

Advanced Diploma of Agriculture

First year subjects

202-151 Information Technology and Communication

Availability: Burnley, Creswick, Dookie, and Parkville campuses.

Credit points: 12.5

HECS-band: 2

Coordinator: Mr Nick Bailey

Contact: 36 hours of lectures and 36 hours of practicals/tutorials. Residential workshop for flexible-delivery students (*Semester 1*).

Description: This subject will engage students in a high level of interactive learning, often using group collaborative learning tasks. On completion of this subject, students should:

- have a working knowledge of, and basic competence in the use of, tools for communication and for accessing and managing information, particularly electronic and web-based technologies;
- understand the principles of effective communication at different levels (one-on-one, small group, large group etc.) and to audiences from different backgrounds and with different interests;
- have experience in written and oral communication to a range of audiences and be competent in both forms of communication, and also have experience in inter- and intra-team communication using electronic and web-based communication tools;
- have developed problem-solving and critical thinking skills to a level that will serve as a platform for further development of these capabilities throughout the course;
- understand group dynamics, and the factors that lead to effective team work.

Assessment: Referenced abstract (20%), oral presentation (20%), three software projects (15% each), assessed team processes (15%).

Recommended texts: Dwyer, J., *The Business Communication Handbook*, Prentice Hall, 2000. • Courter, G. and Marquis, A., *Mastering Microsoft Office 2000 Professional Edition*, Sybex, 1999.

207-151 Plant Biology

Availability: Burnley and Dookie campuses.

Credit points: 12.5

HECS-band: 2

Coordinator: Mr Kevin Blaze

Contact: Practical/tutorials: 36 hours. Residential workshop for flexible-delivery students (*Semester 1*).

Description: This subject considers the importance of plant production and the ecological role of plants.

Topics include:

- the process of photosynthesis, its links with respiration and growth, the effect of light conditions and plant adaptations to these; photoperiodism;
- the manipulation of light in plant production; the photosynthesis-transpiration compromise, water uptake, osmotic potential, adaptations for water conservation; irrigation;
- waterlogging and salinity;
- climate;
- temperature as a moderating and limiting factor;
- soil, nutrients, nutrient cycling and soil biota;
- other growing media;
- pests, diseases and their control;
- competition, mycorrhizas; plant growth and development, vegetative propagation, tissue culture and plant variety rights;
- sexual reproduction, its advantages, disadvantages and manipulation;
- Mendelian genetics;
- genetic engineering;
- methods of establishing plants including site selection and preparation;
- dormancy and germination;
- natural ecosystems, disturbed ecosystems, various crops, permaculture and amenity parkland;
- case studies for a variety of plant production systems; and
- post-harvest issues.

Assessment: One 1-hour mid-semester examination (15%), one 2-hour end-semester examination (50%), one 1-hour end-semester practical examination (15%), and assignment (20%).

Recommended texts: K R Stern, *Introductory Plant Biology*, Wm C Brown, 1997.

208-153 Skills Acquisition

Availability: Dookie campus.

Credit points: 12.5

HECS-band: 2

Coordinator: Mr Howard Hanna

Contact: 24 hours lectures, 36 hours tutorials. Residential workshop for flexible-delivery students (*Semester 1*).

Description: Topics include farm safety (OH&S), lifting procedures, farm chemical safety, safe operation of farm machinery, routine machine maintenance, machinery calibration, livestock feeding, livestock handling, basic livestock requirements, farm physical recording, integrating activity planning around a number of farm enterprises, types of fencing, costing of farm projects, chainsaw use and safety, basic concreting, introduction to welding systems and safety, and basic windmill repairs.

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.

208-156 Crop Production And Management

Availability: Dookie campus.

Credit points: 12.5

HECS-band: 2

Coordinator: Dr Rob Norton

Prerequisites: 207-151 Plant Biology

Contact: 24 hours lectures plus 24-36 hours tutorials and practicals. Residential workshop for flexible-delivery students (*Semester 2*).

