Bachelor of Resource Management

First year subjects

202-101 Chemistry for Land and Food Resources
See full subject details on page 591.

202-103 Biology for Land and Food Resources
See full subject details on page 591.

202-104 Information Technology and Communication
See full subject details on page 591.

202-106 Land Resources
See full subject details on page 591.

206-103 Ecology
Availability: Dookie and Burnley campuses.

Credit points: 12.5 **HECS-band:** 2

Coordinator: Dr Steve Hamilton

Contact: 36 hours lectures and 20 hours of practicals/tutorials *(Semester 2).*

Description: On completion students will have knowledge of the structure and function of aquatic and terrestrial ecosystems, with an emphasis on the impact of human and natural disturbances on these ecosystems; and an ability to evaluate the role of individual organisms, species and populations within ecosystems and communities.

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

206-109 Australian Agricultural Production Sys
Credit points: 12.5 **HECS-band:** 2

Coordinator: Mr Richard Dickins

Prerequisites: 202-106 Land Resources.

Contact: 30 hours of lectures and 30 hours of practical work *(Semester 2).*

Description: The aim of this subject is to provide students with a range of knowledge, practical experiences and observations of the main agricultural industries land users of south-eastern Australia. It is expected that on the completion of this subject students should have gained an understanding of the management of such agricultural industries, and be conversant with the limitations, constraints and impacts which influence them. Importantly, an insight into the landholder perspective of these industries will be gained.

Topics covered include:

- the history and development of Australian agriculture;
- the major agricultural intensive and extensive industries/enterprises of Australia, with an emphasis on south-eastern Australia;
- the on-ground land management of these enterprises;
- the major issues confronting the major agricultural industries, including industry perspectives;
- and the political, economic, social and environmental considerations.

A major part of this subject will be the observation of these industries in operation, and a range of speakers who are practitioners within these industries at various levels.

Assessment: A 3-hour end-of-semester examination (40%) and up to three written assignments (20% each).

209-101 Economics of Resource Use
See full subject details on page 591.

Second year subjects

Complete descriptions of second and later year subjects will be available in the 2002 Handbook, or from the course coordinator.

202-201 Plant Function
See full subject details on page 592.

202-202 Experimental Design/Statistical Methods
See full subject details on page 592.

202-203 Soil and Water Resources
See full subject details on page 592.

202-202 Australian Flora
Availability: Dookie campus.

Credit points: 12.5 **HECS-band:** 2

Coordinator: Dr Steve Hamilton

Prerequisites: 202-103 Biology for Land and Food Resources.

Contact: 24 hrs lectures and 30 hrs tutorials/practicals *(Semester 2).*

Description: Knowledge and an ability to identify the major taxonomic groups of the fungi, algae, non-vascular and vascular plants, and their basic biology, distribution and significance within the broader ecology of aquatic and terrestrial communities and ecosystems, and their roles in natural resource management.

The basic content includes:

- function and life cycle of the various major phylum groups within the Kingdom Plantae (Dinophyta, Chrysophyta, Bacillariophyta, Chlorophyta, Phaeophyta, Rhodophyta, Hepatophyta, Brypohyta, Lycophyta, Filicophyta, Coniferophyta and Maagnoliophyta);
- selected groups within the Kingdom Fungi (Deuteromycota, Zygomycota, Ascomycota, Basidiomycota, Oomycota, Mycophyta) and Monera (Cyanobacteria);
- the roles of these groups within the major ecosystems of Australia;
- further identification of these groups, with a major emphasis on the higher land plants
- and preparation of a collection of vascular and non-vascular land plants.

Assessment: A two-hour examination (40 %), one practical test (20 %), one 2000 word assignment (20 %) and a plant collection of 50 specimens (20 %).

206-203 Techniques of Resource Assessment
See full subject details on page 596.

206-204 Australian Fauna
Availability: Dookie campus.

Credit points: 12.5 **HECS-band:** 2

Coordinator: Ms Cheryl O'Dwyer

Prerequisites: 202-103 Biology for Land and Food Resources.

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

Description: This subject should provide students with an understanding of the identification, biology and ecology of Australian vertebrate and invertebrate fauna.

The content includes:

- Origins and diversity of Australian vertebrates and invertebrates, nomenclature and taxonomy of the Australian fauna;
- biology and ecology of the major invertebrate and vertebrate groups;
- and identification of insects, reptiles, amphibians, birds and mammals.

Assessment: A two-hour examination (40%), a practical examination (30%), and a 3000 word assignment (30%).

206-205 Human Dimensions of Natural Resource Mgt
Availability: Burnley and Dookie campuses.

