KAA100 - Introduction to Regional Science 1A

Description: Introduces students to what spatial, locational and identity factors are and how they influence issues and shape policy responses at a regional level. This unit tracks the ideas and concepts that constitute regional science as a discipline and provides an introduction to some of the analytical instruments used in regional science. The unit explores the economic, geographical and science based instruments that provide the basis for analysis and understanding include: regional economics; development planning in regional communities; key concepts in sustainable development; regional impact models; spatial econometrics; geography and the new knowledge economy.

Staff: Dr T McCall

Teaching Pattern: 2 lectures, 1 tutorial weekly (13 wks)

Assessment: 2,500-word essay (40%), tutorial assessment (10%), 2-hr end-of-sem exam (50%)

Required Texts: Reader

Unit Delivery Information:

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KAA101 - Introduction to Regional Science 1B

Description: Applies the knowledge of regional science to a number of case studies to illustrate the efficacy of regional science as a discipline in applied research. Students will learn how regional science techniques and analysis has been applied to case studies that involve community economic development projects; strategic economic policy development for regional communities and development plans for regional towns. Case studies will be drawn from Dorset, West Tamar and Circular Head municipalities in Tasmania to illustrate how regional science approaches inform policy development. Students will be encouraged to critically assess these approaches and apply regional science policy tools to similar case studies.

Staff: Dr T McCall

Teaching Pattern: 2 lectures, 1 tutorial weekly (13 wks)

Assessment: 2,500-word essay (40%), tutorial assessment (10%), 2-hr end-of-sem exam (50%)

Required Texts: Reader

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KAA201 - Workplace Internship

Special Note: The focus of the unit will relate to either Natural Resource Management or Business Enterprise & Innovation, depending upon the Stream chosen.

Description: Students undertake a semester of project-oriented study that integrates work and learning. The student is physically located in the workplace where appropriate or undertakes a self-directed but supervised research project determined in collaboration with the internship sponsor, academic coordinator and the student. The program is offered at second year as an incentive for students to locate their academic skills in a real world situation prior to their completion of their degree program. It aims to increase awareness and experience of wider social and cultural factors that shape applied regional research and project management.

Staff: Dr Tony McCall (Co-ordinator)

Teaching Pattern: Supervised research by co-ordinator in conjunction with workplace co-ordinator

Assessment: 3,500-word report

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KDA111 - Environmental Design 1A

Description: Students develop their design appreciation and skills through a series of exercises which explore design responses to human activities, comfort, energy-use, enclosure and containment of space, materials and context. They develop design skills of organisation. Conceptual thinking in three dimensions is developed through tutorial discussion. Work is presented through graphic media such as freehand drawing, perspective drawing, architectural drawing, computer graphics, information processing, photography, model making, and building. Communication skills are taught in conjunction with design project work.

Staff: Dr K McLeod

Teaching Pattern: lecture, studio and seminar; 4 hrs weekly (13 wks)

Assessment: review of submitted portfolio containing all project work

Offered in Courses: [ D3A ]

Unit Delivery Information:
KDA112 - Environmental Design 1B
Description: Introduces students to landscape and cultural issues affecting and influencing design intervention. They study both natural and artificial environments, developing skills of observation and analysis as a basis for developing responses to context. They learn of the ecological issues associated with design. Presentation work is developed through tutorial discussion. Work is presented through graphic media such as freehand drawing, perspective drawing, architectural drawing, computer graphics, information processing, photography, model making, and building. Communication skills are taught in conjunction with project work.
Staff: Dr C McLeod
Teaching Pattern: lecture, studio and seminar; 4 hrs weekly (13 wks).
Assessment: review of submitted portfolio containing all project work
Offered in Courses: [ D3A ] [ S3T ]

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KDA114 - History & Theory in Design 1
Description: Covers the principal periods in the history of western architecture up to the 18th century, including its links with Western Asia and North Africa. It stresses the relationships between building construction and architectural form and space, between architecture and its cultural context, and between architecture and urban and landscape design. The studio component deals with the application of knowledge and understanding of architectural history and theory to the practice of design.
Staff: Dr A Neale
Teaching Pattern: lectures, seminars and studios; 4 hrs weekly (13 wks)
Assessment: written and graphic /model-making assignments, seminar presentations, slide test
Offered in Courses: [ D3A ]

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KDA115 - Building Technology in Design 1
Description: Introduces the key aspects of Building Technology while focusing on issues of Architectural Science, sustainability, materials, processes and structure. The relationships between technology and design are emphasised. Includes site visits and workshop projects.
Staff: Dr Z Bromberak
Teaching Pattern: lectures, tutorials, site visits and workshops and seminars
Assessment: assignments, tests, seminars
Offered in Courses: [ D3A ]

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KDA121 - Environmental Design 2A
Description: Is a continuation of KDA111, developing responses to human activities, comfort, enclosure of space, energy-use, materials, construction and context. Students develop design skills of organisation of conceptual thinking in three dimensions in response to a range of environments. Graphic presentation and communication skills are taught at a higher level appropriate to the design projects.
Requisites: PREREQ - KDA111, KDA112
Staff: Dr C McLeod
Teaching Pattern: lecture, studio and seminar; 4 hrs weekly (13 wks)
Assessment: review of submitted portfolio containing all project work
Offered in Courses: [ D3A ]

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KDA122 - Environmental Design 2B
Description: Is a continuation of KDA112. The complexity of projects increases and students are expected to deal with the issues of landscape, culture and design in greater depth. Urban, suburban and natural environments are explored. Ecological and environmental issues are further investigated. Graphic presentation and communication skills are taught at a higher level, appropriate to the design projects.
Requisites: PREREQ - KDA111, KDA112
Staff: Dr C McLeod
Teaching Pattern: lecture, studio and seminar; 4 hrs weekly (13 wks)
Assessment: review of submitted portfolio containing all project work and assignment
### KDA122 - History & Theory in Design 2

**Description:** Covers the principal periods in the history of Western Architecture from the 18th century enlightenment to the mid-20th century modernism. It stresses the relationships between building construction and architectural form and space, between architecture and its cultural context, and between architecture and urban and landscape design. The studio component deals with the application of knowledge and understanding of architectural history and theory to the practice of design.

**Staff:** Dr A Neale

**Teaching Pattern:** lectures, seminars, studios; 4 hrs weekly (13 wks)

**Assessment:** written and graphic / model-making assignments, seminar presentations, slide test

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### KDA125 - Building Technology in Design 2

**Description:** Examines the construction and structural systems of domestic sized buildings and the issues that surround them. This includes structures, timber framing and trusses, services, finishes and sustainable design. Includes site visits and workshop projects.

**Staff:** Dr Z Bromberek

**Teaching Pattern:** lectures, tutorials, site visits workshops and seminars

**Assessment:** assignments, tests, and seminars

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### KDA201 - History and Theory in Design 4 [A]

**Description:** Examines the history and theory of architectural development in Asia, including traditional, colonial and contemporary architecture, architectural links between East and West, and the postcolonial reinterpretation of Eastern architecture. The unit emphasizes relationships between building construction and architectural form and space, architecture and its cultural context, and architecture and urban/landscape. It stresses the relationship between building construction and architectural form and space, between architecture and its cultural context, and between architecture and urban and landscape design. The studio component deals with the application of knowledge and understanding of architectural history and theory to the practice of design.

**Requisites:** MEXCL - KDA364

**Staff:** Dr J Gatley

**Teaching Pattern:** 2 x 1hr lectures weekly, 2 x 1hr tutorials per week (13 weeks)

**Assessment:** written and graphic / model-making assignments, seminar presentations, slide test.

**Required Texts:** nil

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### KDA211 - Design Studio 3

**Description:** Develops fundamental skills in architectural design, including design investigation, design communication, schematic design and design development. Students explore and integrate design criteria including contextual response, activity support and construction principles. Students need to demonstrate an ability to design small to medium scale buildings of moderate complexity and successfully integrate them with their sites. Studio components of History and Theory in Design 3 and Building Technology in Design 3 will extend the practice of studio design in both unit areas in accordance with unit descriptions KDA212 and KDA213.

**Requisites:** PREREQ - KDA111, KDA112, KDA121, KDA122

**Staff:** Dr J Gatley

**Teaching Pattern:** lecture, studio and seminar

**Assessment:** review of submitted portfolio containing all project work

### Unit Delivery Information:

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KDA212 - History & Theory in Design 3

**Description:** Covers important 20th century architectural developments and movements after World War II. The unit develops an understanding of the complex interweaving of modernist, regionalist and postmodernist approaches in this period. It provides the foundation for a deeper exploration of architectural theory and its relation to practice in later units. The studio component deals with the application of knowledge and understanding of architectural history and theory to the practice of design.

**Staff:** Dr J Gatley

**Teaching Pattern:** lectures, seminars, studios; 4 hrs weekly (13 wks)

**Assessment:** written and graphic /model-making assignments, seminar presentations, slide test

**Offered in Courses:** [ D3A ] [ F3J ]

**Unit Delivery Information:**

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KDA213 - Building Technology in Design 3

**Description:** Examines in detail the construction and structural systems used in medium sized commercial buildings. Themes within this main focus include structural mechanics, thermal design, documentation and detailing, and sustainable design. A design-problem based approach is taken.

**Staff:** Mr J Beall

**Teaching Pattern:** lectures, tutorials, site visits and seminars

**Assessment:** assignments, tests, and seminars

**Offered in Courses:** [ D3A ]

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KDA221 - Design Studio 4

**Description:** Develops an understanding and skill in the devising and detailing of construction for buildings of medium scale. Students are expected to develop fundamental skills at a greater level of competence and complexity than in KDA211. Project work focuses on the creation of architectural and constructional concepts, and the analysis and synthesis of a variety of design concerns. Studio components of History and Theory in Design 4 and Building Technology in Design 4 will extend the practice of studio design in both unit areas in accordance with unit descriptions KDA222 and KDA223.

**Requisites:** PREREQ - KDA111, KDA112, KDA121, KDA122, KDA211

**Staff:** TBA

**Teaching Pattern:** lecture, studio and seminar

**Assessment:** review of submitted portfolio containing all project work

**Offered in Courses:** [ D3A ]

**Unit Delivery Information:**

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KDA222 - History & Theory in Design 4

**Description:** Covers the development of architecture in Australia -- exploring the transfer and modification of ideas from elsewhere, especially Europe and North America, and regional responses to the Australian environment, as a foundation for the critical discussion of the issues facing architecture in Australia today. The studio component deals with the application of knowledge and understanding of architectural history and theory to the practice of design.

**Teaching Pattern:** lectures, seminars, studios and site visits; 4 hrs weekly (13 wks)

**Assessment:** written and graphic /model-making assignments, seminar presentations, slide test

**Offered in Courses:** [ D3A ] [ F3J ]

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KDA223 - Building Technology in Design 4

**Description:** Studies the statutory regulations and controls that shape building design and planning by focusing on a complex building design project. The themes within this main focus include fire rated timber structures, services and sustainable design.