Description: This subject is an introduction to the cropping industry and Australia's position in the international market place. Topics include domestic marketing of cereal grains and analysis of economics of growing cereals in suitable climatic zones of Australia; crop selection and the influence of climate and soils; the role of different crop species in a mix and the basis of crop cultivar recommendations; the resources needed for successful cropping; the principles of crop growth and development; crop establishment techniques and special management requirements of different crops; developing a crop rotation and principles of establishment; yield potential and limitations to yield; managing the harvest process; crop management issues involving irrigation and combining livestock with cropping; pulses and vegetable oilseed crops, their production potential, establishment, management and benefits in a rotation with cereal crops; assessing the merits of alternative crops, particularly summer grown grain crops and pasture seed production; and possibility to expand enterprises to include agroforestry, fruit, vegetable or floriculture crops.

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.

208-157 Animal Science I

Availability: Dookie campus.

Credit points: 12.5

HECS-band: 2

Coordinator: Dr Jayaratnam Tharmaraj

Contact: 24 hours lectures plus 24-36 hours tutorials and practicals. Residential workshop for flexible-delivery students (*Semester 1*).

Description: Topics include the form and function of cells, cellular diversity, cellular chemistry homeostatic mechanisms; integrated animal systems and the inter-relation of nutrition, health, genotype and environment, general anatomical organisation and physiological function of farm animals, major body systems and their functions with emphasis on the digestive and reproductive systems; nutritional requirements of farm animals for maintenance and production, stages of livestock growth and development from conception to maturity; livestock appraisal, assessment of age, basic carcass and condition score evaluation, conformation and breed identification; general livestock marketing, reproductive management of farm animals for optimum fertility, new technology in animal breeding; the nature of animal diseases, immunity and its development; common causes of disease in farm animals, planned health programs for farm animals; and animal behaviour, genetic and environmental influences, welfare issues affecting the production and management of farm animals.

Assessment: Two 3000-word assignments (60%), 2-hour exam (40%).

208-161 Financial Management for Resource Ind I

Availability: Burnley, Creswick, Dookie and Glenormiston campuses.

Credit points: 12.5

HECS-band: 2

Coordinator: Mr Gavin Drew

Contact: 36 hours of lectures (3 hours per week) and 36 hours of tutorials (3 hours per week). Residential workshop for flexible-delivery students (*Semester 2*).

Description: Topics include:

- financial management (principles and responsibilities);
- financial recording/reporting of information systems;
- analysis and interpretation of accounting/financial information;
- business structure;
- financial statements (profit, cashflow, balance sheets);
- budgets and planning;
- costing methods;
- computer business applications;
- debt finance;
- leasing decisions;
- direct taxes;
- indirect taxes; and
- taxation planning issues.

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.

Recommended texts: Makeham and Malcolm, *The Farming Game Now*, Cambridge Press, 1993.

208-163 Farm Management

Availability: Dookie campus.

Credit points: 12.5

HECS-band: 2

Coordinator: Mr Graham Christie

Contact: 24 hours lectures 36 hours tutorials/practicals. Residential workshop for flexible-delivery students (*Semester 2*).

Description: The subject covers areas of:

- managerial function, style, type (formal/informal), responsibilities;
- introduction to the theory of farming systems;
- managing a production system;
- agricultural industry environment, structure and outlook;
- tactical planning and decision-making in farm management;
- use of decision-making tools by managers;
- enterprise and whole farm analysis, use of benchmarks and historical records in performance analysis;
- information sources and assessment; and
- quality assurance programs.

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.

207-274 Agricultural Economics and Policy

Availability: Dookie campus.

Credit points: 12.5

HECS-band: 2

Coordinator: Ms Ros Gall

Contact: 24 hours lectures; 24 hours tutorials. Residential workshop for flexible-delivery students (*Semester 2*).

