care of shrubberies, hedges and annual and perennial flower beds through appropriate pruning and weeding techniques
- Demonstrate knowledge routine monthly estate maintenance tasks and programming techniques.
- Demonstrate knowledge Safety, Health, Environment and Risk management (Procedures and protocols. Safe use of hand and power equipment, Use of Personal Protective Equipment)
- Identification, safe use and handling of hand tools and small plant for a variety of horticultural operations (cultivation, mowing and pruning)

**GROWTH MEDIA STUDIES (GRMS101)**

**CONTACT TIME:** Theory (4)

**ASSESSMENT**

| | | |
|---|---|---|
| **Course Mark:** | Theory: | 50% |
| | Assignment: | 50% |
| **Examination:** | 1 x 3 hour paper | |
| **Final Mark**: | Course Mark (40%) + Examination Mark (60%) | |

**SYLLABUS:** This module enables the student to understand the structure and characteristics of the earth, soil and other growth media, the nature for associated water resources, and the concepts and processes that link these with other elements of the natural environment, while practicing the principles of sustainability.

Upon completion of this module the student will be able to:

- Demonstrate knowledge of the chemical and physical characteristics of soils and other growth media
- Demonstrate the ability to utilize soils and growth media to create optimal conditions to grow plants in the "field" as well as to grow plants in confined environments such as in pots/bags.
- Demonstrate knowledge of the structure of the atmosphere, the types of water resources and how these elements relate to soil.

**ECOLOGY (ECLG101)**

**CONTACT TIME:** Theory (4)

**ASSESSMENT**

| | | |
|---|---|---|
| **Course Mark:** | Theory | 60%, |
| | Assignments/ Project | 40% |
| **Examination:** | 1 x 3 hour paper | |
| **Final Mark**: | Course Mark (40%) + Examination Mark (60%) | |

**SYLLABUS:** This module enables the student to understand the elements of ecosystems and their dynamic interactions, to ensure that this knowledge is incorporated in practising sustainable horticulture and landscaping. The student will be able to see the relationships between the various elements of the physical, chemical and biological components in ecosystems and consider these in horticultural practices to ensure sustainability. In addition, there will be a focus on making environmental issues a fundamental consideration in everything that they do, in the workplace and in their lives in general to achieve sustainability. This module will broaden the understanding of ecological systems and the relationship to humans, and environmental issues and their relationship to larger issues globally and locally.

The module content includes:

- Bio-element Cycles (Relevant terminology; Importance of bio-element cycles to sustenance of life)
- The Atmosphere (Structure of the atmosphere; Weather and Climate)
- Water resources and soil water (Different types of water resources; Role of soil water in horticulture; The effects of water stresses and excess on plant growth are examined)
- Ecosystems and Biomes (Basic concepts and terminology; Food webs and food chains; Energy transfer; Decomposition; Global biome types)
- Biological communities (Interactions between species; Natural selection; Speciation; Species Richness and Species Diversity; Ecological succession)
- Population Dynamics (Factors influencing population size; Population Growth curves)

**INTEGRATED PEST & DISEASE MANAGEMENT 2A (IPDA201)**

**CONTACT TIME**: Theory (4)

**ASSESSMENT**

| | | |
|---|---|---|
| **Course Mark**: | Theory: | 80% |
| | Assignment: | 20% |
| **Examination**: | 1 x 3 hour paper | |
| **Final Mark**: | Course Mark (40%) + Examination Mark (60%) | |

**SYLLABUS** Entomology; Insect orders; Integrated Pest Management; Review of Major South African Pests and their control; Safe Use of Pesticides. Some disorders of plants that are induced by the environment such as adverse environmental conditions are also included in the area of plant health. These may include among others things, nutrient deficiency, chemical toxicity and water shortage and they present distinctive symptoms. The use of sustainable methods for insect control. The use of organic and natural chemicals/ methods for insect control.

**INTEGRATED PEST & DISEASE MANAGEMENT 2B (IPDB201)**

**CONTACT TIME**: Theory (4)

**ASSESSMENT**

| | | |
|---|---|---|
| **Course Mark**: | Theory: | 80% |
| | Assignment: | 20% |
| **Examination**: | 1 x 3 hour paper | |
| **Final Mark**: | Course Mark (40%) + Examination Mark (60%) | |

**SYLLABUS** Disease identification and control such as Bacteria, Fungi, Viruses, etc. Nematodes and their control; Weed identification and their control; Invasive plant identification, Control and Legislation; Understand and use of environmentally sustainable pest control measures. The use of organic and natural chemicals for pest and disease control.