**Staff:** Mr G Nolan

**Teaching Pattern:** lectures, tutorials, site visits workshops and seminars

**Assessment:** assignments, tests, and seminars

**Offered in Courses:** [ D3A ]

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### KDA302 - Stage Set/Design

**Special Note:** See School for further details. Unit is subject to numbers

**Description:** This studio develops skills in applying creative processes, testing crossovers between drama and physical settings. Students work in teams and refine interpretations of the musical or play by using core metaphors. The metaphors are then translated into design ideas that in turn develop into design proposals. Proposals are tested by modeling and presentations to clients including the Director, other groups working on the project and the cast.

**Staff:** Mr I Clayton

**Teaching Pattern:** Studio/Workshop

**Assessment:** Scale model, drawings, build works

**Offered in Courses:** [D3A]

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### KDA311 - Design Studio 5

**Description:** Develops students’ ability to design for open sloping sites, and expands the understanding of site analysis in this context, as a basis for design decisions. The unit also focuses on the social content of architectural programs, supported by related social and perceptual theory explored in KDA312 History and Theory in Design 5. In addition, it provides a vehicle for exploration of Building Technology ‘key themes’ in relation to medium scale buildings, in KDA313 Building Technology in Design 5.

**Requisites:** PREREQ - KDA211, KDA221

**Staff:** TBA

**Teaching Pattern:** Studio, lecture, seminar and site visits, 4 hrs weekly (13 wks)

**Assessment:** Review of submitted portfolio containing all project work and studio presentations

**Offered in Courses:** [D3A]

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### KDA312 - History & Theory in Design 5

**Description:** Focuses on the interrelations between the man-made environment, human perception, values and behaviour, and design. Some cross-cultural comparisons are made. Students are introduced to the role of the architect and post-occupancy evaluation of buildings. The studio component deals with the application of knowledge and understanding of these issues to the practice of design, with a focus on cultural and environmental sustainability.

**Staff:** Mr P Dorney

**Teaching Pattern:** Lecture, workshop/studio; 4 hrs weekly (13 wks)

**Assessment:** Written and graphic assignments

**Offered in Courses:** [D3A] [F3J]

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### KDA313 - Building Technology in Design 5

**Description:** Considers the internal environment, and the construction and detailing of interiors of commercial buildings. Within this main focus additional themes include substantiality in water use, energy and ventilation and the application of acoustics and day-lighting concepts. A design-problem based approach is taken.

**Staff:** Mr J Beall

**Teaching Pattern:** Lectures, tutorials, site visits, workshops and seminars

**Assessment:** Assignments, tests, and seminars

**Offered in Courses:** [D3A]

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### KDA321 - Design Studio 6

**Description:** Develops students’ ability to design a complex multi-level, mixed use building in a tight urban context, and expands the understanding of program and site analysis in this context, as a basis for design decisions. The unit also focuses on the application in design of current architectural and theoretical ideas, supported by related contemporary theory explored in KDA312 History & Theory in Design 5. In addition, it provides a vehicle for exploration of Building Technology ‘key themes’ in relation to medium scale buildings, in KDA323 Building Technology in Design 6, including the integration of services.

**Requisites:** PREREQ - KDA211, KDA221, KDA311

**Staff:** TBA

**Teaching Pattern:** 4 hrs weekly: studio, lecture, seminar and site visits (13 wks)
Assessment: review of submitted portfolio containing all project work, and studio presentations

Offered in Courses: [ D3A ]

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KDA322 - History & Theory in Design 6

Description: Gives an overview of important modernist and contemporary architectural theory. The unit concentrates on those ideas most relevant to current practice, including environmentally sustainable design, and aims to assist students in developing their own design philosophy. The studio component deals with the application of knowledge and understanding of architectural theory to the practice of design.

Staff: Mr P Dorney

Teaching Pattern: lecture, workshop/studio, 4 hrs weekly (13 wks)

Assessment: written and graphic assignments, seminar presentations

Offered in Courses: [ D3A ] [ F3J ]

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KDA323 - Building Technology in Design 6

Description: Examines the construction, structure and regulations involved in larger buildings. Within this main focus are additional themes of sustainable design, embodied energy concepts and application, envelope design, building costs and professional issues. A design problem-based approach is taken.

Staff: Mr J Beall

Teaching Pattern: lectures, tutorials, site vists, workshops and seminars

Assessment: assignments, tests and seminars

Offered in Courses: [ D3A ]

Unit Delivery Information:

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KDA341 - CUD - Object Based Modelling

Special Note: Please see School for details. Unit is subject to numbers

Description: This unit develops the theme of 3d representation of the built environment using an object based modelling paradigm. It explores contemporary theory of modelling approaches and the use of building databases. The unit focuses on modelling using parametric objects as well as rendering techniques. Using tools such as Archicad, students gain modelling literacy as well as understanding the use of object based modelling in the profession. Object based modelling is compared and contrasted with vector and free form modelling.

Staff: TBA

Teaching Pattern: Lectures, Tutorials

Assessment: Projects and continuous assessment

Offered in Courses: [ D3A ]

Unit Delivery Information:

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KDA342 - CUD - Building Simulation

Special Note: Please see School for details. Unit is subject to numbers

Description: This unit develops the theme of building simulation using 3D modelling. It explores contemporary theory of building simulation and its role in building modelling applications. The unit focuses on using the model to produce material quantities, assess solar access, light levels, acoustics and environmental indicators. Using tools such as ArchiCAD, VectorWorks or Ecotect students gain an understanding of building simulation and its use in the profession.

Staff: TBA

Teaching Pattern: Lectures, Tutorials (4 hours, 13 weeks)

Assessment: Projects and continuous assessment

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KDA343 - CUD - Vector Based Modelling

Special Note: Please see School for details. Unit is subject to numbers

Description: This unit develops the theme of 3d representation of the built environment using a vector based modelling paradigm. It explores contemporary theory of modelling approaches and the use of building databases. The unit focuses on polygonal and NURBS
modelling as well as rendering techniques. Using tools such as VectorWorks the students gain modelling literacy as well as an understanding of its use in the profession. Vector based modelling is compared and contrasted the object and free form modelling.

**Staff:** TBA

**Teaching Pattern:** Lectures, Tutorials (4 hours week, 13 weeks)

**Assessment:** Projects and continuous assessment

**Unit Delivery Information:**

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**KDA344 - CUD - Thermal Modelling**

**Special Note:** Please see School for details. Unit is subject to numbers

**Description:** This unit explores building thermal modelling, the heat and energy flows through building spaces and materials. Students will explore the historical context of thermal modelling, the various theoretical approaches and the role it plays in modern architectural practice. The unit uses real data collection and thermal modelling using software such as Ecotect to gain skills and an in-depth understanding of its use.

**Staff:** TBA

**Teaching Pattern:** Lectures, Tutorials

**Assessment:** Projects and continuous assessment

**Unit Delivery Information:**

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**KDA345 - CUD - Free Form Modelling**

**Special Note:** Please see School for details. Unit is subject to numbers

**Description:** This unit develops the theme of 3d representation of the built environment using a free form or NURBS based modelling paradigm. It explores contemporary theory of modelling approaches in this media and its use in environment modelling. The unit focuses on free form surface generation, rendering and animation techniques. Using tools such as Cinema 4D the students gain modelling literacy as well as an understanding of its use in the profession. Free form based modelling is compared and contrasted object and vector modelling.

**Staff:** TBA

**Teaching Pattern:** Lectures, Tutorials

**Assessment:** Projects and continuous assessment

**Offered in Courses:** [D3A]

**Unit Delivery Information:**

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**KDA346 - CUD - Print Publication**

**Special Note:** Please see School for details. Unit is subject to numbers

**Description:** This unit encompasses issues related to desktop publishing design and technology. The unit name indicates a broad content, covering aspects of both artistic and production concerns. At the same time, the focus of the subject area is closely aligned with issues of architectural design.image and, more specifically, its presentation.

**Staff:** Dr Z Brombererk

**Teaching Pattern:** studios and workshops

**Assessment:** Studio project print-outs

**Offered in Courses:** [D3A]

**Unit Delivery Information:**

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**KDA348 - CUD - Embodied Energy**

**Special Note:** Please see School for details. Unit is subject to numbers

**Description:** Embodied energy, as an indicator of the environmental performance of a building is explored in this unit. The theoretical background is discussed along with contemporary practice and use of embodied energy models. Students will use 3d computer simulation and other software to assess embodied energy modelling and to develop skills in its interpretation and use.

**Staff:** TBA

**Teaching Pattern:** Lectures, Tutorials

**Assessment:** Projects and continuous assessment

**Offered in Courses:** [D3A]

**Unit Delivery Information:**

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KDA361 - Landscape Design History/Heritage (Unit not offered in 2006)

Description: This unit provides an introduction to the practical and theoretical aspects of working constructively with heritage matters in the built environment. It covers traditional building materials and techniques; common problems and how to deal with them; the various organizations and authorities involved in administering heritage matters; the use and implications of the Burra Charter, how to investigate the history of a building through documentary sources and through its fabric; how to assess the significance of a building; how to prepare a simple conservation plan; and broad guidelines for new work. All architects have to work with 'heritage' issues sooner or later. This may be in adding to a new old building, adapting to an old building to a new use, or placing a new building in an historic context. A clear understanding of the issues and processes involved will enable an architect to work effectively in what may otherwise seem a frustrating environment.

Offered in Courses:

KDA363 - Garden/Architecture

Description: Buildings do not exist in a vacuum: all architecture has a setting, whether it is a city street or a large area of land. This unit is designed to assist architecture students, and others, to think creatively about the relationship between buildings and their immediate landscape surroundings. It will examine a wide variety of approaches to such designed landscapes, from the ancient civilizations of China, Japan, and the Middle East, through the Western European tradition, to the situation in Europe, North America and Australia in recent times. The studio will encourage the application of good design principles, derived from a deep understanding of the work of others, to new projects. Emphasis will be placed upon landscape design in relation to architecture, rather than landscape design as a separate discipline - hence the title Garden/Architecture

Staff: Dr A Neale

Teaching Pattern: lectures, tutorials and studios, 4 hours weekly (13 weeks)

Assessment: written and graphic assignments & seminar presentations

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KDA364 - Asian Architecture

Description: Examines the history and theory of architectural development in Asia, including traditional, colonial, and contemporary architecture, architectural links between East and West, and the postcolonial reinterpretation of Eastern architecture. The unit emphasizes relationships between building construction and architectural form and space, architecture and its cultural context, and architecture and urban/landscape design. The studio component deals with the application of knowledge and understanding of architectural history and theory to the practice of design.

Requisites: MEXCL - KDA201

Staff: Dr J Gatley

Teaching Pattern: 2 hr lecture, 2 hr tutorial per week for 13 weeks

Assessment: Written and graphic / model-making assignments, seminar presentations, slide tests

Offered in Courses: [ D3A ]

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KDA365 - History/Theory Elective

Description: This unit focuses on specific developments and movements introduced in the history and theory survey units, KDA114; KDA124 and KDA212. It pursues in depth the key architects, manifestoes and projects of the movement/s, the subsequent literature on them and thus a range of interpretations of them. As a result of its depth, the unit provides the foundation for the independent study and research that are components of later units. The studio component deals with the application of knowledge and understanding of architectural history and theory to the practice of design.