Description: This subject is an overview of the ways prices for agricultural commodities are determined; and Australia's competitive position in the markets for our major exported agricultural commodities. Topics include importance of agriculture to the Australian economy; an economics perspective of the advantages and disadvantages of the major marketing alternatives for agricultural commodities; market support mechanisms; factors determining rural policy development; impact of government policies and the constraints within the Australian Constitution on marketing agricultural commodities; product marketing fundamentals, including marketing mix, segmentation and target markets, promotion, distribution and pricing strategies; and developing and implementing marketing plans.

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

Recommended texts: K O Campbell and B S Fisher, *Agricultural Marketing and Prices*, Longman Cheshire, 1991. • J R McColl-Kennedy, G Kiel, C H Lusch, V N Lusch, *Marketing Concepts and Strategies*, 2nd ed., Thomas Nelson, 1999.

Second year subjects

202-051 Industry Placement#

Note: This subject is a hurdle requirement for the completion of the advanced diploma.

Availability: Burnley, Creswick and Dookie campuses.

HECS-band: 2

Coordinator: Prof David Chapman

Contact: At least 12 weeks practical experience in an industry workplace, arranged by the student in consultation with their supervisor and the subject coordinator. The 12-week requirement must include two placements of at least 4 weeks duration, unless a variation is negotiated. Placements can be completed during the year, or during vacation breaks. Students may also be required to complete formal training in workplace occupational health and safety, risk assessment, and practical skills acquisition, delivered in block courses (*Year long*).

Description: Work experience is a feature of all ILFR advanced diploma courses. On completion of Industry Placement, students should have:

- direct experience of employment and of employer-employee relationships in a range of workplaces in the relevant land and food industries;
- improved inter-personal and vocational skills;
- broader understanding of the diversity of workplaces and professional roles in the relevant land and food industries;
- greater appreciation of the practical application of the content taught during their course; and
- improved practical skills relevant to the management and operation of businesses in the land and food industries.

Industry placements may be undertaken in a range of businesses in the relevant land and food industries. These include commercial farm, equine, horticulture or forest operations, service industries including financial institutions, government departments and agencies, processing and marketing companies. Students are responsible for organising their own placement, but will be assisted if requested and will be assigned a supervisor for the subject. Formal training in workplace occupational health and safety, risk assessment, and practical skills may be provided in block courses to give students an appreciation of safe working practices.

Assessment: A written report is submitted on each period of industry placement (identified in consultation with the supervisor) and is marked as pass/fail only. A journal must be kept for all placements and be made available for review by the student supervisor.

208-152 Agricultural Technology

Availability: Dookie campus.

Credit points: 12.5

HECS-band: 2

Coordinator: Mr Terry Clift

Contact: 24 hours lectures plus 24-36 hours tutorials and practicals. Residential workshop for flexible-delivery students (*Semester 1, repeat 2*).

Description: This subject should enable students to:

- understand the role of engineering in current agricultural and related practices;
- apply to these practices the relevant basic laws and principles of engineering;
- identify and know the use of a range of agricultural and related equipment;
- understand and be able to measure machinery performance, capacity and efficiency of a number of machines;
- make necessary machinery adjustments to improve performance and efficiency;
- determine the size and select an appropriate machine to perform a specific task; and
- understand environmental control techniques and their associated structures.

This subject covers the role of engineering in agriculture and develops the principles and explains the laws that are necessary to determine agricultural machinery performance specifications, fluid behaviour for both hydraulic power transmission and rural water supply specifications, agricultural structures requirements. Topics covered will include:

- performance - mechanical performance, hydraulic performance, pressure, flow rate, torque, power, velocity and speed, efficiency, stress, strain, voltage and current, measurement, accuracy, power transmission, engine cycles, engine components, engine performance, maintenance;
- fluid behaviour - pressure, flow rate, head, head loss, pump and motor performance, pipe flow, pipe and pump specifications;
- structural requirements - functional design, loads, materials, controlled environments;
- critical selection criteria - performance and efficiency measurement of harvesters, trucks, tractors, sprayers, tillage and sowing equipment, timeliness costs; and
- machinery operations - cultivating, distributing, harvesting, handling, processing, storage.

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.