Credit points: 12.5 **HECS-band:** 2

Coordinator: Dr Kathryn Williams

Semester: Semester 1

Description: This subject provides an understanding of human social and psychological processes, and how these can be utilized to enhance resource management. Student understanding of these processes will be extended through interaction with guest speakers from a range of resource management professions, field trips, and through application of theory to resource management case studies.

The content includes:

- human motivation;
- adult learning;
- perception and cognition;
- social influence;
- and group processes.

These will be examined in the context of influencing human environmental behaviour to protect natural resources or promote adoption of new technologies, designing and evaluating extension projects, dealing with conflict in resource management, planning for leisure and recreation, and interpreting natural resources.

Students will undertake a two day industry placement to observe communication or extension staff in the work place.

Assessment: Three-hour examination (50%) and two assignments equivalent to 3000 words (each 25%).

209-201 Resource Industry Economics I
See full subject details on page 597.

Third year subjects

202-001 Work Experience
See full subject details on page 593.

202-301 Industry/Research Project
See full subject details on page 593.

202-302 Human Resource Management
See full subject details on page 593.

Fourth year subjects

202-401 Industry/Research Project
See full subject details on page 593.

Elective subjects

202-105 Field Skills
See full subject details on page 594.

600-142 Genetics & The Evolution of Life
See full subject details on page 792.

206-305 Revegetation and Landscape Restoration
Availability: Dookie and Parkville campuses.

Credit points: 12.5 **HECS-band:** 2

Coordinator: Dr Greg Moore

Prerequisites: 206-202 Australian Flora and 206-204 Australian Fauna or 206-105 Horticulture II.

Contact: 36 hrs lectures, 36 hrs field excursions *(Semester 2).*

Description: The objectives of the subject is to extend the students' ability to:

- define agroforestry, revegetation and habitat creation systems;
- select appropriate species for habitat creation and revegetation situations;
- assess and prepare sites for planting and habitat creation;
- plan, implement and cost plantings and the creation of habitat landscapes;
- evaluate, design and implement urban and rural revegetation programs;
- recognize the relationships between flora and fauna in relevant systems;
- prepare a management plan for a revegetation or habitat creation site;
- determine the best land use options for a unit of land;
- describe the benefits of revegetation and habitat creation;
- and identify relevant aesthetic and design principles and philosophies.

The topics to be studied in the subject include:

- agroforestry, habitat creation and revegetation philosophies and definitions;
- costs and benefits of revegetation and habitat creation management;
- site assessment and modification;
- products and markets;
- species selection;
- site preparation and amelioration;
- revegetation schemes;
- techniques for creating habitats and diversifying flora and fauna;
- sites and their management; planting and establishment costs;
- labour;
- plantings and wildlife;
- government policy;
- career structures;
- and land use options and management.

Assessment: A three-hour examination (60%) and two assignments equivalent to 2500 words (each 20%).

206-307 GIS and Remote Sensing
See full subject details on page 600.

206-314 Social Research Methods
See full subject details on page 612.

206-318 Management of Heritage Landscapes
See full subject details on page 613.

206-323 Sustainable Catchments
See full subject details on page 614.

206-324 Conservation Biology
Availability: Dookie campus.

Credit points: 12.5 **HECS-band:** 2

Coordinator: Dr Steve Hamilton

Prerequisites: 206-204 Australian Fauna and 206-202 Australian Flora.

Contact: 36 hrs lectures and 20 hrs practicals./tutorials *(Semester 1).*

Description: Upon completion of this subject students should have:

- knowledge in the application of population ecology and genetics to the conservation of flora, fauna and communities;
- knowledge of the use of conservation biology in the management of endangered species and communities;
- and knowledge of protected area reserve and network selection and management.

The content includes:

- biodiversity within the world and Australia;
- diversity, rarity extinction and threatening processes;
- conservation status and assessment in Australia and Internationally;
- introductory population genetics and methods of analysis in conservation genetics;
- Metapopulation theory;
- the loss of genetic diversity, populations and species in fragmented ecosystems;
- captive breeding and its management;
- concepts in protected area design and selection, including island biogeography, effective breeding size and minimum viable population;
- protected area design and implementation in Victoria, Australian and worldwide;
- and threatened species and area networks.

Assessment: Three assignments of 2000, 2500 and 3000 words respectively (15, 20, and 25%) and a two-hour examination (40%).

206-325 Aquatic Ecology
Availability: Dookie campus.

Credit points: 12.5 **HECS-band:** 2

Coordinator: Ms Cheryl O'Dwyer

Contact: 24hrs lectures and 24 hrs field work *(Semester 1).*

Description: This subject should provide students with an understanding of the ecology and management of aquatic ecosystems.