Staff: J Gatley

Teaching Pattern: lectures, seminars, studios; 4 hrs weekly (13 weeks)

Assessment: written and graphic/model-making assignments, seminar presentations

Required Texts: TBA

Recommended Texts: TBA

Offered in Courses: [ D3A ]

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KDA373 - Study Tour

Special Note: Please see School for details. Unit is subject to numbers

Description: Involves a study tour away from Tasmania. The tour includes visits to a range of buildings, sites, neighbourhoods and landscapes, and related architectural activities. The aim of the unit is to enhance students' understanding and appreciation of architecture, context and landscape by visiting and experiencing building and places of architectural and/or aesthetic interest and/or merit, in a location other than that in which they live. Students will photograph, sketch and analyse the buildings and places visited, culminating, upon their return to Launceston, in an exhibition.

Staff: Dr J Gatley

Teaching Pattern: Pre-tour lectures on the culture and architecture of the place to be visited, the tour itself, and a post-tour exhibition.
Assessment: Engagement with the tour, logbook, photographs, sketches and contribution to the exhibition. This unit is assessed on a pass/fail basis, without the allocation of percentage marks and grades.

Offered in Courses: [ D3A ]

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KDA381 - Learning by Making A

Special Note: Please see School for details. Unit is subject to numbers

Description: Studio projects are real and require full engagement with clients. Students experience design work in collaboration with consultants and Local authorities, and involves experience of small building design in a public location. Students will be required to submit formal documentation: to clients for their approval; to local council for development and or building approval. Students will employ model making a various scales to collaboratively develop and finalize designs. Concurrent to these workshop activities students use computers to prepare documentation and budget projections.

Staff: TBA

Teaching Pattern: Studio/workshop (4 hours week, 13 weeks)

Assessment: Scale model, drawings, builtworks

Offered in Courses: [ D3A ]

Unit Delivery Information:

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KDA382 - Learning by Making B

Special Note: Please see School for details. Unit is subject to numbers

Description: Studio projects are real and require full engagement with clients. Students experience design work in collaboration with consultants and Local authorities, and involves experience of small building design in a public location. Students will be required to submit formal documentation: to clients for their approval; to local council for development and or building approval. Students will employ model making a various scales to collaboratively develop and finalize designs. Concurrent to these workshop activities students use computers to prepare documentation and budget projections.

Staff: TBA

Teaching Pattern: Studio/workshop (4 hours, 13 weeks)

Assessment: Scale model, drawings, builtworks

Offered in Courses: [ D3A ]

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KDA391 - Environmentally Sustainable Design

Description: In this elective we will be 'unpacking' a series of theoretical environmental / architectural positions in order to investigate their relative merits, in terms of a specific architectural design project. Students will explore skills such as discourse analysis, critical thinking, writing and rhetoric, textual and graphic de-reconstruction, ethics, interviewing, philosophy-driven design and design for eco-tourism.

Staff: TBA

Teaching Pattern: Lectures, tutorials

Assessment: Assignments, Project

Offered in Courses: [ D3A ]

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KDA411 - Design Studio 7 (BArch)

Description: Design studios in the BArch differ from design studios in the BEnvDes course in that there is a shift in emphasis toward increasing professionalism in design practice and increasing expectation that students will demonstrate critical rather than exploratory thinking in relation to their architectural proposals. The unit explores issues related to complex, multi-level architectural projects. Emphasis is given to exploring environmentally sustainable strategies. Emphasis in this studio is placed on the detailed design and resolution of an architectural project.

Staff: TBA

Teaching Pattern: lecture, tutorials, workshop/studio components

Assessment: cumulative assignments

Offered in Courses: [ D3B ]

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KDA412 - Professional Studies 1

Description: Consists of two components covering the architect's responsibility and the building industry. The first develops a knowledge of the architect's responsibility to society, clients and the profession. Basic theory of law, courts and legal processes and concepts are examined and developed within the context of statute law as it applies to the building industry. The second explores the nature of the building industry and organisations within it. Modes of architectural practice and their legal implications are examined and applied to design and pre-construction documentation, tendering, procurement methods and construction stage matters.

Staff: Mr R van der Elst, Mr J Streeter

Teaching Pattern: lecture and seminar; 4 hrs weekly (13 wks)

Assessment: seminar presentations, written assignments, tests

Offered in Courses: [ D3B ]

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KDA413 - Building Technology in Design 7 (BArch)

Description: Examines the construction, structure, services and project delivery of tall and complex buildings. These issues are developed using a design project approach. Additional themes include sustainable design principles of tall and large buildings and project management.

Staff: Mr G Nolan

Teaching Pattern: lectures, tutorials, site visits, workshops and seminars

Assessment: assignments, tests, and seminars

Offered in Courses: [ D3B ]

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KDA421 - Design Studio 8 (BArch)

Description: Involves design problems of an urban scale. Typically studio projects address urban renewal or master planning strategies before focussing on resolution of architectural designs at a preliminary design stage.

Requisites: PREREQ - KDA411

Staff: TBA

Teaching Pattern: lecture, tutorial, workshop/studio components

Assessment: cumulative assignments

Offered in Courses: [ D3B ]

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KDA422 - Theory in Design 1 (BArch)

Description: Involves close critical reading of selected texts concerning architectural theory. These are drawn from sources ranging from long-standing theoretical traditions of contemporary relevance, to recent theory. Emphasis is placed on an ability to generate design ideas from theoretical positions.

Staff: Mr R Blythe

Teaching Pattern: lecture, workshop/studio; 4hrs weekly (13 wks)

Assessment: written and graphic/model-making assignments, seminar/tutorial presentations

Offered in Courses: [ D3B ] [ F3J ]

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KDA423 - Building Technology in Design 8 (BArch)

Description: Considers the concepts and principles of preparing complex building documentation and applies this to a team-based documentation project.

Staff: TBA

Teaching Pattern: lectures, tutorials, site visits, workshops and seminars

Assessment: assignments, tests and seminars

Offered in Courses: [ D3B ]

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KDA473 - Design Theory (BEnvDes Hons)

Description: A formal program of study, directly relevant to the theoretical basis of the candidate's field of research, selected from existing
units in architectural history and theory. Students are expected to take a leadership role in the unit, developing seminars on their chosen topic. Alternatively, students may take a relevant theory unit from elsewhere in the university program, subject to consultation with their supervisor. Examples include theory units in history, psychology and education.

Staff: Supervisor, as detailed in unit program
Teaching Pattern: as applies in the chosen unit (13 wks)
Assessment: continuous assessment of assignments and papers or as relevant in the chosen unit of study

Offered in Courses:  [D4A]

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KDA475 - Design Studies

Special Note: assessment, contact hours, teaching staff, and required/Recommended Texts: will vary according to the unit taken

Description: A formal program of studio-based or theoretical study, from any university program, which is directly relevant to the candidate’s field of research, to be chosen in consultation with the candidate’s supervisor.

Requisites: PREREQ - BEnvDes or equiv bachelor degree

Staff: Supervisor, determined by research topic

Assessment: review of submitted dissertation, and such interim papers as the supervisor shall determine.

Offered in Courses:  [D4A]

Unit Delivery Information:

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KDA476 - Introduction to Research

Description: A guided introduction to research theories and practices relevant to the student’s dissertation topic. Outcomes include a literature review; an outline of the proposed dissertation structure and content; a one-page statement of the dissertation problem or argument; and an essay of approximately 3000 words, examining the problem or argument in the context of the literature.

Requisites: PREREQ - BEnvDes or equiv bachelor degree

Staff: Supervisor, determined by research topic.

Teaching Pattern: 2 hrs tutorials weekly

Assessment: review of submitted portfolio containing all projects as listed above.

Required Texts: Evans D, How to Write a Better Thesis or Report, MelbUniv Press, 1995

Offered in Courses:  [D4A]

Unit Delivery Information:

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KDA477 - Dissertation A (BEnvDes(Hons))

Special Note: On completion of KDA477 students are awarded an XX result (result shown in another unit), the final result for this unit is awarded on completion KDA478. Students are required to enrol concurrently in KDA477 and KDA478.

Description: A program of supervised individual research, designed to allow students to explore in depth an area of environmental design of particular interest to them. The unit is undertaken throughout the year, and culminates in the submission of a dissertation of approximately 15,000 words.

Requisites: PREREQ - BEnvDes or equiv bachelor degree COREQ - KDA478

Staff: Supervisor, determined by research topic

Assessment: review of submitted dissertation, and such interim papers as the supervisor shall determine.

Offered in Courses:  [D4A]

Unit Delivery Information:

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KDA478 - Dissertation B (BEnvDes(Hons))

Special Note: On completion of KDA477 students are awarded an XX result (result shown in another unit), the final result for this unit is awarded on completion KDA478. Students are required to enrol concurrently in KDA477 and KDA478.

Description: A program of supervised individual research, designed to allow students to explore in depth an area of environmental design of particular interest to them. The unit is undertaken throughout the year, and culminates in the submission of a dissertation of approximately 15,000 words.

Requisites: PREREQ - BEnvDes or equiv bachelor degree COREQ - KDA477

Staff: Supervisor, determined by research topic

Assessment: review of submitted dissertation, and such interim papers as the supervisor shall determine.

Offered in Courses:  [D4A]

Unit Delivery Information:
## KDA500 - Architecture Honours

**Description:** A series of special tutorials in existing B.Arch units DS9 (KDA511) and PP (KDA521). These tutorials are aimed at developing a student's special research/design interests within the areas in which the School of Architecture and staff have recognised research strengths. In the DS9 studio those enrolled in Honours would be required to produce a written paper of 5,000 words or equivalent outlining their ethos in relation to their project (this could also take a more scientific or history bent if that suited the student's Honours interests). This unit could count as credit in the proposed coursework master degree program.

In the PP unit honours students would prepare the equivalent of a 10,000 word exegesis or equivalent that would give specific focus to their PP design project. This focus may be in any of the school's interest areas eg theory, history, learning by making, computing, ESD etc. This unit could count as credit in the proposed coursework master degree program.

**Requisites:** PREREQ - min 65% grade point average over first year of the B.Arch

**Staff:** Mr R Blythe (Coordinator), and all academic staff of the School of Architecture

**Assessment:** may include any or a combination of the following: design portfolio/presentation, written report, technical report, exegesis

**Required Texts:** Borden I, *The Dissertation: An Architecture Student's Handbook*

**Recommended Texts:** Recommendations vary with each studio project but basic texts dealing with research methods and techniques will be relevant in each case.