207-272 Water and Land Management

Availability: Dookie and Glenormiston campuses.

Credit points: 12.5

HECS-band: 2

Coordinator: Dr Peter May

Contact: 24 hours lectures plus 24–36 hours tutorials and practicals. Residential workshop for flexible-delivery students (*Semester 1, repeat 2*).

Description: This subject should enable students to:

- understand the ecological principles, which influence the management of sustainable systems;
- foster attitudes toward the philosophy of sustainable management;
- analyse the practices and management strategies for natural resource management for sustainable farm productivity and lifestyles;
- apply appropriate principles and methods in physical farm planning;
- competently develop a plan for a property, which incorporates considerations of long term sustainability, flexibility, labour efficiency and economic viability;
- and plan and develop farm water supply systems for both stock and domestic use and irrigation.

The content includes:

- land degradation processes and reclamation strategies;
- strategies for maintaining soil structure and nutrient status on farms;
- evaluation of sustainability in a range of farming systems, including rainfed cropping, irrigation, intensive grazing, rangeland and intensive animal systems;
- farmer and urban attitudes to sustainable land use issues;
- principles and benefits of farm planning;
- description of the farm environment - climate and resources, land capability classification, land degradation and reclamation;
- aerial photography - use and interpretation, mapping natural features and land degradation;
- conservation farming;
- roles of trees on farms;
- role of natural habitat in farm systems, present and potential land and capital values;
- strategies for change on the farm - management practices, layout changes;
- planning changes to farm layout - to overcome land degradation problems/risks, for greater efficiency of labour use/stock movement, for new enterprises, fire control, water distribution and for water or wildlife conservation;
- planning changes to farm practices, for more efficient use of resources - crop sequences, tillage practices, chemical use, grazing/forage management etc., integration of crop and livestock and vermin and pest control;
- access, roads, laneways, fencing, planning tree planting and revegetation and fodder reserves, methods and economics of tree planting, financial and taxation implications of farm planning, setting priorities and implementing the plan, 'group Whole Farm Planning' courses and community issue and whole farm planning;
- conservation, utilisation and distribution of water on the farm, as well as the planning and development of farm water supply schemes;
- water conservation - water sources, ground water, catchment yield, peak discharge, return periods, rainfall intensity, evaporation, storage volumes, bywash design, storage construction, soil types for construction;
- water utilisation - stock and domestic water use, water quality, irrigation requirements, evaporation, storage requirements, flow rates; and
- water reticulation - flow-rates, water requirements, pipe flow, channel flow, pump performance, pump selection troughs, reticulation design, water supply location and layout.

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.

208-261 Pastures and Grazing Management

Availability: Dookie campus

Credit points: 12.5

HECS-band: 2

Contact: 24 hours lectures plus 24–36 hours tutorials and practicals. Residential workshop for flexible-delivery students (*Semester 1*).

Description: This subject should enable students to:

- understand the role of different species in a pasture mixture;
- select pasture species and mixtures for particular climates, soil types and end uses;
- understand the principles and practice of pasture improvement and renovation;

- develop pasture growth curves for a grazing property;
- calculate the feed requirements for livestock for a given period;
- assess feed quality using visual and laboratory processes;
- develop strategies to effectively match pasture growth to livestock feed requirements;
- plan a fodder conservation program, including the use of fodder crops and lucerne; and
- identify pasture damage by insects and disease and implement a control program.

The content includes:

- pasture species, growth cycles, roles of grasses and legumes in pastures, recommended cultivars, basis of selection for different areas, pasture renovation and the need for pasture improvement;
- pasture establishment techniques and strategies; pre-sowing management, post-sowing management; management of pests and disease;
- special management requirements of different pasture cultivars;
- principles and practice of fertiliser management.;
- assessment of seasonal pasture production;
- grazing management for maintenance of seasonal productivity;
- stocking rate considerations for different climate/soil and pasture situations;
- the management of lucerne stands for grazing and fodder conservation;
- identification of the common weeds in pastures and poisonous plants in pastures;
- common pasture pests and diseases that cause economic damage;
- pasture management in relation to short term and long term feed planning;
- feed budgeting; and
- comparing different fodder conservation options.