**ENVIRONMENTAL SUSTAINABILITY 2A (EVSA201)**

**CONTACT TIME:** Theory (4)

**ASSESSMENT**

| | | |
|---|---|---|
| **Course Mark:** | Tests | 60% |
| | Assignments/ Project | 40% |
| **Examination:** | 1 x 3 hour paper | |
| **Final Mark**: | Course Mark (40%) + Examination Mark (60%) | |

**SYLLABUS:** This module enables the student to understand a wide range of environmental issues, both locally and globally, and the significance of these issues in practising sustainable horticulture with emphasis on natural resource management and conservation. The student will develop an appreciation for environmental and conservation issues, the impacts of their actions and thus the contribution of their actions to complex local and global environmental concerns, while developing an ethos of making environmental issues a fundamental consideration in everything that they do, in the workplace and in their lives in general to achieve sustainability. In addition, the student will gain knowledge of the complexities of environmental issues and their relationships to development, poverty, community issues and horticulture. Emphasis is placed on the environmental crisis and the role humans play in contributing to this.

The module content includes:

- Human habitation of the earth (Origin of the environmental problem; Analysing the problem; Modification of the natural system; Cultural-ecological systems; Artificial ecosystems; Globalisation)
- The environment as a resource (Definitions; Classification of resources; Ecology of natural resources; Water resources; Biological resources; Food security)
- Environmental degradation (Ecological footprint; Habitat destruction; Environmental Pollution; Global warming and climate change; Pollution Control)

**ENVIRONMENTAL SUSTAINABILITY 2B (EVSB201)**

**CONTACT TIME:** Theory (4)

**ASSESSMENT**

**Course Mark:** Tests (60%), Assignments/ Project (40%)

**Examination:** 1 x 3 hour paper

**Final Mark**: Course Mark (40%) + Examination Mark (60%)

**SYLLABUS:** This module enables the student to understand a wide range of environmental issues, both locally and globally, and the significance of these issues in practising sustainable horticulture with emphasis on natural resource management and conservation. The student will develop an appreciation for environmental and conservation issues, the impacts of their actions and thus the contribution of their actions to complex local and global environmental concerns, while developing an ethos of making environmental issues a fundamental consideration in everything that they do, in the workplace and in their lives in general to achieve sustainability. In addition, the student will gain knowledge of the complexities of environmental issues and their relationships to development, poverty, community issues and horticulture. Focus is on the policies, programmes, tools and methods employed to manage environmental problems.

The module content includes:

- Environmental conservation (The value of nature conservation; Conservation in South Africa; Biomes of South Africa; Importance of biological resources and biodiversity; Factors that threaten biological resources and biodiversity; Ecotourism and the promotion of conservation; The role of business in conserving biodiversity; Red data species)
- Managing our natural resources (Conservation versus development; Sustainable development; Challenges to sustainable development; Resource management in South Africa; Land-use management)
- Ecological disturbance: Restoration and rehabilitation (Ecological disturbance/degradation; Restoration and rehabilitation; Establishment and management of self-sustaining vegetation)
- Evaluating Environmental and Development projects (Environmental Impact assessment; Social impact assessment; Integrated environmental assessment; Environmental Management plans; Auditing; Local and international laws of relevance)
- Sustainable Horticulture (Best environmental practices as it relates to horticulture; Environmental Management Systems)

## 10.2 NATIONAL DIPLOMA IN HORTICULTURE NDHRT2

### HORTICULTURE I (HORT102)

**CONTACT TIME:** Theory (4);
Practical (2)

**ASSESSMENT**

| | | |
|---|---|---|
| **Course Mark:** | Theory: | 50% |
| | Assignment: | 25% |
| | Practicals: | 25% |

**Examination:** 1 x 3 hour paper

**Final Mark**: Course Mark (40%) + Examination Mark (60%)

**SYLLABUS:** The green industry structure, asexual and sexual plant propagation, Environmental factors, use of equipment and facilities, Growing-on techniques, Mist propagation, Micro propagation