The content includes:

- radiation and adaptations of different animal and plant groups in freshwater and marine environments;
- methods of assessing water quality, biological monitoring and sampling aquatic vertebrate species;
- wetland characteristics, ecology and management;
- impact of land management and catchment issues on aquatic ecosystems;
- and management of fisheries and aquatic systems.

Assessment: A three-hour examination (60%), and two assignments 2500 words (each 20%).

206-326 Wildlife Conservation and Management
Availability: Dookie campus.

Credit points: 12.5 **HECS-band:** 2

Coordinator: Ms Cheryl O'Dwyer

Prerequisites: 206-204 Australian Fauna.

Contact: 36 hrs lectures *(Semester 2).*

Description: This subject should provide students with an understanding of the principles of wildlife management and the application of various techniques for increasing, harvesting and reducing wildlife populations.

The content includes:

- fundamentals of wildlife management, ecological processes and the regulation of wildlife populations;
- methods of population assessment;
- application of various techniques for increasing at risk populations;
- and productive use of wildlife and the management of this production.

Assessment: 5000 word written assignment (40%), 2500 word written assignment (20%), and a two-hour examination (40%).

206-327 Resource Industry Communication

See full subject details on page 600.

206-328 Working with Community Groups

See full subject details on page 600.

206-330 Resource Management Policy and Action

See full subject details on page 600.

211-305 Fire Ecology and Management

Availability: Creswick campus.

Credit points: 12.5 **HECS-band:** 2

Coordinator: Dr Kevin Tolhurst

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

Description: On completing this subject, students should be competent in:

- basic fire-weather forecasting;
- understanding the principles of fire behaviour and the bases of fire danger ratings;
- understanding the principles of fire protection;
- having skills in planning and selecting appropriate fire-protection strategies;
- understanding the role and impact of fire in forest ecosystems;
- and having a knowledge of fire law.

The topics to be covered will include:

- fire history in Australia;
- combustion theory;
- forest fire behaviour prediction;
- fuel hazard assessment;
- fire weather observation and forecasting;
- fire danger rating systems;
- ecological effects of fire in forests;
- prescribed burning techniques;
- fire planning;
- fire suppression strategies and techniques;
- and fire law and fire management principles.

Assessment: A three-hour written examination (50%) and practical assignments equivalent to about 2000 words and worth up to 20% each.

205-402 Management of Plant and Animal Invasions

See full subject details on page 602.

206-402 Soil Management and Conservation

See full subject details on page 602.

211-405 Fire Ecology and Management

See full subject details on page 607.

211-407 Parks and Recreation

Availability: Dookie campus.

Credit points: 12.5 **HECS-band:** 2

Coordinator: Dr Leon Bren

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

Description: On completion of this subject, students should have:

- an appreciation of the complexities of issues involving park management;
- and some competence in preparing plans to meet the challenge of these issues.

The content includes:

- factors important to the management of parks;
- tangible and intangible aims;
- conflicts of values and the concept of 'balance';
- role of legislation in the management of such areas;
- difficulties in implementation of legislation in the field;
- methods for protection of natural values from visitor pressure;
- dethods for protection of natural values from visitor pressure;
- conflict between priced and non-priced goods and services;
- and management of visitor areas and facilities.

Assessment: One three-hour examination (50%), a practical test (10%), and two practical work assignments equivalent to 2500 words (20% each).

211-410 Agroforestry

Availability: Parkville campus.

Credit points: 12.5 **HECS-band:** 2

Coordinator: Mr Rowan Reid

Prerequisites: 202-201 Plant Function and 202-203 Soil and Water Resources.

Contact: 24 hrs lectures and 36 hrs practical work *(Semester 1).*

Description: This course covers in detail the technical aspects of farm revegetation planning. Students will be expected to participate in field-based learning exercises and information gathering, and to contribute to discussion and debate. By the end of the subject students should:

- have a working knowledge of agroforestry diagnosis and design as an approach to the development of farm tree management opportunities on farms in Australia and overseas;
- have an understanding of the role of trees in providing for private landowner needs and aspirations;
- appreciate the importance of assessing landowners' needs, aspirations and performance criteria when designing agroforestry projects and development strategies;
- be able to develop technical design criteria for effective revegetation for resource conservation, agricultural production and direct commercial purposes;
- be able to undertake a multipurpose revegetation design project;
- be familiar with the opportunities for landowners to produce commercial forest products from private native forests';
- and be familiar with approaches to tree monitoring and evaluation.

Assessment: A design project (25 %), farm forestry strategy project (25 %) and three-hour examination (50 %).