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.

208-269 Managing Staff

Availability: Burnley, Creswick, Dookie and Glenormiston campuses.

Credit points: 12.5

HECS-band: 2

Coordinator: Mr Peter McSweeney

Contact: 24 hours lectures 24 hours tutorials. Residential workshop for flexible-delivery students (*Semester 1, repeat 2*).

Description: The subject introduces the role and functions of people managers, and develops practical skills and knowledge for performing these functions.

At the end of the course students should be able to:

- understand and describe the role and functions of management, supervision and leadership;
- understand and describe how work is organised in terms of organisational structures and job design;
- explain the elements of productivity, quality and goal achievement and the supervisor's role in ensuring this achievement;
- describe the factors that influence individual and group behaviour as a basis for motivating staff, managing conflict and change, and leading teams;
- understand and apply proper procedures for human resource management functions; and
- explain in practical terms the obligations of employers and supervisors resulting from laws and regulations.

The subject covers areas of:

- the role and function of management, supervision and leadership;
- skill development for supervisors;
- work organisation, job design and organisational structures;
- supervisor's role in quality, productivity and goal achievement;
- motivating staff;
- managing conflict and change;
- human resource management functions - recruitment and selection - induction - performance appraisal - compensation - training and development - OHS - disciplinary and grievance procedures; and
- business legal obligations in relation to contracts, consumer law, law of tort, employment law, payroll obligations.

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

Prescribed texts: Cole, *Supervision - Management in Action*, Prentice Hall, Sydney, 1998.

Elective subjects

207-101 Economics of Resource Use

See full subject details on page 1.

208-162 Agribusiness Marketing

Availability: Dookie campus.

Credit points: 12.5

HECS-band: 2

Coordinator: Ms Ros Gall

Prerequisites: 207-274 Agricultural Economics and Policy

Contact: 24 hours of lectures and 36 hours of tutorials. Residential workshop for flexible-delivery students (*Semester 1, repeat 2*).

Description: The student should be able to:

- characterise marketing decisions for an individual firm;
- develop marketing plans for specific agribusiness firms;
- develop strategic plans for a specific agribusiness firms;
- apply market research techniques;
- develop effective communication tools;
- exhibit awareness of the major bodies and conventions controlling world trade;
- understand the legal aspects of importing and exporting;
- appreciate the role of culture in international trade;
- analyse and conduct a trade negotiation;
- analyse and select a suitable option for a commodity trading contract;
- chart and analyse commodity price information; and
- describe the market channel and major operation for a range of major agricultural commodities.

The content includes:

- market planning;
- strategic marketing;
- marketing research;
- marketing project;
- total quality marketing;
- forecasting;
- competitive forces;
- market logistics;
- understanding economic influences on world trade and international agribusiness;
- sourcing primary and secondary market data;
- commodity trading options;
- market entry strategies;
- legal/political influences;
- socio-cultural influences;
- financing international trade;
- physical and financial risk management strategies;
- marketing channels and related organisations;
- interpreting trading contracts;
- market information services and market charting; and
- financing commodity trading and risk management.

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.

Prescribed texts: M R Czinkota, I A Ronkainen and M H Moffett, *International Business*, 3rd edition, The Dryden Press, Fort Worth, Texas, 1996. • Padberg, Ritson and Albisu (eds), *Agri-food marketing*, CAB International, New York, 1997.

208-164 International Agribusiness

Availability: Dookie campus.

Credit points: 12.5

HECS-band: 2

Coordinator: Ms Ros Gall

Contact: 24 hours lectures plus 36 hours tutorials or practicals. Residential workshop for flexible-delivery students (*Semester 2*).

Description: The student should be able to:

- appreciate the importance of agricultural exports to the Australian economy;
- exhibit awareness of the major bodies and conventions controlling world trade;
- understand the legal aspects of importing and exporting;
- and appreciate the role of culture in international trade.