**HORTICULTURE II (HORT202)**

**CONTACT TIME:** Theory (4)

**ASSESSMENT**

**Course Mark:** Theory: 100%

**Examination:** 1 x 3 hour paper

**Final Mark**: Course Mark (40%) + Examination Mark (60%)

**SYLLABUS:** Plan, develop and maintain a propagation and cultivation facility. Nursery siting, layout and integration of components, construction of growth structures (shade houses and greenhouses), propagation facilities, efficacy of optimal orientation, utilization of ventilation, cooling, heating, light, oxygen, $CO_2$, humidity and water, appointment of specialist contractors,

**HORTICULTURE III (HORT302)**

**CONTACT TIME:** Theory (4)

**ASSESSMENT**

**Course Mark:** Theory: 75%

Assignment: 25%

**Examination:** 1 x 3 hour paper

**Final Mark**: Course Mark (40%) + Examination Mark (60%)

**SYLLABUS:** International & local trends, economically viable indigenous/exotic crops, nursery facilities & structures, production programs, cultural techniques to achieve optimum yields, harvesting, preservation, storage, grading & packing processes. Seed storage, treatment & viability harvesting, collection and cleaning. Correct seed sowing. Media containers & seed sowing equipment. Optimal germination (injection, nutritional monitoring and pest/disease preventions), Pinching, hardening off and staging techniques. Production processes for selected crops (indoor pot plants and foliage plants), Applied photoperiodic and thermo periodic techniques, growth regulators, fertilizer & irrigation regimes. Pest & disease control, Potting, packaging, labelling, marketing & distribution strategies, Plant breeders' rights & royalties, Plant morphology, life cycle and physiology of significant crops. Appropriate propagation techniques, floral induction and forcing. Bulb production facilities and equipment. Horticultural significance of exotic and indigenous species.

Utilitarian uses of trees (amenity, conservation, urban greening, establishment of community nurseries). European and African medicinal and culinary herb species, Develop and/or maintain a cut flower farm, seedling nursery, wholesale container nursery, commercial bulb farm, tree nursery and herb nursery.

**PLANT MATERIAL STUDIES I (PMAS101)**

**CONTACT TIME:** Theory (4);
Practical (2)

**ASSESSMENT**

| | | |
|---|---|---|
| **Course Mark:** | Theory: | 50% |
| | Assignment: | 20% |
| | Practicals: | 30% |
| **Examination:** | 1 x 3 hour paper | |
| **Final Mark**: | Course Mark (40%) + Examination Mark (60%) | |

**SYLLABUS:** General External morphology of plants - physical structure of roots, stems, leaves, flowers, pollination, fertilisation, and fruit. Descriptions of trees, shrubs, groundcovers, climbers, grasses annuals, aquatics, succulents, herbs, indoor plants, bulbs, vegetables and bedding plants. Diversity of plant types, habitats and their natural relationships; the identification and roles of Indigenous, exotic and endemic plants. Horticultural significance, application & role of Plant taxonomy, plant nomenclature and classification. Use of keys (books, cards, computer etc) to identify plants. Knowledge of National Plant List wrt Plant types, habitats, relationships, appearance (form, growth habit, colour, texture, seasonal and visual effects). Plant usage wrt architectural, climatological & aesthetic functions.

**I**dentification & artificial classification of indigenous & exotic ornamental plants. Ornamental plant material - horticultural characteristics and application in the context of the nursery landscaping and conservation ambit.

**PLANT MATERIAL STUDIES II (PMAS201)**

**CONTACT TIME:** Theory (4);
Practical (2)

**ASSESSMENT**

| | | |
|---|---|---|
| **Course Mark:** | Theory: | 60% |
| | Practicals: | 40% |
| **Examination:** | 1 x 3 hour paper | |
| **Final Mark**: | Course Mark (40%) + Examination Mark (60%) | |

**SYLLABUS:** Internal Plant morphology - cytology (cell structure); histology (plant tissues) and anatomy. Plant physiology & Metabolic processes -enzymes; water relations; mineral nutrition; photosynthesis & respiration. Plant selection - climatic and microclimate conditions; edaphic conditions and growing media; water requirements and environmental stresses. Further Knowledge of the National Plant List

