

Advanced Diploma of Horticulture

First year subjects

202-151 Information Technology and Communication

See full subject details on page 1.

207-151 Plant Biology

See full subject details on page 1.

207-152 Soil Management

Availability: Burnley campus.

Credit points: 12.5

HECS-band: 2

Coordinator: Mr Ross Hall

Contact: 24 hours lectures, 10 hours laboratory sessions (*Semester 2*).

Description: The management of plants depends on a thorough knowledge and understanding of the way in which soil properties can influence plant growth. This subject aims to provide a background in plant/soil relationships and to show the ways in which soils can be manipulated to influence and improve plant growth. It will describe the ways in which soil properties (physical, chemical and biological) can affect plant growth. It will describe the ways in which soils can be managed to maintain and improve their productivity and will describe the distribution of important soils in Victoria and the systems developed for classifying soils.

Assessment: One 3-hour written examination worth 50% of final marks, two assignments equivalent to 2500 words and worth 25% of final marks each.

207-153 Horticultural Science

Availability: Burnley campus.

Credit points: 12.5

HECS-band: 2

Coordinator: Mr Ross Hall

Contact: 24 hours of lectures, 12 x 3-hour laboratory sessions (*Semester 1*).

Description: This subject covers:

- the nature of matter;
- chemical symbols, valency and the periodic table;
- plant nutrients and their relationship to pH;
- principles and units of measurement and energy balances; and
- taxonomic approaches to plant description, plant anatomy and morphology (roots, stems, leaves, flowers, fruits).

Assessment: Two 2-hour written examinations worth 60% of final marks, two written assignments (20%) and practical reports worth 20% of final marks.

207-154 Horticultural Technology

Availability: Burnley campus.

Credit points: 12.5

HECS-band: 2

Coordinator: Mr Ken James

Prerequisites: 207-158 Horticultural Practices I.

Contact: 36 hours of lectures, 36 hours of practical classes and tutorials (*Semester 2*).

Description: This subject examines the range of machinery used in the management of horticultural sites, together with the principles of machinery operation and maintenance; health and safety techniques to identify hazards associated with machinery used, the assessment of risk and the control methods used to comply with current legislation; basic site surveying techniques that will enable the production of site plans and levelling details, for horticultural and irrigation applications; irrigation equipment such as micro, trickle and sprinkler systems as used in horticulture; and water management principles used in the design and management of irrigation systems, including the evaluation of the performance of irrigation systems.

Assessment: A 3-hour examination (50%), and two 3000 word assignments (each 25%).

207-155 Horticultural Practices II

Availability: Burnley campus

Credit points: 12.5

HECS-band: 2

Coordinator: Mr John Rayner

Contact: 24 hours of lectures, 36 hours of practical classes, 12 hours tutorials (*Semester 2*).

Description: This subject covers:

- the study of plant groups based on environmental tolerances, specialised uses and themes;
- horticultural issues in plant maintenance (pruning methods, plant selection, planting and establishment methods, plant production methods, plant quality, site assessment, plant nutrition strategies, landscape materials); and
- practical skills development activities in the areas of ornamental garden maintenance, turf maintenance, landscape construction, plant propagation and arboriculture.

Assessment: One final two-hour written examination (35%), one mid-semester examination (15%) and practical assessments (sector based) (50%).

Recommended texts: Burnley College, University of Melbourne, Version 1.05, *Burnley Plant Directory (Database) 2000*, Burnley College, University of Melbourne.

207-158 Horticultural Practices I

Availability: Burnley campus.

Credit points: 12.5

HECS-band: 2

Coordinator: Mr John Delpratt

Contact: 36 hours of lectures, 36 hours of practical classes (*Semester 1*).

Description: Topics include the industry sectors that service landscape horticulture; basic practices and systems for propagating plants from seeds and cuttings and for establishing and maintaining plants within the landscape; critical environmental factors that influence the establishment and growth of plants in planted landscapes; International Code of Botanical Nomenclature and Code for Cultivated Plants; and study of plant groups based on habit, life-cycle and thematic approaches.

Assessment: Two 2-hour written examinations worth 80% of final marks, two practical reports worth 20% of final marks.

Recommended texts: Burnley College, University of Melbourne, Version 1.05, *Burnley Plant Directory (Database) 2000*, Burnley College, University of Melbourne.

208-161 Financial Management for Resource Ind I

See full subject details on page 1.

Second year subjects

202-051 Industry Placement#

See full subject details on page 2.

207-252 Horticultural Management I

Availability: Burnley campus.

Credit points: 12.5

HECS-band: 2

Coordinator: Mr John Rayner

Contact: 36 hours of lectures and 36 hours of practical activities (*Semester 1*).