**Cryer P, The Research Student's Guide to Success**

**Greenfield T, Research Methods : Guidance for Postgraduates**

**Greenfield T, Research Methods for Postgraduates**

**Harmon C, Using the Internet, Online Services & CD-ROMSfor Writing Research and Term Papers**

**Locke LF, Proposals that Work: A Guide for Planning Dissertations and Grant Proposals**

**Madsen D, Successful Dissertations and Theses: A Guide to Graduate Student Research from Proposal to Completion**

**Meloy JM, Writing the Qualitative Dissertation: Understanding by Doing**

**Naourn SG, Dissertation Research and Writing for Construction Students**

**La Nauze JA, 1911-1990, Presentation of Historical Theses: Notes for University Students**


**Stevens C3, Doing Postgraduate Research in Australia**

**Offered in Courses:** [D4B]

**Unit Delivery Information:**

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## KDA501 - Professional Project Honours

**Description:** Professional Project is the final unit and culmination of the BArch program, requiring students to develop their selected design project from site analysis and initial concept, through preliminary design, design development and preliminary constructional design stages, to final presentation. The unit will develop students' ability to program and manage a semester-long project, to present their work in a professional manner and to articulate clearly the rationale behind the sequence of decisions that have led to the final design proposal.

Students who have not achieved a minimum grade of Credit for their professional project brief written in KDA512 will be provided a project brief by the Unit Coordinator.

The aim of the unit is for the student to demonstrate the skills, knowledge and understanding needed in the design of a major project and to demonstrate these at a level appropriate to a student at the end of five years study in architecture as described by the RAIA Education Policy and the relevant AACa competencies.

In addition honours candidates will complete an integrated research project developed in KDAxxx during first semester. This project will take the form of an exegesis presented at the end of the year as part of the Professional Project presentation to a panel of assessors (usually six) including a combination of school staff, local external assessors and interstate external assessors. External assessors will be experienced professionals or academics.

While it is intended that most students will embed their honours work in the design studio presentations the option is available for a student who gained the necessary approvals in first semester as part of KDAxxx to submit a written piece in which case the exegesis will be assessed using the School's normal procedure for assessing honours thesis (one internal reader - not the unit coordinator - and one external to the school, who recommend a result to the Research Committee who decide the final grade). The percentage weighting of the exegesis and the design project for final semester can be negotiated on a case-by-case basis with the School's research committee through the unit coordinator.

**Staff:** Coordinator: Mr. R Blythe

**Teaching Pattern:** Lectures, 13 x individual tutorials in small group setting

**Assessment:** 100% studio project.


**Offered in Courses:** [D4B]

**Unit Delivery Information:**

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KDA502 - Theory in Design 2 Honours

Special Note: available to those students a minimum of 65% grade point average in fourth year of D4B.

Description: In this unit students learn how to write a professional architectural brief and to extend a chosen aspect of this brief by commencing a project.

During semester students are guided through the process of pursuing a self directed investigation of the historical, social, environmental, technological, regulatory, and contextual issues associated with their proposed professional project, selected for semester 2, and prepare an architectural brief. In addition, the unit encourages students to develop a sound ethos and theoretical position from which to undertake their final semester Professional Project.

A series of special seminars is offered focussing on research methods and skills within the areas in which the School of Architecture staff have recognised research strengths. These seminars will assist students in developing their honours topic. The honours topic and project will be related to their Professional Project and will be presented as part of their end of year presentation for KDA521. In special circumstances, and at the discretion of the unit coordinator, students may elect to produce a written honours thesis. Approval to do so needs to be sought in first semester. Research tasks are undertaken in parallel to the series of seminars for which students will receive formative feedback. In undertaking these tasks students will produce a table of contents, a project synopsis, an annotated bibliography, a literature review and will write out in full or produce an equivalent set of drawings which expand on one section of their thesis (equivalent to 25% of the proposed content of the exegesis). The final exegesis, produced in KDA502 will be 10,000 words or the equivalent in the form of drawings.

In addition to the seminars dedicated to this unit, students are expected to attend the lunch-time lecture series and the School's research seminar series.

Staff: Coordinator: R Blythe. All research active staff in the school will participate in the seminars for this unit.

Teaching Pattern: 10 x 1hr Lectures, informal tutorials, 4 x studio workshops, 8 x 1hr seminars

Assessment: Formative assessment of research tasks. 100% written brief.

Required Texts:

Recommended Texts: Honours Exegesis:
- Cryer, Pat. The research student's guide to success.
- Harman, Charles. Using the Internet, online services & CD-ROMS for writing research and term papers.
- Locke, Lawrence F. Proposals that work : a guide for planning dissertations and grant proposals.
- Madsen, David. Successful dissertations and theses : a guide to graduate student research from proposal to completion.
- Meloy, Judith M. Writing the qualitative dissertation : understanding by doing.
- Naoum, S. G. (Shamil G.). Dissertation research and writing for construction students.
- Rudestam, Kjell Erik. Surviving your dissertation : a comprehensive guide to content and process.
- Stevens, Catherine J. (Catherine Joanna). Doing postgraduate research in Australia.

Architectural Brief Writing:
- RAIA. Practice Notes. ‘AN10.03.100 The Design Brief’. Melbourne: RAIA Practice Services, 1998.

Offered in Courses: [ D4B ]

Unit Delivery Information:
### KDA511 - Design Studio 9 (BArch)

**Description:** Allows students the opportunity to develop their personal design philosophy building on the skills and knowledge developed in KDA322 History and Theory in Design 6 (BEnvDes.) and KDA422 Theory in Design 1. An explorative architectural studio that encourages experimentation and develops rigour in intellectual approach and research techniques applicable to a design project. Develops students’ intellectual discipline, judgement, self-awareness and criticism in relation to architectural ideas, concepts and philosophies.

**Requisites:** PREREQ - KDA421

**Staff:** Mr R Blythe

**Teaching Pattern:** lecture, tutorials, workshop/studio components

**Assessment:** cumulative assignments

**Offered in Courses:** [ D3B ]

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### KDA512 - Theory in Design 2 (BArch)

**Description:** Develops ability in architectural brief writing. Students prepare an architectural brief for their proposed professional project for semester 2. They undertake studies of architectural context and precedent, associated with their proposed semester 2 project, as part of the brief writing process. In addition, skills, knowledge and abilities developed in KDA422 Theory in Design 1 are applied in the context of the student’s chosen project.

**Staff:** Mr R Blythe

**Teaching Pattern:** lecture, workshop/studio; 4 hrs weekly (13 wks)

**Assessment:** seminar presentations, written and graphic assignments, review of submitted portfolio containing all project work

**Offered in Courses:** [ D3B ]

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### KDA513 - Professional Studies 2 (BArch)

**Description:** Consists of two components, covering building contracts and office management. The contract component compares a variety of standard format contracts currently in use in the building industry. In particular the unit examines the practical aspects of administering contractual provisions during the progress of building works. The management component develops a knowledge of management theory and its application to architectural practice and design processes. The unit examines financial management, human and non-human resource management and the question of professional ethics.

**Teaching Pattern:** lecture and seminar; 4 hrs weekly (13 wks)

**Assessment:** seminar presentations, written assignments

**Offered in Courses:** [ D3B ]

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### KDA521 - Professional Project (BArch)

**Description:** Is the final unit and culmination of the BArch program, requiring students to develop a design project from site analysis and initial concept, through preliminary design, design development and some detailed technical design resolution, to final presentation. Those students who achieve a minimum grade of 60% or higher for *KDA512 may undertake a project following the brief developed in that unit. A full design brief for a suitable project will also be offered in the studio. Develops ability to program and manage a semester-long project, to present work in a professional manner and to articulate clearly the rationale behind the sequence of decisions that have led to the final design proposal.

**Requisites:** PREREQ - KDA511, KDA512

**Teaching Pattern:** lecture, tutorial, workshop/studio components

**Assessment:** end-of-sem written report, oral and graphic presentation to a panel of examiners comprising teaching staff and external examiners

**Offered in Courses:** [ D3B ]

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### KDA800 - Master of Design (Architecture) F/T

**Description:** This research degree is administered by the Research Higher Degree Unit. Information is available at http://www.research.utas.edu.au/rhd. All students considering enrolling in this degree should visit the Schools research website at: http://www.arch.utas.edu.au/ and consult with Dr Anne Neale, Graduate Research Co-ordinator via email: Anne.Neale@utas.edu.au or
Units Coded K – Faculty of Science, Engineering & Technology

Staff: Supervisor, determined by research topic

Offered in Courses:  [ D8A ]

Unit Delivery Information:

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**KDA801 - Master of Design (Architecture) P/T**

Description: This research degree is administered by the Research Higher Degree Unit. Information is available at http://www.research.utas.edu.au/rhd. All students considering enrolling in this degree should visit the Schools research website at: http://www.arch.utas.edu.au/ and consult with Dr Anne Neale, Graduate Research Co-ordinator via email: Anne.Neale@utas.edu.au or telephone 6324 3315.

Staff: Supervisor, determined by research topic

Offered in Courses:  [ D8A ]

Unit Delivery Information:

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**KDA810 - Master of Architecture (F/T)**

Description: This research degree is administered by the Research Higher Degree Unit. Information is available at http://www.research.utas.edu.au/rhd. All students considering enrolling in this degree should visit the Schools research website at: http://www.arch.utas.edu.au/ and consult with Dr Anne Neale, Graduate Research Co-ordinator via email: Anne.Neale@utas.edu.au or telephone 6324 3315.

Staff: Supervisor, determined by research topic

Offered in Courses:  [ D8B ]

Unit Delivery Information:

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**KDA811 - Master of Architecture (P/T)**

Description: This research degree is administered by the Research Higher Degree Unit. Information is available at http://www.research.utas.edu.au/rhd. All students considering enrolling in this degree should visit the Schools research website at: http://www.arch.utas.edu.au/ and consult with Dr Anne Neale, Graduate Research Co-ordinator via email: Anne.Neale@utas.edu.au or telephone 6324 3315.

Staff: Supervisor, determined by research topic

Offered in Courses:  [ D8B ]

Unit Delivery Information:

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**KDA900 - Doctor of Philosophy (Architecture) F/T**

Description: This research degree is administered by the Research Higher Degree Unit. Information is available at http://www.research.utas.edu.au/rhd. All students considering enrolling in this degree should visit the Schools research website at: http://www.arch.utas.edu.au/ and consult with Dr Anne Neale, Graduate Research Co-ordinator via email: Anne.Neale@utas.edu.au or telephone 6324 3315.

Staff: Supervisor, determined by research topic

Offered in Courses:  [ D9A ]

Unit Delivery Information:

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**KDA901 - Doctor of Philosophy (Architecture) P/T**

Description: This research degree is administered by the Research Higher Degree Unit. Information is available at http://www.research.utas.edu.au/rhd. All students considering enrolling in this degree should visit the Schools research website at: http://www.arch.utas.edu.au/ and consult with Dr Anne Neale, Graduate Research Co-ordinator via email: Anne.Neale@utas.edu.au or telephone 6324 3315.