The content includes:

- understanding economic influences on world trade and international agribusiness;
- sourcing primary and secondary market data;
- market entry strategies;
- legal/political influences;
- socio-cultural influences;
- financing international trade; and
- managing the risks involved with international trade.

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.

Prescribed texts: M R Czinkota, I A Ronkainen and M H Moffett, *International Business*, 3rd ed., The Dryden Press, Fort Worth, Texas, 1996.

208-204 Special Studies

Availability: Dookie campus.

Credit points: 12.5

HECS-band: 2

Coordinator: Mr Chris Laird

Prerequisites: Special Studies in Agriculture is available only to students who have completed all the requirements to the end of Semester 3. Special approval of the year coordinator is required in each case.

Contact: 3 hours per week. Residential workshop for flexible-delivery students (*Semester 2*).

Description: This is an individualised subject which enables students to pursue studies in areas of agriculture not otherwise covered in the normal subjects offered within the advanced diploma structure. The objective of the subject is to assist students to:

- acquire specialist skills appropriate to an area of study;
- develop greater depth or breadth of knowledge in an area of study; and
- develop industry contract in the area of special study.

A proposed study program of a previously approved study area must be devised with a specific lecturer and approved by the coordinator. The program must demonstrate availability of expertise within the institute or from industry to provide guidance to the student, feasibility of the study within the constraints of resource and time, necessity of the study to the student's overall academic objectives, limits of the study in topics and depth of study, industry input necessary to complete the study, the level of academic rigour is appropriate to third year level studies, methods of assessment.

Assessment: Individual assessment contracts.

208-259 Animal Science II

Availability: Dookie campus.

Credit points: 12.5

HECS-band: 2

Coordinator: Mr Chris Laird

Prerequisites: 208-157 Animal Science I

Contact: 24 hours of lectures, 36 hours tutorials and practicals. Residential workshop for flexible-delivery students (*Semester 1*).

Description: To enable students to:

- identify the quality of farm animal feed components;
- determine feeding strategies and ration formulations for the maintenance and production of farm animals;
- determine and evaluate the economics of special purpose feeding systems;
- identify healthy farm animals and evaluate the production and economic losses that may occur through animal disease;
- identify diseases commonly affecting farm animals and select suitable prevention and control measures that may be adopted for the disease;
- describe the structure of genes and demonstrate an understanding of their functions;
- discuss the range of genetic evaluation programs and their use in breeding systems; and
- evaluate problems relating to reproductive performance of grazing and housed animals, selection methods and achieving genetic gain, setting breeding objectives and aiming to achieve these objectives.

This subject will also cover:

- performance criteria - the principles involved in developing a program for genetic improvement in an animal enterprise;
- performance recording schemes and the use of these to aid selection;
- selection of animals visually and using performance records; and
- advanced reproductive techniques.

Assessment: One 2.5-hour written examination (40%) and two assignments equivalent to 3000 words (30% each).

208-260 Intensive Animal Management

Note: This subject involves the use of animals. Students should be aware that this is an essential part of the subject and exemption from this component is not possible.

Availability: Dookie campus.

Credit points: 12.5

HECS-band: 2

Coordinator: Mr Andrew Almond

Contact: 24 hours lectures plus 24-36 hours tutorials and practicals. Residential workshop for flexible-delivery students (*Semester 2*).

Description: This subject should enable students to:

- explain the structure and function of the various sectors in the Australian intensive animal industries;
- investigate the range of production alternatives in the Australian pig and poultry industries and the factors which influence these alternatives;
- apply their understanding of the factors which underline the management of pig, poultry and feedlot enterprises to practical situations;
- discuss concepts of QA programs in various sectors of the intensive animal industries;
- understand concepts of feedlot design, animal nutrition and health of feedlot animals;
- monitor, evaluate, control and manage the environment in a building used for intensive housing of animals, and understand how the environment of the animals influences production; and
- discuss the appropriate legislation and regulations within the intensive animal industries.