**PLANT MATERIAL STUDIES III (PMAS301)**

**CONTACT TIME:** Theory (4);
Practical (2)

**ASSESSMENT**

**Course Mark:** Theory: 60%
Practicals: 40%

**Examination:** 1 x 3 hour paper

**Final Mark**: Course Mark (40%) + Examination Mark (60%)

**SYLLABUS:** Diagnostic features of economically/horticulturally significant plant families. Establishment/ transplanting/maintenance of plant material viz groundcovers, shrubs and trees. Aboricultural and tree care - pruning, grafting, pollarding, topiary and hedging. National Plant List

**GROWTH MEDIA TECHNOLOGY (GMET101)**

**CONTACT TIME:** Theory (4)

**ASSESSMENT**

**Course Mark:** Theory: 100%

**Examination:** 1 x 3 hour paper

**Final Mark**: Course Mark (40%) + Examination Mark (60%)

**SYLLABUS:** Orientation - sunlight, ventilation, cooling and heating systems. Controlled climatic environments / shade house. Soil - growth medium, agricultural/horticultural uses. Modern potting media. Soil formation, Soil horizons, profiles and pedons. Soil texture and structure. Soil triangles analytic tool. Concepts of bulk density, permeability, air filled porosity and water holding capacity. Agricultural practices / impact on soil structure. Soil temperatures. Soil colour. Soil life. Organic matter. Composting. Soil colloids & clay. Soil pH, lime and sulphates, saline and sodic soil. Readings pertaining to Soluble salt content (EC) and pH. Water stresses & excess. Capillarity. Soil /water /plant relationships. Irrigation-sub surface and surface, frequency, duration, water quality and quantity. Essential macro and micronutrients for plant growth - Organic and inorganic forms of Nitrogen, Phosphorous and Potassium. Fertilisers - "complete" granular, "straights", slow release, fluids. Trace element mix. Basic fertilizer calculations. Fertiliser application methods and procedures - pre-enrichment, fertigation, foliar sprays and top dressing. Ordering, mixing, storage and handling procedures and modern pasteurization and sterilization.

**TURFGRASS CULTURE (TGCL101)**

**CONTACT TIME:** Theory (4)

**ASSESSMENT**

| | | |
|---|---|---|
| **Course Mark:** | Theory: | 75% |
| | Assignment: | 25% |
| **Examination:** | 1 x 3 hour paper | |
| **Final Mark**: | Course Mark (40%) + Examination Mark (60%) | |

**SYLLABUS:** Grasses evaluated wrt civilization, sport, amenity & ecological rehabilitation. Turf grass species identified (characteristics, function and morphology), selected (environmental tolerance/intended use), establishing and maintaining (establishment methods, site cultivation & maintenance practice), facilities layout (use, construction, reparation, irrigation systems & drainage), Maintenance (mowing, spring treatment, topdressing and fertilization), alternatives (synthetic and biotic), Social, cultural, economic & ecological influences, Indigenous veld grass applications & lawn substitutes. Over seeding, inter seeding, use of bio stimulants, turf colouring & wetting agents.

**SUPERVISORY MANAGEMENT I (SUMN101)**

**CONTACT TIME:** Theory (4)

**ASSESSMENT**

| | | |
|---|---|---|
| **Course Mark:** | Theory: | 60% |
| | Assignment: | 40% |
| **Examination:** | 1 x 3 hour paper | |
| **Final Mark**: | Course Mark (40%) + Examination Mark (60%) | |

**SYLLABUS:** Effective self-management, Business etiquette, Business communication skills, Personal/ professional ethics and social responsibility. Significance, function & role of management. Management responsibility & skills. Levels of management. Organizational structures wrt public and private horticultural businesses, Organizational resources - people, financial & physical. Scope and horticultural business environment. Planning, leading, organizing & controlling (POLC). Leadership styles. Motivation. Teamwork. Decision-making and problem-solving methods. Delegation. Staff supervision.

**HORTICULTURAL MANAGEMENT II (HMNT203)**

**CONTACT TIME:** Theory (4)

**ASSESSMENT**

| | | |
|---|---|---|
| **Course Mark:** | Theory: | 80% |
| | Assignment: | 20% |
| **Examination:** | 1 x 3 hour paper | |
| **Final Mark**: | Course Mark (40%) + Examination Mark (60%) | |

**SYLLABUS:** Components, design and layouts of retail garden centres. International and local retailing trends. Practical merchandising and layout. Personal selling. Quality service. Daily retail and office routines - handling cashiers, communication, record-keeping, stock taking and security. Operational factors - procurement and dispatching. Business communication techniques - business letters, telephone communication, faxes & e-mailing. Marketing function. Satisfying customer needs. Target markets. Market research. Feasibility and viability tests. Marketing strategies and marketing mix (product, price, promotion and distribution) for horticultural businesses. Maximising sales - promotions and displays, creating effective promotional material and signage. Key financial terminology. Establishment and maintenance of basic accounts and record-keeping. Using banks -personal and business. Profitable pricing and costing.