Staff: Supervisor, determined by research topic

Offered in Courses:  [ D9A ]

Unit Delivery Information:

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KEA101 - Understanding Earth Systems

**Description:** Provides a broad understanding of the composition and structure of the Earth and its location in the Solar system. Topics include the Solar System, Plate tectonics, the recognition and significance of rocks and minerals, volcanic and sedimentary processes, metamorphism and the origin of mountain belts.

**Requisites:** MEXCL - KEA100, KLA213

**Staff:** Dr A Tunks, Dr G Davidson, Assoc Prof J McPhie

**Teaching Pattern:** 3x1-hr lecture, 1x3-hr lab weekly (13 wks), 1 day of excursions

**Assessment:** 1 practical exam in May (20%), 1 excursion by field test (5%), 1x2-hr exam in June (65%), continuous assessment (10%)


**Offered in Courses:** [ S3G ] [ S3T ] [ OCS ] [ S3Z ] [ S3Y ]

**Unit Delivery Information:**

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KEA102 - Earth Resources, Environments & Evolution

**Description:** Covers the evolution of the Earth and life, the origin of ore deposits and fossil fuels, environmental geology, and the geology of Tasmania. Provides a broad understanding of the processes active on the surface of the earth and is suitable for general science and arts students with an interest in the geological sciences.

**Requisites:** MEXCL - KEA100

**Staff:** Dr CF Burrett, Dr DR Cooke Dr A Tunks

**Teaching Pattern:** 3x1-hr lecture, 3-hr lab weekly (13 wks), 1 day of excursions

**Assessment:** 1 practical exam in Oct (20%), 1 excursion by field test (5%), 1x2 hour exam in Oct/Nov (65%), continuous assessment (10%)


**Offered in Courses:** [ S3G ] [ S3G ] [ S3G ] [ S3G ] [ S3G ] [ S3T ] [ OCS ] [ S3Y ]

**Unit Delivery Information:**

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KEA208 - Earth's Materials and Interior

**Description:** Enables students to recognise and interpret Earth materials and their history. This course is aimed at students with a professional interest in the earth. Studies concentrate on the rock types found on the Earth's surface, and on the internal structure of the earth as defined using geophysics. Lectures cover aspects of mineralogy, the classification and origin of sedimentary rocks, an introduction to igneous rocks, and global geophysics. Laboratory work includes mineralogy, sedimentology, igneous petrology and volcanology. Field work enables students to recognise and interpret rocks and structures in the field.

**Requisites:** PREREQ - KEA101

**Staff:** Dr AJ Crawford (Coordinator); Dr P McGoldrick, Prof J McPhie, Dr MJ Roach, Dr J Reid

**Teaching Pattern:** 3x1-hr lectures and 1x3-hr lab work weekly throughout semester 1, plus 6 days of field work before semester 1

**Assessment:** practical exams and assessments (25%), excursion tests and report (25%), 2-hr theory exams, June (50% ea)

**Offered in Courses:** [ S3G ] [ S3T ] [ S3Y ]

**Unit Delivery Information:**

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KEA209 - Earth's Surface

**Description:** Studies concentrate on the Earth's surface and surface processes, including methods for mapping the geology of the earths surface. This course is aimed at students with a professional interest in the earth. Lectures cover aspects of environmental geology, stratigraphy, structural geology, and sedimentary mineral deposits. Laboratory work includes geological mapping and remote sensing including air photo interpretation, and environmental geology. Field work gives students experience in mapping techniques.

**Requisites:** PREREQ - KEA101 KEA102

**Staff:** Dr RF Berry, AssProf C Burrett, Dr GJ Davidson, Dr M Roach

**Teaching Pattern:** 3x1-hr lectures and 1x3-hr lab work weekly throughout semester 2, plus 3 days of field work in mid-term break

**Assessment:** practical exam and assessments (40%), excursion report (10%), 2-hr theory exam Nov (50%)


**Offered in Courses:** [ S3G ] [ S3T ] [ S3Y ]

**Unit Delivery Information:**

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KEA230 - Introduction to Geophysics & Computer Applications

**Description:** Introduces geophysical methods and use of computers in geological applications. The unit includes an outline of how the methods work, how they are used and how the data are corrected, processed and interpreted to resolve geological/exploration problems.

**Requisites:** PREREQ - (KEA101 and KEA102) or *KYA100 or *KEA100 MEXCL - KEA250; KEA222

**Staff:** Dr MJ Roach, Dr JE Reid

**Teaching Pattern:** 2x1-hr lectures, 2x2hr practical sessions weekly (13 wks), 1 day field work

**Assessment:** practical assignments throughout sem 2 (40%), excursion report (10%); theory exam in Nov (50%)

**Required Texts:**

**Offered in Courses:** [S3G] [OCS]

**Unit Delivery Information:**

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KEA240/340 - Fossils and Environments Through Time

**Description:** Surveys the history of life on earth covering geological aspects of the origin of life, the development of stromatolites, the explosion of fossils 540 million years ago, controls on faunal diversity, major extinction events and the fossil record of vertebrate evolution. Major environmental changes throughout time such as climate, continental position and sea level changes and their effect on diversity and biogeography will be discussed.

**Requisites:** PREREQ - KEA102 or KZA150 or KGA100 or *KEA100 MEXCL - KEA266

**Staff:** Dr CF Burrett, Prof P Quilty

**Teaching Pattern:** 2x1-hr lectures and 5 hrs practicals weekly (13 wks)

**Assessment:** Assignments, seminar and practical assessment throughout sem (65%), theory exam in June (35%)

**Recommended Texts:** suggested reading will be provided

**Offered in Courses:** [S3G] [S3G] [S3T] [OCS] [S3Y]

**Unit Delivery Information:**

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KEA301 - Geology 3A

**Special Note:** To fulfil the requirements of this unit, and to continue into the Honours year, students must attend the following excursions and submit a satisfactory body of work: a 8-day excursion during February, immediately prior to commencement of sem 1 (travel and accommodation is arranged by the school, but students must contribute towards costs of travel, accommodation and meals); and other excursions (a total of 9 days) during sem 2. On completion of KEA301 students are awarded an XX result (result shown in another unit), the final result for this unit is awarded on completion KEA302. Students are required to enrol concurrently in KEA301 and KEA302.

**Description:** Comprises a series of lectures covering optical mineralogy, ore deposits, metamorphic petrology, igneous petrology, volcanology, geophysical mapping, hydrology and fuels. This core unit is designed to bring students' knowledge of the earth sciences up to the graduate level, adequate for school teaching and for continuation of studies into 4th year (Honours), which is now recognised as the minimum professional level of training. The course also involves a total of 17 days of field excursions.

**Requisites:** PREREQ - KEA205 (or *KEA200) MEXCL - KEA355; KEA360; KEA365 COREQ - KEA302

**Staff:** Dr RF Berry (Coordinator) Prof RR Large, Dr C Burrett, Assoc Prof D Cooke, Dr AJ Crawford, Dr JB Gemmell, Assoc Prof J McPhie, Dr MJ Roach, Dr JE Reid

**Teaching Pattern:** 95x1-hr lectures and 153 hrs of practical work in 3-hr sessions; plus 17 days of field work

**Assessment:** excursion report and assignments (25%), practical exams (25%); theory exams (1 in June and 1 in Nov, each usually of 3 hrs duration) (50%)


Wilson M, Igneous Petrogenesis -- a global tectonic approach, Chapman Hall


**Offered in Courses:** [S3G] [S3G] [OCS]

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KEA302 - Geology 3B

**Special Note:** To fulfil the requirements of this unit, and to continue into the Honours year, students must attend the following excursions and submit a satisfactory body of work: a 8-day excursion during February, immediately prior to commencement of sem 1 (travel and accommodation is arranged by the school, but students must contribute towards costs of travel, accommodation and meals); and other excursions (a total of 9 days) during sem 2. On completion of KEA301 students are awarded an XX result (result shown in another unit), the
Description: Comprises a series of lectures covering optical mineralogy, ore deposits, metamorphic petrology, igneous petrology, volcanology, geophysical mapping, hydrology and fuels. This core unit is designed to bring students' knowledge of the earth sciences up to the graduate level, adequate for school teaching and for continuation of studies into 4th year (Honours), which is now recognised as the minimum professional level of training. The course also involves a total of 17 days of field excursions.

Requisites: PREREQ - KEA205 (or *KEA200) MEXCL - KEA355; KEA360; KEA365 COREQ - KEA301

Staff: Dr RF Berry (Coordinator) Prof RR Large, Dr C Burrett, Assoc Prof D Cooke, Dr AJ Crawford, Dr JB Gemmell, Assoc Prof J McPhie, Dr MJ Roach, Dr JE Reid

Teaching Pattern: 95x1-hr lectures and 153 hrs of practical work in 3-hr sessions; plus 17 days of field work

Assessment: excursion report and assignments (25%), practical exams (25%); theory exams (1 in June and 1 in Nov, each usually of 3 hrs duration) (50%)


Offered in Courses: [ S3G ] [ S3G ] [ OCS ]

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**KEA332 - Computers in Geoscience**

Description: Involves a series of lectures, practical work which focuses on the application of computer technology to geology and geophysics. The unit includes digital signal processing, seismic reflection data processing, airborne geophysical data processing, heat and fluid flow modelling and modelling and inversion of geophysical data. This unit is particularly recommended for those students planning a career in petroleum geology or exploration geophysics.

Requisites: PREREQ - KEA205 (or *KEA200), KEA230 (or *KEA222) or (KYA201 and KYA202)

Staff: Dr MJ Roach, Dr JE Reid

Teaching Pattern: 2x1-hr lectures weekly, 22x3-hr practical sessions

Assessment: assignments and practical assessments (50%); theory exam in Nov (50%)

Recommended Texts: a list of recommended reading will be available at the first lecture.

Offered in Courses: [ S3G ] [ S3G ] [ OC ]

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**KEA338 - Sedimentary Environments**

Description: Examines clastic sedimentary transport and depositional processes and the formation of carbonate and evaporite chemical sediments. These processes are discussed in the context of the earth’s modern and ancient environments, highlighting the external and internal controls over such depositional systems and their dynamic nature.

Requisites: PREREQ - KEA205 (or *KEA200) MEXCL - SGL318; KEA318

Staff: Dr C Burrett, Dr RF Berry, Dr S Bull, Dr G Davidson

Teaching Pattern: 2x1-hr lectures, 3-hr practical session weekly (13 wks), 1 day field work.

Assessment: practical assessments throughout sem 1 (35%), excursion report (5%), theory exam in June (60%)

Offered in Courses: [ S3G ] [ S3G ] [ S3T ] [ OCS ] [ S3Y ]

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**KEA341 - Economic Geology**

Description: An advanced unit dealing with ore deposit geology and geochemistry. The unit complements the ore deposit component of KEA300 with emphasis on particular styles of ore-forming processes and products. Topics include: hydrothermal systems, tectonic environments, metal transport/deposition, ore fluids, stable isotopes, hydrothermal alteration, ore genesis. Practical exercises involve sample sets and data from a range of ore types.