The content includes:

- the structure of the Australian intensive animal industries, patterns and trends of animal holdings, herd and flock size and production levels;
- specific aspects intensive animal breeding and management, nutritional requirements of various classes of stock; significant diseases, animal behaviour, and industry marketing strategies; and
- legislation regarding the establishment of facilities; requirements of design including welfare considerations, industry codes of practice, strategies for sourcing foodstuffs and livestock, ruminant nutrition and preparation of appropriate rations to achieve performance targets, and the development of QA programs.

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.

208-264 Livestock Management

Availability: Dookie campus.

Credit points: 12.5

HECS-band: 2

Coordinator: Mr Howard Hanna

Contact: 24 hours of lectures, 36 hours of tutorials and practicals. Residential workshop for flexible-delivery students (*Semester 2*).

Description: This subject should enable students to:

- explain the structure and function of the various sectors in the Australian animal industries;
- investigate the range of production alternatives in the Australian animal industries and the factors which influence these alternatives;
- apply their understanding of the factors which underline the management of pig, poultry and feedlot enterprises to practical situations;
- discuss concepts of QA programs in various sectors of the animal industries;
- understand concepts of feedlot design, animal nutrition and health of feedlot animals;
- monitor, evaluate, control and manage the environment in a building used for intensive housing of animals, and understand how the environment of the animals influences production; and
- discuss the appropriate legislation and regulations within the animal industries.

The content includes:

- the structure of the Australian animal industries, patterns and trends of animal holdings, herd and flock size and production levels;
- specific aspects of animal breeding and management: nutritional requirements of various classes or stock, significant diseases, animal behaviour, and industry marketing strategies; and
- legislation regarding the establishment of facilities: requirements of design including welfare considerations, industry codes of practice, strategies for sourcing foodstuffs and livestock, ruminant nutrition and preparation of appropriate rations to achieve performance targets, and the development of QA programs.

Specialisation into specific animal industries will be conducted through assignments and practicals.

Assessment: One 2.5-hour written examination (40%) and two assignments equivalent to 3000 words (30% each).

208-265 Integrated Pest and Weed Management

Availability: Dookie campus

Credit points: 12.5

HECS-band: 2

Coordinator: Mr Ken Young

Contact: 24 hours lectures plus 24-36 hours tutorials and practicals. Residential workshop for flexible-delivery students (*Semester 2*).

Description: Upon completion of this subject students should be able to:

- identify the principles of integrated pest and weed management;
- identify the common range of pests and diseases that impact on crops and pastures;
- recall how population change occurs under different climatic and other factors; and
- document physical loss from pests and disease, and identify suitable time for control for economic control.

The content includes:

- causes of crop and pasture loss including arthropods and animal pests, weeds and plant pathogens;
- crop health assessment;
- principles and methodology of crop protection including pest exclusion, crop management practices, chemical control, biological control, and genetic resistance;
- economic assessment of control strategies;
- monitoring pest and weed populations and determining optimum control strategies; and
- case studies of current and proposed integrated pest and weed control programs.

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.

208-266 Crop Improvement

Availability: Dookie campus.

Credit points: 12.5

HECS-band: 2

Coordinator: Dr Rob Norton

Contact: 24 hours lectures plus 24-36 hours tutorials and practicals. Residential workshop for flexible-delivery students (*Semester 1*).

Description: This subject should enable students to:

- describe the limits that exist for developing crops and pastures in an environment;
- describe the way crop and pasture products are used and how these quality parameters may be manipulated genetically and agronomically; and
- appreciate how environment, genotype, crop management and storage affect crop quality.

The content includes:

- seed and bulk commodity quality, freedom from contamination, genetic purity and fitness for purpose;
- chemistry of quality - proteins, fats, carbohydrates;
- wheat quality and baking;
- grain protein and baking quality;
- malting and brewing and barley quality;
- feed grains and livestock rations;
- pulse crops and protein quality. Oilseed quality and fatty acid composition;
- quality testing procedures;
- breeding and crop improvement including the impact of biotechnology; and
- plant breeders rights and variety development and commercialisation.