**HORTICULTURAL PRODUCTION MANAGEMENT III (HPRM301)**

**CONTACT TIME:** Theory (4)

**ASSESSMENT**

| | | |
|---|---|---|
| **Course Mark:** | Theory: | 80% |
| | Assignment: | 20% |
| **Examination:** | 1 x 3 hour paper | |
| **Final Mark**: | Course Mark (40%) + Examination Mark (60%) | |

**SYLLABUS:** Staffing - planning, advertising, interviewing/selecting suitable applicants for horticultural SMME. Performance appraisals, Employer-employee relationships. Staff training & development. Staff record keeping, SA Labour Legislation - LRA, BCEA, OHASA, UIF, and SDA. Employee compensation. Disciplinary and grievance. Trade unions & CCMA. AIDS, safety in the workplace, employment equity. Conflict-management. Negotiation. Law of contract. Tendering (for horticultural business), BBBEE, outsourcing and contracting. The business plan - Product /Service description & need, Financial & marketing feasibility/viability studies, Marketing strategy & corporate identity , Operational & production considerations, Human Resource implications, Type of business registration, insurances and compliance with SARS requirements, CVs. Financial documents.

**ENVIRONMENTAL STUDIES I (ESTD102)**

**CONTACT TIME:** Theory (4)

**ASSESSMENT**

| | | |
|---|---|---|
| **Course Mark:** | Theory: | 50% |
| | Assignment: | 50% |
| **Examination:** | 1 x 3 hour paper | |
| **Final Mark**: | Course Mark (40%) + Examination Mark (60%) | |
| **SYLLABUS:** | Environmental Terminology. Environmental significance of atmosphere & biosphere - climate, geology & hydrology. Biochemical cycles. Biotic components - man, plants & animals. Community structure, succession & population. | |

**ENVIRONMENTAL STUDIES II (ESTD201)**

**CONTACT TIME:** Theory (4)

**ASSESSMENT**

| | | |
|---|---|---|
| **Course Mark:** | Theory: | 50% |
| | Assignments: | 30% |
| | Project: | 20% |
| **Examination:** | 1 x 3 hour paper | |
| **Final Mark**: | Course Mark (40%) + Examination Mark (60%) | |
| **SYLLABUS:** | Human impact & imprint on environment (political, socio and economic), Anthropogenic impacts on environment Habitat destruction / degradation. Unsustainable land use practice. Global warming & ozone depletion, Acid rain, Atmospheric, terrestrial, marine and aquatic pollution. Desertification, Deforestation, Poverty and its alleviation, Genetically Modified Organisms (GMOs). Significance, benefits, limitations and practices of ex situ and in situ conservation techniques. Land reclamation. Categories and examples of protected sites. First and Third world conservation. Significance of and nature of biodiversity and species loss. Sustainable open space planning, policies and practice for cities. Significance and implementation of Local Agenda 21 strategies. Sustainable development - balance economic development with environmental responsibilities. Environmental Impact Assessment (EIA's), Integrated Environmental Management (IEM). International treaties and conventions. SA Environmental law | |

**PROTECTION II (PLPR201)**

**CONTACT TIME:** Theory (4)

**ASSESSMENT**

| | | |
|---|---|---|
| **Course Mark:** | Theory: | 80% |
| | Practicals: | 20% |
| **Examination:** | 1 x 3 hour paper | |
| **Final Mark**: | Course Mark (40%) + Examination Mark (60%) | |
| **SYLLABUS:** | Entomology- Anatomy and physiology of insects, insect classification, growth and impact. Review of major S African pests in ornamental plants, turf grasses and edible crops. Integrated Pest Management: definition and methods of control. Plant pathology: Fungi, Bacteria and Viruses, their identification and control. Nematology: nematodes as pests and as natural enemies. Pesticide formulations, their compositions and safe handling, storage and application according to OHASA standards. Weed management and the identification and control of Invasive Alien plants. | |