Requisites: PREREQ - KEA205 (or *KEA200) MEXCL - KEA336, KEA346

Staff: Prof RR Large (Coordinator), Dr JB Gemmell, Dr GJ Davidson, Dr P McGoldrick, Dr RJ Scott, Dr DC Cooke

Teaching Pattern: 2x1-hr lectures, 4 hrs practicals weekly (13 wks)

Assessment: assignments and practical assessments throughout the sem (40%), theory exam in June (60%)

Offered in Courses: [ S3G ] [ S3G ] [ OCS ]

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KEA342 - Exploration Geophysics

Description: Involves a series of lectures, practical work and geophysical survey work, which includes the interpretation of results and the preparation of a report. The unit covers seismic, gravity, magnetic, electric and electromagnetic methods of geophysical exploration. Recommended for students planning a career in mineral exploration, mine geology or geophysics.

Requisites: PREREQ - KEA205 (or *KEA200), KEA230 (or *KEA222) or (KYA201 and KYA202) MEXCL - SGL324; KEA324

Staff: Dr MJ Roach, Dr JE Reid

Teaching Pattern: 2x1-hr lectures, 3-hr practical sessions weekly (13 wks), 5 days field work

Assessment: excursion report (25%), practical assessment throughout sem 1 (25%); theory exam in Jun (50%)


Offered in Courses: [ S3G ] [ S3G ] [ OC ]

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KEA343 - Mineral Exploration

Description: Covers the development and application of ore deposit models for mineral exploration. Emphasis is placed on the integration of a range of geological, geochemical and geophysical data sets to define targets for ore discovery. Practical mineral exploration exercises are provided for a number of ore deposit types from different localities.

Requisites: PREREQ - KEA205, KEA230, KEA341 MEXCL - KEA336, KEA346

Staff: Prof RR Large, Dr D Cooke, Dr JB Gemmell, Dr PJ McGoldrick, Dr A Tunks, Mr W Herrmann

Teaching Pattern: 1-hr lecture, 2x3-hr practicals weekly (13 wks)

Assessment: assignments and practical assessments throughout sem 2 (60%), theory exam in Nov (40%)

Required Texts: a list of references will be distributed at the first lecture.

Offered in Courses: [ S3G ] [ S3G ] [ OCS ]

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KEA348 - Environmental Geology

Special Note: involves 3 days of excursions. Students are expected to contribute toward excursion accommodation costs

Description: Covers three main components, including: water quality; hydrogeology, environmental geophysics; and acid mine drainage. The unit also includes 3 days of field work.

Requisites: PREREQ - KEA205 (or *KEA200) MEXCL - SGL328; KEA328

Staff: Dr D Cooke, Dr GJ Davidson, Dr J Reid

Teaching Pattern: 2x1-hr lectures, 3-hr practical weekly (13 wks), 3 days field work

Assessment: assignments and practical assessments throughout sem 2 (40%); theory exam in Nov (60%)

Required Texts: a list of references will be distributed at the first lecture.

Offered in Courses: [ S3G ] [ S3G ] [ S3T ] [ OC ] [ S3Y ]

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KEA356 - Geology for Geophysicists A

Special Note: On completion of KEA356 students are awarded an XX result (result shown in another unit), the final result for this unit is awarded on completion KEA357. Students are required to enrol concurrently in KEA356 and KEA357.

Description: Is a subset of KEA301 and KEA302. Students attend lectures and practicals selected from KEA301 and KEA302, normally including: hydrology, ore deposits, fuels, igneous petrology and geophysical mapping.

Requisites: PREREQ - KEA205 (or *KEA200) MEXCL - KEA301 and KEA302; KEA350; KEA367 and KEA368 COREQ - KEA357

Staff: as for KEA301 and KEA302

Teaching Pattern: as for KEA301 and KEA302 --- selected lectures and practicals, as advised, and 8 days excursion before sem 1

Assessment: a subset from the list for KEA301 and KEA302 (see Coordinator)

Required Texts: as for KEA300

Offered in Courses: [ S3G ] [ OCS ]

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KEA357 - Geology for Geophysicists B

Special Note: On completion of KEA356 students are awarded an XX result (result shown in another unit), the final result for this unit is awarded on completion KEA357. Students are required to enrol concurrently in KEA356 and KEA357.

Description: Is a subset of KEA301 and KEA302. Students attend lectures and practicals selected from KEA301 and KEA302, normally including: hydrology, ore deposits, fuels, igneous petrology and geophysical mapping.
Requisites: PREREQ - KEA205 (or *KEA200) MEXCL - KEA301 and KEA302; KEA350; KEA367 and KEA368 COREQ - KEA356
Staff: as for KEA301 and KEA302
Teaching Pattern: as for KEA301 and KEA302 --- selected lectures and practicals, as advised, and 8 days excursion before sem 1
Assessment: a subset from the list for KEA301 and KEA302 (see Coordinator)
Required Texts: as for KEA300
Offered in Courses: [ S3G ] [ OCS ]

KEA357 - Geology for Environmental Scientists A
Special Note: On completion of KEA367 students are awarded an XX result (result shown in another unit), the final result for this unit is awarded on completion KEA368. Students are required to enrol concurrently in KEA367 and KEA368.
Description: Is a subset of KEA301 and KEA302. Students attend lectures and practicals selected from KEA301 and KEA302, normally including: ore deposits, fuels, hydrology and geophysical mapping.
Requisites: PREREQ - KEA205 (or *KEA200) MEXCL - KEA301 and KEA302; KEA356 and KEA357; KEA350 COREQ - KEA368
Staff: as for KEA301 and KEA302
Teaching Pattern: as for KEA301 and KEA302 --- selected lectures and practicals, as advised, and 8 days excursion before sem 1
Assessment: a subset from the list for KEA301 and KEA302 (see Coordinator)
Required Texts: as for KEA301 and KEA302
Offered in Courses: [ S3G ] [ S3T ] [ OCS ] [ S3Y ]

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KEA367 - Geology for Environmental Scientists B
Special Note: On completion of KEA367 students are awarded an XX result (result shown in another unit), the final result for this unit is awarded on completion KEA368. Students are required to enrol concurrently in KEA367 and KEA368.
Description: Is a subset of KEA301 and KEA302. Students attend lectures and practicals selected from KEA301 and KEA302, normally including: ore deposits, fuels, hydrology and geophysical mapping.
Requisites: PREREQ - KEA205 (or *KEA200) MEXCL - KEA301 and KEA302; KEA356 and KEA357; KEA350 COREQ - KEA368
Staff: as for KEA301 and KEA302
Teaching Pattern: as for KEA301 and KEA302 --- selected lectures and practicals, as advised, and 8 days excursion before sem 1
Assessment: a subset from the list for KEA301 and KEA302 (see Coordinator)
Required Texts: as for KEA301 and KEA302
Offered in Courses: [ S3G ] [ S3T ] [ OCS ] [ S3Y ]

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KEA410/411 - Geology 4 (Honours)
Description: The Honours course in Geology at the University of Tasmania runs over a period of 40 weeks. Coursework components vary depending on the individual, and may include units taken within or outside the school.
Requisites: PREREQ - BSc with KEA300 or ( KEA365 and KEA338 and KEA348) or equiv geology major
Assessment: (a) research project presented as a thesis (65%), coursework (25%), seminars (5%), reading essay (5%). Satisfactory performance is required in all areas
Offered in Courses: [ S4E ]

KEA416 - Geology 4 (Honours) F/T
Description: For details see KEA410/411
Requisites: PREREQ - KEA300

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KEA417 - Geology 4 (Honours) P/T
Description: For details see KEA410/411
Requisites: PREREQ - KEA300

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KEA418 - Geology 4 (Honours) P/T

Description: For details see KEA410/411
Requisites: PREREQ - KEA300

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KEA420/421 - Geophysics 4 (Honours)

Description: Have the same broad objectives as KEA410/411. The course is accredited by the Australian Institute of Mining and Metallurgy.
Requisites: PREREQ - (KEA300 or KEA355), KEA342, KEA332
Assessment: see KEA410/411
Offered in Courses: [ S4E ]

KEA422 - Geophysics 4 (Honours) F/T

Description: For details see KEA420/421
Requisites: PREREQ - KEA311, KEA324, KEA350

Unit Delivery Information:

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KEA423 - Geophysics 4 (Honours) P/T

Description: For details see KEA420/421
Requisites: PREREQ - KEA311, KEA324, KEA350

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KEA440/441 - Geochemistry 4 (Honours)

Special Note: full-time students enrol in * KEA440 (100%); part-time students in * KEA441 (50%)
Description: Have the same broad objectives as KEA410/411. The course is accredited by the Australian Institute of Mining and Metallurgy.
Requisites: PREREQ - BSc with KEA300
Assessment: see KEA410/411
Offered in Courses: [ S4E ]

KEA442 - Geochemistry 4 (Honours) F/T

Description: For details see KEA440/441

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KEA443 - Geochemistry 4 (Honours) P/T

Description: For details see KEA440/441

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KEA444 - Geochemistry 4 (Honours) P/T

Description: For details see KEA440/441

Unit Delivery Information:
KEA450/451 - Economic Geology 4 (Honours)

**Description:** Have the same broad objectives as KEA410/411, and are designed for students interested in specialising in Economic Geology research, as accredited by the Australian Institute of Mining and Metallurgy. These units are intended for students who wish to undertake a career in either mineral exploration or mining geology, or for students intending to undertake further research in economic geology. Students must undertake an economic geology-related research project.

**Requisites:** PREREQ - KEA300, and (KEA341 and KEA343) or (pre-2004 units KEA336 and KEA346) or equiv ore deposit geology major

**Offered in Courses:** [S3G]

KEA452 - Economic Geology 4 (Honours) F/T

**Description:** For details see KEA450/451

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KEA453 - Economic Geology 4 (Honours) P/T

**Description:** For details see KEA450/451

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KEA454 - Economic Geology 4 (Honours) P/T

**Description:** For details see KEA450/451

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KEA510/511 - Graduate Diploma in Science with Honours, specialising in Geology (Unit not offered in 2006)

**Description:**
*KEA520/521 Graduate Diploma in Science with Honours, specialising in Geophysics*
*KEA540 Graduate Diploma in Science with Honours, specialising in Geochemistry*

Have the same broad objectives as KEA410/411.