Description: This subject covers:

- principles of plant design and composition;
- study of plant groups based on garden styles, landscape themes and cultural factors;
- technical issues relating to a specific horticultural industry sector:
 - arboriculture: safely climbing and pruning trees by utilising modern technologies and techniques;
 - parks and gardens: park design and resource planning, development of standards and specifications, turf management, park materials and equipment;
 - landscape construction: concrete construction (slabs and footings), retaining and free standing walls, bricklaying, step and ramp construction;
 - nursery: production contracts and management, plant growth regulators, plant nutrition management, nursery accreditation; and
- practical activities related to a horticultural industry sector.

Assessment: One final two-hour written examination (35%), one mid-semester one-hour examination (15%) and practical and written assessments to 3000 words (sector based 50%).

Prescribed texts: Burnley College, University of Melbourne, Version 1.05, *Burnley Plant Directory (Database) 2000*, Burnley College, University of Melbourne.

207-253 Horticultural Management II

Availability: Burnley campus.

Credit points: 12.5

HECS-band: 2

Coordinator: Mr John Rayner

Contact: 36 hours of lectures and 36 hours of practical activities (*Semester 2*).

Description: This subject includes:

- study of horticultural plants based on landscape evaluation and key Australian genera and/or ecological themes;
- technical, design, planning and management issues relating to a specific horticultural industry sector:
 - arboriculture: establishing, maintaining and managing trees that enhance urban and other human environments;
 - parks and gardens: park and recreation policy and planning, horticultural therapy, heritage garden management, recreation planning and management;
 - landscape construction: soil water movement and drainage construction, irrigation installation, rock and water in the landscape, ornamental pond construction;
 - nursery: materials handling, growing media, trials organisation and management, specialist production enterprises, nursery retailing and marketing, greenhouse management issues.

Assessment: One final two-hour written examination (35%), one oral presentation (15%) and practical and written assessments (sector based) (50%).

Recommended texts: Burnley College, University of Melbourne, Version 1.05, *Burnley Plant Directory (Database) 2000*, Burnley College, University of Melbourne.

207-263 Advanced Plant Biology

Availability: Burnley campus.

Credit points: 12.5

HECS-band: 2

Coordinator: Mr Kevin Blaze

Contact: 36 hours lectures, 24 hours practicals, 12 hours tutorials (*Semester 1*).

Description: The objective of this subject is to extend the participant's ability to:

- describe various physiological processes; and
- propose appropriate management strategies for controlling these physiological processes to better suit horticultural objectives.

The content includes:

- photosynthesis, respiration and their manipulation to control vegetative growth;
- the processes of germination, growth, flowering, fruiting and senescence and their management;
- population genetics, competition, natural and artificial selection;
- the effects of waterlogging, drought, freezing, high temperature and pollution stresses on plants; and
- the management of the stresses and the characteristics of plants that allow them to survive these stresses.

Assessment: One three-hour written examination worth 50% of final marks, one assignment equivalent to 3000 words and worth 30% of final marks and one assignment equivalent to 2000 words and worth 20% of final marks.

207-265 Plant Management and the Environment

Credit points: 12.5

HECS-band: 2

Coordinator: Mr John Brereton

Contact: 24 hours lectures and 36 hours practical work (*Semester 2*).

Description: This subject includes:

- developing and utilising diagnostic skills and equipment in the management of plant health;
- case studies of managing pest, disease and weed problems (including damage thresholds and control strategies);
- integrated pest management programs in horticultural sectors (including design, planning, implementation and evaluation);
- sustainable water management practices in urban horticulture; and
- the relationships between edaphic factors and plant growth.

Assessment: One three-hour written examination worth 50% of final marks, two assignments equivalent to 2500 words and worth 25% of final marks each.

208-269 Managing Staff

See full subject details on page 3.

207-319 Plant Protection

Credit points: 12.5

HECS-band: 2

Coordinator: Mr John Brereton

Contact: 36 hours lectures and 24 hours practical activities (*Semester 1*).

Description: This subject includes:

- impact of stress on plants and invasion by pests and other parasitic organisms; the classification of pests;
- identification of common pest, disease and weed species;
- integrated pest control concepts;
- pest control measures;
- fate of chemicals in the environment; and
- legislation pertaining to pests, noxious weeds and environmental weeds.

Assessment: One two-hour written examination (50%), two pest identification assessments (30%) and written reports (plant protection record sheets) (20%).

Recommended texts: R Kerruish, *Plant Protection 1 - Methods of Disease, Pest and Weed Control*, Rootrot Press, Canberra, 1990.