**HORTICULTURAL MECHANISATION I (HMEC101)**

**CONTACT TIME:** Theory (4)

**ASSESSMENT**

| | | |
|---|---|---|
| **Course Mark:** | Theory: | 100% |
| **Examination:** | 1 x 3 hour paper | |
| **Final Mark**: | Course Mark (40%) + Examination Mark (60%) | |
| **SYLLABUS:** | Workshop Tools - spanners; power tools. Mechanised equipment / tractor drawn machinery: gang, rotary & hydraulic mowers, fertilizer spreaders, seed sowers, boom & other sprayers, hollow tiners and verticuttters. Task specific mowing equipment —hand/ self- propelled mowers, ride on mowers, brush cutters. Safety aspects | |

**SITE PLANNING I (SPLN101)**

**CONTACT TIME:** Theory (4);
Practical (4)

**ASSESSMENT**

| | | |
|---|---|---|
| **Course Mark:** | Theory: | 50% |
| | Assignment: | 10% |
| | Practicals: | 40% |
| **Examination:** | 1 x 3 hour paper | |
| **Final Mark**: | Course Mark (40%) + Examination Mark (60%) | |

**SYLLABUS:** Site planning & landscaping. Landscaping procedures - survey, analysis, synthesis, design, implementation and maintenance. Design vocabulary. Hard & soft landscaping components. Functional and aesthetic considerations. Client and User needs - client brief and user surveys. Legislative requirements. Physical site data - soil, geology, topography, vegetation, climate & wildlife. Manmade & cultural elements. Specialist consultants. Record keeping & data. Plan graphic techniques - scale, page layout, labelling, symbols and dimensions. Basic soft landscaping elements. Use of various plan measuring techniques and mathematical calculations. Basic on-site measuring and levelling techniques and equipment are demonstrated.

## BACHELOR OF TECHNOLOGY: HORTICULTURE (BTHRT1)

**RESEARCH METHODOLOGY (RSER101)**

**CONTACT TIME:** Theory (4)

**ASSESSMENT**

| | | | |
|---|---|---|---|
| **Course Mark:** | Theory: | | 25% |
| | Two Assignments: | | 50% |
| | Project proposal: | 25% | |
| | Project Report: | | 25% |
| **Examination:** | Continuous assessment | | |
| **Final Mark**: | Average mark of five assessments | | |

**SYLLABUS:** Criteria for good research. Problem Statements. Identify variables. Justify study. Define the terms. Construct hypothesis. Discuss Qualitative/ Quantitative research. Forms of research. Ethical research. Literature search. Referencing. Collect / analyse data. Construct data capture tools (questionnaire), Write a proposal. Reliability and Validity. Sample populations. Develop critical approach, implement project, and write project report.

**HORTICULTURAL PRODUCTION MANAGEMENT IV (HPRM401)**

**CONTACT TIME:** Theory (4)

**ASSESSMENT**

| | | |
|---|---|---|
| **Course Mark:** | Theory: | 50% |
| | Assignment: | 50% |
| **Examination:** | 2 x 3 hour papers | |
| **Final Mark**: | Course Mark (40%) + Examination Mark (60%) | |
| **SYLLABUS:** | Operations management, Enhancing competitiveness in operations, principles of quality and Total Quality Management in operations, Project management and basic features of successful projects, Use the features and principles of Project Management to develop an fundable project, Strategy and operations strategy, Product design, Process design, Service design, Supply chains and Supply Chain management, the financial administration aspects, Compile a comprehensive business plan. | |

**HORTICULTURAL PRODUCTION TECHNIQUES IV (HPTC401)**

**CONTACT TIME:** Theory (4)

**ASSESSMENT**

| | | |
|---|---|---|
| **Course Mark:** | Theory: | 50% |
| | Assignments: | 50% |
| **Examination:** | 2 x 3 hour papers | |
| **Final Mark**: | Course Mark (40%) + Examination Mark (60%) | |
| **SYLLABUS:** | Mendelian Genetics. Genetics exploitation (Classical Plant Breeding), Modern Plant Breeding techniques, Intellectual Property Rights, Intensive Plant Production Techniques: Micro-propagation (tissue culture). Hydroculture (hydroponics), greenhouse forcing techniques. | |

**E&OE**