**Assessment:** see KEA410/411

**Offered in Courses:** [S6X]

KEA512 - Graduate Diploma in Science with Honours, specialising in Geology F/T (Unit not offered in 2006)

**Description:** For details see KEA510/511

**Offered in Courses:**

KEA513 - Graduate Diploma in Science with Honours, specialising in Geology P/T (Unit not offered in 2006)

**Description:** For details see KEA510/511

**Offered in Courses:**

KEA514 - Graduate Diploma in Science with Honours, specialising in Geology P/T (Unit not offered in 2006)

**Description:** For details see KEA510/511

**Offered in Courses:**

KEA517 - Graduate Diploma in Science, specialising in Earth Sciences/Geology

**Description:**

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KEA518 - Graduate Diploma in Science, specialising in Earth Sciences/Geology

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## KEA519 - Graduate Diploma in Science, specialising in Earth Sciences/Geology

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## KEA520/21 - Graduate Diploma in Science with Honours, specialising in Earth Sciences/Geophysics

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## KEA524 - Graduate Diploma in Science, specialising in Earth Sciences/Geophysics

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## KEA525 - Graduate Diploma in Science, specialising in Earth Sciences/Geophysics

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## KEA526 - Graduate Diploma in Science, specialising in Earth Sciences/Geophysics

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## KEA527 - Graduate Diploma in Science with Honours, specialising in Earth Sciences/Geophysics

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## KEA528 - Graduate Diploma in Science with Honours, specialising in Earth Sciences/Geophysics

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## KEA529 - Graduate Diploma in Science with Honours, specialising in Earth Sciences/Geophysics

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## KEA542 - Graduate Diploma in Science with Honours, specialising in Geochemistry

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## KEA543 - Graduate Diploma in Science with Honours, specialising in Geochemistry

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KEA543 - Graduate Diploma in Science with Honours, specialising in Geochemistry

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KEA544 - Master of Economic Geology - Cross Institutional

Special Note: This code to be used by students from other participating universities.

Description: This master degree program is for geoscientists who want to gain a thorough up-date of advances across the spectrum of economic geology applied to mineral exploration. The course is offered jointly by University of Tasmania Centre for Ore Deposit Research (CODES), the University of Western Australia, James Cook University, Monash University (Victorian Institute of Earth and Planetary Sciences – VIEPS) and CRC LEME (University of Canberra).

Two options are available:
1. six units of coursework and minor research thesis. A minimum of four units from CODES (KEA841 -- KEA848) and up to 2 units from the partner universities. The research thesis to be undertaken at CODES (KEA891). The thesis project is 40% of the total assessment.
2. eight units of coursework. A minimum of four units (KEA841 -- KEA848) from CODES with up to 4 units from the partner universities.

Please contact Andrew.Tunks@utas.edu.au
Phone (03) 6226 2472; Fax (03) 6226 7662.

Requisites: PREREQ - BSc Hons or BSc with 2 yrs industry experience and evidence of completion of a significant geological report

Staff: Dr A Tunks (Coordinator) and invited CODES/University/Industry/Government specialists

Teaching Pattern: lectures, experience: 6x2-week short courses

Offered in Courses: [ S7R ]

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KEA841 - Ore Deposit Studies and Exploration Models

Description: Describes all the major classes of ore deposits; Volcanic-hosted massive Cu-Pb-Zn Ag, Au sulfides, Sediment-hosted Pb-Zn-Cu, Carbonate hosted Pb-Zn, Broken Hill type, Protérozoïc Cu-Au, Tin-Tungsten, Porphyry Cu-Au, Mesothermal Au-Ag, Archean Au, Nickel and PGE deposits. Important features of the deposits which relate to their genesis and exploration are discussed, and exploration models are presented for each style. Unit leaders are Australian and internationally-recognised experts on each deposit type.

Requisites: PREREQ - see KEA820

Staff: Prof RR Large, Dr JB Gemmell, Dr GJ Davidson, Dr PJ McGoldrick, Dr DR Cooke, Dr S Bull and a selection of industry research geologists and academic specialists from other national and international Universities and Research Centres

Teaching Pattern: 11 days of lectures and practicals presented in a short unit format over a 2-week period

Assessment: practical exercises, seminar, and 2 major assignments

Recommended Texts: AGSO, Journal vol 17, No. 4, 'Concepts and exploration criteria for major Australian mineral deposit types'.

Offered in Courses: [ S7R ] [ S8E ]

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KEA843 - Volcanology and Mineralisation in Volcanic Terrains

Special Note: is field-based, the venues being the North Island of New Zealand for the first part (8 days), and western Tasmania for the second part (5 days)

Description: Covers current approaches to mapping, facies analysis and mineralisation in ancient and modern volcanic sequences. The unit introduces the processes and products of different eruption styles, contrasts in scale and structure of volcanoes, identification of key volcanic facies associations, and interpretation of facies variations. In addition, the unit covers mineralisation and alteration processes related to hydrothermal systems in subaerial and submarine volcanic terrains, and implications for mineral exploration.

Requisites: PREREQ - see KEA820

Staff: Dr J McPhie, Dr JB Gemmell, and invited specialists

Teaching Pattern: field-based excursion unit run over a 2-week period

Assessment: field exercises and 2 major assignments


Offered in Courses: [ S7R ] [ S8E ]

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KEA845 - Geochemistry, Hydrology and Geochronology (Unit not offered in 2006)

**Special Note:** Offered every second year

**Description:** Introduces the chemistry of hydrothermal systems including metal solubilities, mineral stability, isotope systematics and the important fluid chemical controls on the types and locations of ore deposits. In addition the unit covers the basics of hydrological modelling of mineral systems and the application of coupled fluid flow and fluid chemistry to predict the locations of ore deposits. Methods to date mineralising events and the timing of hydrothermal systems are discussed and evaluated.

**Requisites:** PREREQ - see KEA820

**Staff:** Dr DR Cooke, Prof RR Large, Dr GP Davidson, Dr JB Gemmell, Dr Khin Zaw and invited academic CSIRO and AGSO specialists

**Teaching Pattern:** 11 days of lectures and practicals presented in a short unit format over a 2-week period

**Assessment:** Practical exercises and 2 major assignments

**Offered in Courses:** [ S7R ] [ S8E ]

KEA847 - Exploration in Brownfield Terrains

**Special Note:** replaces Exploration Geophysics, Remote Sensing and Geographic Information Systems *KEA844

**Description:** The compilation of large the data sets that are common in area of significant previous exploration can present a challenge for any geologist. The unit is a lab and field based unit that looks at exploration in and around minesites where there is often abundant data. The unit covers GIS and database applications, and the interpretation of Geochemistry, Geophysics data at various scales. This information is enhanced by practical exercises involving the integration of multiple datasets from world-class mineralised districts.

**Requisites:** PREREQ - see KEA820

**Staff:** Dr MJ Roach, Dr AJ Tunks and invited industry specialists

**Teaching Pattern:** 11 days of lectures and practicals presented in a short-unit format over a 2-wk period

**Assessment:** practical exercises and major assignment

**Offered in Courses:** [ S7R ] [ S8E ]

KEA848 - Ore Deposits of South America (Unit not offered in 2006)

**Special Note:** Offered every second year

**Description:** A field-based unit that includes visits to the world class porphyry and epithermal deposits of the Southern Andes. The unit includes studies of the regional and local geology of the district, with detailed evaluations of the ore deposit characteristics, mineralisation styles and genetic models. Exploration techniques for porphyry and epithermal deposits are discussed first hand in the field and current results are evaluated in terms of various genetic models. This field-based unit involves travel to South America.

**Requisites:** PREREQ - see KEA820

**Staff:** Dr DR Cooke, Dr AJ Tunks and various industry and academic specialists based in South America

**Teaching Pattern:** field-based teaching and exercises over a 2-week period

**Assessment:** major assignment and practical field exercises

**Offered in Courses:** [ S7R ] [ S8E ]

KEA891 - Thesis Project

**Description:** The thesis is generally written on a current company project and comprises 40% of the overall assessment.

**Offered in Courses:** [ S7R ]

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KGA121 - Population and Urbanisation

**Description:** Provides a foundation for the study of human geography through an assessment of [i] recent patterns of demographic change and [ii] the role of the city as the key element in the changing patterns of human settlement. Case studies drawn from a wide range of regions are used to develop conventional themes such as the demographic transition and the local impacts of a global economy. In addition, this unit considers topics that are less conventional such as interaction between urban heritage and tourism and the impact of cities on the physical environment.

**Requisites:** MEXCL - KGA100, KGA101, KGA151, KGA161

**Staff:** Dr R Kellaway

**Teaching Pattern:** 2x1-hr lectures, 2-hr practical weekly

**Assessment:** 2-hr exam in June (50%), 2,000-word essay (25%), practical assignments (25%)

**Required Texts:** Knox PL & Marston SA, Places and Regions in Global Context: Human Geography, ISBN 0131015184

**Offered in Courses:** [ R3A ] [ R3C ] [ R3K ] [ S3G ] [ S3T ] [ OCS ] [ S3Z ] [ S3I ]

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KGA122 - The Physical Environment

**Description:** Introduces the study of physical processes which have created the surface character of the earth. Includes geomorphology (earth structure and its shaping by rivers, glaciers and at coasts), biogeography (distribution of plants and animals) and climatology (weather
conditions and climate change).  
**Requisites:** MEXCL - KGA100, KGA101, KGA151, KGA161  
**Staff:** Dr J Ellison  
**Teaching Pattern:** 2x1-hr lectures, 2-hr practical weekly  
**Assessment:** 1,500-word essay (20%), practical exercises and practical test (30%), 2-hr exam in Nov (50%)  
**Required Texts:** Christopherson RW, Geosystems: An Introduction to Physical Geography, ISBN 0131531174  
**Offered in Courses:** [ R3A ] [ S3G ] [ S3T ] [ OCS ] [ S3Z ] [ S3I ]  

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#### KGA151 - Global Geographies of Change 1  
**Description:** In an introduction to physical, human and environmental geography you will be helped to develop your knowledge of global patterns and processes related to climate, landforms, population growth, settlement, and social and technological change, in the context of major global concerns, such as climate change, natural hazards, economic inequality and sustainable environmental management. The practical component of the unit will develop your skills in field measurement of climate, field measurement of landforms, map creation, map reading and map interpretation. An understanding of global patterns, global processes and global issues enhances everyday life, as well as being essential in many occupations and professions. This unit should be taken with the complementary unit, KGA152 Sustaining Global Environments 1, as a background to level 2 and 3 units in Geography and Environmental Studies.  
**Requisites:** MEXCL - KGA100, KGA101, KGA121, KGA161  
**Staff:** Dr A Davison; Dr K Kiernan; Dr E Pharo, Dr M Russell and others  
**Teaching Pattern:** 3x1-hr lectures, 3-hr practical period weekly of which some may be taught in tutorial mode.  
**Assessment:** 2-hr exam in June (40%), 1500-word essay (20%), practical and field studies (including on-line assessment) (40%)  
**Required Texts:** Christopherson RW, Geosystems: An Introduction to Physical Geography, ISBN 0131531174  
**Offered in Courses:** [ R3A ] [ S3G ] [ S3T ] [ OCS ]  