Elective subjects

207-251 Plant Technology

Availability: Burnley campus.

Credit points: 12.5

HECS-band: 2

Coordinator: Mr James Will

Contact: 36 hours of lectures, 24 hours of practical classes and site visits (*Semester 1*).

Description: Topics include:

- clonal and non-clonal methods for producing plants for nursery and revegetation programs through tissue culture;
- the biological basis for plant tissue culture;
- the tissue culture and micropropagation process;
- in-vitro media and environments;
- seed processing technologies;
- laboratory testing for seed quality; and
- seed sowing techniques for nursery, field and revegetation.

Assessment: One 2-hour written examination (50%), two written assignments each equivalent to 2000 words (25%).

207-254 Horticultural Project Management

Availability: Burnley campus.

Credit points: 12.5

HECS-band: 2

Coordinator: Mr Mike Green

Prerequisites: 207-152 Soil Management; 207-252 Horticultural Management I; 208-161 Financial Management for Resource Industries I.

Contact: 12 hours lectures, 12 hours tutorials, 48 hours practical and project classes (*Semester 2*).

Description: This subject includes:

- project design;
- planning and management;
- contract administration and management;
- presentation skills;
- report styles and writing;
- access, analysis and presentation of horticultural information; and
- project studies relating to a specific horticultural activity.

Assessment: One written assignment (project report) equivalent to 5000 words (75%) and one oral presentation (25%).

207-258 Sports Turf Management

Availability: Burnley campus

Credit points: 12.5

HECS-band: 2

Coordinator: Dr David Aldous

Semester: Semester 1

Description: Areas for this subject have been designed to extend the student's ability to:

- describe the benefits, values, location, and distribution of the national and international turfgrass industry;
- describe basic turfgrass function, physiology, inflorescence, and seed development;
- describe the major cool, transitional, and warm-season turfgrasses, and alternatives;
- describe specialist sowing/planting/instant lawn and after-care practices;
- describe important turf fertilisers and conditioners for turf performance;
- describe the components of surface playing quality;
- describe the agronomic factors influencing surface playing quality;

- describe the performance requirements for different grassed surfaces;
- measure and assess the playing quality of a range of grass surfaces;
- describe the practices associated with efficient and effective irrigation and drainage application;
- describe the practices associated in the use and care of turfgrass machinery and equipment for maintenance and renovation;
- recommend control methods and strategies for weeds, insects, nematodes, and diseases of turfgrass; and
- develop a works program and schedule for fine and coarse turf maintenance.

Assessment: One 3-hour common examination (50%) (short answer, or essay), one web assignment of 2500 words (25%) (analysis of an industry topic), and two workshop reference exercises of 1000 words (25%).

Prescribed texts: D E Aldous (ed.), *International Turf Management Handbook*, Butterworth-Heinemann, London, 1999.

207-261 Landscape Design and Graphics

Availability: Burnley campus

Credit points: 12.5

HECS-band: 2

Coordinator: Mr Mike Green

Contact: 24 hours lectures and 36 hours practicals (*Semester 2*).

Description: Upon completing this subject the student should be able to:

- demonstrate basic graphic design and technical drafting skills;
- describe the principle components of the design process;
- demonstrate an ability to interpret client requirements; and
- draw basic landscape plans for small projects in park, garden or turf facilities.

The content includes:

- the theory of design both contemporary and historic, site analysis techniques;
- developing and interpreting a brief;
- use of graphic symbols to communicate;
- use of scale perspective;
- planting plans; and
- colour media.

Assessment: One 2.5-hour written examination worth 40% of final marks, two assignments equivalent to 3000 words and worth 30% of final marks each.

207-269 Vegetation Management

Availability: Burnley campus.

Credit points: 12.5

HECS-band: 2

Coordinator: Mr John Rayner

Contact: 36 hours lectures, 24 hours practical classes and site visits (*Semester 1*).

Description: Topics include:

- vegetation classification schemes;
- Australian vegetation communities and factors of influence;
- ecological terms and definitions;
- global issues in vegetation management;
- management of remnant vegetation (including restoration planning and techniques, habitat issues, etc.);
- amenity vegetation types (grasslands, ornamental herbaceous plantings, ground covers, shrub plantings, special forms);
- management issues in amenity vegetation (plant selection, plant replacement, plant quality, establishment issues);
- management of trees in the landscape (tree establishment, tree transplanting and maintenance, tree hazard assessment); and
- agencies involved in vegetation management.

Assessment: One two-hour written examination (50%), one assignment equivalent to 3000 words (50%).

207-333 Amenity Tree Assessment and Management

See full subject details on page 6.