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.

208-267 Financial Management for Resource Ind II

Availability: Dookie, Creswick and Glenormiston campuses.

Credit points: 12.5

HECS-band: 2

Coordinator: Assoc Prof Bill Malcolm

Prerequisites: 208-161 Financial Management for Resource Industries I and 208-163 Farm Management.

Contact: 36 hours of lectures and 36 hours of tutorials. Residential workshop for flexible-delivery students (*Semester 1*).

Description: The student would be able to:

- understand investment analysis/capital budgeting in order to analyse investments;
- understand strategies for coping with risk and uncertainty in decision-making;
- be able to appraise assets for acquisition, leasing options to ownership;
- understand investment principles (both in and out of the principal industry);
- understand the taxation implications of investment and finance decisions;
- understand the issues involved in the transfer of a business;
- understand the strategic management process and its application to farming;
- develop a strategic business plan to improve the productivity and profitability for rural business, giving due consideration to enterprise selection, business risk and changing business environment; and
- complete a comprehensive financial analysis of plan: interpret and critically analyse the project's results, draw rational conclusions and identify key success factors.

The subject covers areas of:

- investment analysis - capital budgets, discounted cash flow techniques, cost benefit;
- development budgets;
- asset valuation;
- land valuation;
- asset acquisition - purchase - rent - lease - syndication;
- stock market investment;
- risk management strategies - futures - insurance - quantitative decision analysis;
- advanced taxation planning and issues; and
- business transfer issues.

Students will undertake a number of case studies to develop strategic management skills before undertaking a project of significant size which exhibits original investigation, analysis and interpretation, and which results in the production of a well-written and presented report.

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.

Prescribed texts: Makeham and Malcolm, *The Farming Game Now*, Cambridge Press, 1993. • Coulthard, Howell and Clarke, *Business Planning - The Keys to Success*, MacMillan Education Australia Pty Ltd, South Melbourne, 1996.

208-268 Farm Management II

Availability: Dookie campus.

Credit points: 12.5

HECS-band: 2

Coordinator: Mr Graham Christie

Contact: 24 hours lectures, 36 hours tutorials/practicals. Residential workshop for flexible-delivery students (*Semester 2*).

Description: At the end of the course students should be able to:

- understand the strategic management process and its application to farming;
- develop a strategic business plan to improve the productivity and profitability for a farm or rural business giving due consideration to enterprise selection, business risk and changing business environment; and
- complete a comprehensive financial analysis of plan; interpret and critically analyse the project's results, draw rational conclusions and identify key success factors.

Students will undertake a number of case studies to develop strategic management skills before undertaking a project of significant size which exhibits original investigation, analysis and interpretation and which results in the production of a well-written and presented report.

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.

Prescribed texts: Coulthard, Howell and Clarke, *Business Planning - The Keys to Success*, MacMillan Education Australia Pty Ltd, South Melbourne, 1996. • Makenham and Malcolm, *The Farming Game Now*, Cambridge Press, 1993.

208-272 Commodity Marketing

Availability: Dookie campus.

Credit points: 12.5

HECS-band: 2

Coordinator: Mr Malcolm Wyeth

Contact: 24 hours lectures, 36 hours tutorials/practicals. Residential workshop for flexible-delivery students (*Semester 2*).

Description: At the end of the course students should be able to:

- analyse and conduct a trade negotiation;
- analyse and select a suitable option for a commodity trading contract;
- chart and analyse commodity price information;
- take an effective bargaining position as a primary producer, trader and end user of commodities; and
- describe the market channel and major operation for a range of major agricultural commodities.

The subject covers areas of:

- marketing channels and related organisations;
- concentration of ownership of product;
- commodity trading options;
- interpreting trading contracts;
- market positioning;
- physical and financial risk management strategies;
- market information services and market charting; and
- financing commodity trading and risk management.

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.

Prescribed texts: Padberg, Ritson and Albus (eds), *Agri-food Marketing*, CAB International, New York, 1997.