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#### KGA152 - Sustaining Global Environments 1  
**Description:** As an introduction to environmental and spatial studies, students are helped to develop understanding of: pattern and process in the biosphere; the various ways in which environmental issues have developed and been perceived; and the nature of the interactions between people and soils, and people and the living world. A practical course will develop your skills in the collection and manipulation of spatial data, and field measurement of soils and vegetation. This unit should benefit anyone interested in global environmental issues, and, with KGA151 Global Geographies of Change 1, provides a background for level 2 and 3 units in Geography and Environmental Studies.  
**Requisites:** MEXCL - KGA100, KGA101, KGA162  
**Teaching Pattern:** 3x1-hr lectures, 3-hr practical period weekly of which some may be taught in tutorial mode.  
**Assessment:** 2-hr exam in Nov (40%), 1500-word essay (20%), practical and field studies (including on-line assessment) (40%)  
**Required Texts:** Christopherson RW, Geosystems: An Introduction to Physical Geography, ISBN 0131531174  
**Offered in Courses:** [ R3A ] [ S3G ] [ S3T ] [ OCS ]  

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#### KGA161 - Global Geographies of Change 1A  
**Description:** In an introduction to human, environmental and physical geography you will be helped to develop your knowledge of global patterns and processes related to population growth, settlement, social and technological change, climate and landforms, in the context of major global concerns, such as climate change, natural hazards, economic inequality and sustainable environmental management. A series of tutorials will help you develop your skills in comprehending a variety of perspectives in complex debates, logical analysis and effective communication of major global issues and understanding spatial information. A comprehension of global patterns, global processes and global issues enhances everyday life, as well as being essential in many occupations and professions. This unit should be taken with the complementary unit, KGA162 Sustaining Global Environments 1A, as a background to level 2 and 3 units in Geography and Environmental Studies. It is not available to BSc students.  
**Requisites:** MEXCL - KGA100, KGA101, KGA151, KGA121  
**Staff:** Dr A Davison; Dr K Kiernan; Dr E Pharo, Dr M Russell and others  
**Teaching Pattern:** 3x1-hr lectures, 1 tutorial weekly.  
**Assessment:** 2-hr exam in June (40%); 2 x 1,500-word essays (40%), tutorials (including oral presentation and on-line assessment) (20%)  
**Required Texts:**  
**Offered in Courses:** [ R3A ] [ S3T ] [ OCS ]  

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**KGA162 - Sustaining Global Environments 1A**

**Description:** As an introduction to environmental studies and biogeography, students are helped to develop an understanding of the various ways in which environmental issues have developed and been perceived, pattern and process in the biosphere, and the nature of the interactions between people and soils, and people and the living world. A series of tutorials will develop skills in interpreting the interactions between values based arguments and factually based arguments about environmental issues, and introduce students to environmental assessment techniques, with an emphasis on methods from cultural geography. This unit should benefit anyone interested in global environmental issues, and, with KGA152 Global Geographies of Change 1A, provides a background for level 2 and 3 units in Geography and Environmental Studies. It is not available to BSc students.

**Requisites:** MEXCL - KGA100, KGA101, KGA152

**Staff:** Dr K Kiernan; Dr E Pharo, Dr J Russell, Dr M Russell and others

**Teaching Pattern:** 3x1-hr lectures, 1 tutorial weekly.

**Assessment:** 2-hr exam in June (40%); 2x1,500-word essays (40%), tutorials (including oral presentation and on-line assessment) (20%)

**Required Texts:** Christopherson RW, *Geosystems: An Introduction to Physical Geography*, ISBN 0130668249

**Offered in Courses:** [ R3A ] [ S3T ] [ OCS ]

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**KGA202/302 - Geography of Asia**

**Description:** Examines issues relevant to the understanding of the geography of contemporary Asia. Topics such as population pressure and policies, environmental change and degradation, economic growth in urban and rural areas, and the problems produced by modernisation and development are considered using different areas as case studies.

**Requisites:** - Some requisites may differ unit to unit.

KGA202: PREREQ - KGA100 or KGA101 or KGA121

KGA302: PREREQ - KGA100 or KGA101 or KGA121 MEXCL - HMA202/302

**Staff:** Dr RG Kellaway

**Teaching Pattern:** 2x1-hr lectures weekly, 9 tutorials

**Assessment:** 2-hr exam in Nov (55%), 3,000-word essay (40%), tutorials (5%)

**Offered in Courses:** [ R3A ] [ R3J ] [ S3G ] [ S3T ]

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**KGA208/308 - The Global Space Economy (Unit not offered in 2006)**

**Description:** Everyday terms such as ‘globalisation’, ‘structural adjustment’, ‘economic rationalism’, ‘protectionism’ and ‘multiculturalism’ reflect an increasing interest in the worldwide consequences of new patterns of demand, delivery and supply of goods and services. The unit examines recent developments in transportation and communication systems which, with new methods of production and distribution, are leading to an increasingly integrated global space economy. The consequences of this transition for employment, leisure and trade, and the environmental, social and cultural implications for individuals and communities in adjusting to a new era of change, in both developed and developing countries, are examined.

**Requisites:** PREREQ - KGA100 or KGA101 or KGA121 (*KJG101) (one of [*BEA100 or BEA110], *BEA101, *BEA102 or *BEA105 for Faculty of Commerce &amp; Law students only)

**Teaching Pattern:** 2x1-hr lectures weekly, 9 tutorials

**Assessment:** 2-hr exam in June (50%), 1,500-word essay (30%), 2x750-word tutorial papers (20%)

**Offered in Courses:** [ R3A ] [ R3C ] [ S3G ]

**KGA209 - Biogeography and Climatology**

**Description:** Introduces: (a) concepts of climatology, with emphasis on the energy balance and its role in influencing local, regional and global climates; and (b) biogeography, with emphasis on the response of plants and animals to local and regional environments.

**Requisites:** PREREQ - KGA100 or KGA101 or KGA122

**Staff:** Dr M Nunez, Dr P McQuillan,

**Teaching Pattern:** 2x1-hr lectures weekly, 9x2-hr practicals

**Assessment:** 2-hr exam in November (60%), practical work (20%), 1,500-word essay (20%)

**Recommended Texts:** Oke TR, *Boundary Layer Climates*, ISBN 0416044328

**Offered in Courses:** [ R3A ] [ S3G ] [ S3T ] [ S3Z ] [ S3Y ] [ S3I ]

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KGA213 - Natural Environment Field Techniques

**Special Note:** the field component will be run at Bronte Park between 21 and 28 January 2006

**Description:** A field-based unit taught in natural environments in Tasmania. Students who successfully undertake this unit will develop a wide variety of skills in environmental data recording in the context of a project designed both to increase knowledge of natural environments and to contribute to their proper management. The skills include: the use of global positioning systems; rapid topographic survey techniques; microclimatic data collection techniques; soil analysis, geomorphological measurement; vegetation survey; fauna survey; data entry and analysis. The unit provides students with the opportunity to build their field skills and their ability to work cooperatively on a meaningful project in one of the many interesting natural environments in Tasmania.

**Requisites:** PREREQ - KGA100 or KGA101 or KGA122 or other first-year course approved by HoS MEXCL - KGA211, KGA288

**Staff:** Dr M Russell(Coordinator), Prof J B Kirkpatrick, Dr G Unwin, Dr J Ellison, Dr P McQuillan, Dr E Pharo

**Teaching Pattern:** 8 days field, 16 lectures

**Assessment:** field exercises and short tests (40%), 5,000-word report (60%)

**Offered in Courses:** [R3A] [S3G] [S3T] [OCS] [S3Z]

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KGA223/323 - Environmental Management

**Description:** Introduces students to the principles of environmental management by examining the relationships between government, economy, society and environment. Sustainable development is used as a guiding framework for analysis of economic, regulatory and institutional approaches related to environmental issues. Particular emphasis is given to the concepts and methods of environmental economics. Case studies cover mitigation of pollution and other environmental externalities; provision of public environmental goods such as biodiversity; and optimising the management of renewable resources such as forests and fisheries.

**Requisites:** PREREQ - KGA100 or KGA101 or KGA121

**Staff:** Dr M Lockwood, Dr A Davison

**Teaching Pattern:** 2x1-hr lectures for 7 weeks, 1x1-hr lecture for 6 weeks, 6x2-hr tutorials, 2x3-hr seminars.

**Assessment:** 2-hr exam in June (40%), 3,000 word report and report plan (45%), group seminar presentation (15%), requirement to attend at least 4 tutorials.

**Recommended Texts:** Conacher A, Conacher J, Environmental planning and management in Australia, ISBN 0195538196


Tietenberg, TH, Environmental and natural resource economics, ISBN: 0673155587

**Offered in Courses:** [R3A] [S3G] [S3T] [S31]

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KGA226/326 - Environmental Geomorphology

**Special Note:** Offered in Hobart and Launceston, both partly by videolink for lectures.

**Description:** Applies geomorphological principles and techniques to the solution of environmental issues related to Earth surface processes and landforms. This unit involves examination of process and change in geomorphology, in relation to human activities, and problems of terrain management and mismanagement. Focus is on river catchments, coastal, beaches and estuaries, including natural hazards such as flooding, landslides and coastal erosion. Training is provided in field and laboratory techniques by which geomorphologists and other environmental scientists may measure, monitor and manage processes in the physical environment that affect human society.

**Requisites:** PREREQ - KGA122 or KGA100 or KGA101 MEXCL - KJG301

**Staff:** Dr J Ellison

**Teaching Pattern:** 2x1-hr lectures weekly, 1x3-hr practicals, 9 taken on 3 days of field trip, and 4 as data interpretation assignments.

**Assessment:** 2-hr exam in June (50%), 1,500-word essay (30%), practical/field assessment (20%)

**Required Texts:** Ritter D, Kochel R & Miller J, Process Geomorphology. ISBN 0697344118

**Offered in Courses:** [S3G] [S3T] [R3A] [S3Z]

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KGA227/327 - Conservation Geomorphology

**Description:** Conservation Geomorphology facilitates an understanding of geomorphic processes and landscape evolution in a number of environmental settings, with an emphasis on the significance of geoconservation for nature conservation, National Park management and environmental sustainability. The unit considers the geomorphic effects of structure and such processes as weathering, volcanism and karst development (including groundwater and limestone caves), together with their implications for management. The impact of cold climate...
(glacial and periglacial) processes in mountain and polar environments, including the evolution of the Tasmanian wilderness landscape, are also addressed. A field component enhances the ability of students to undertake a variety of geomorphological tasks including data collection and analysis, interpretation of landforms and Quaternary landscape evolution, and the development of management strategies to protect sites of geoconservation significance. The principal field exercise forms a major component of assessment.

**Requisites:** PREREQ - KGA100 or KGA101 or KGA122 or KEA205 MEXCL - KJG301

**Staff:** Dr K Kiernan

**Teaching Pattern:** 2x1-hr lectures weekly, 13x3-hr practicals primarily field-based (9 taken as an extended weekend field excursion, students are responsible for accommodation and food costs).

**Assessment:** 2-hr exam in June (50%), 1,500-word field report (30%), other practical/field assessment (20%)

**Required Texts:**

**Offered in Courses:** [ S3G ] [ S3T ] [ R3A ] [ N3H ] [ S3Z ] [ S3Y ]

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### KGA233/333 - Forest Ecosystems

**Description:** Introduces the ecology and evolutionary history of Tasmania's native forests in relation to the present distribution of vegetation. Principles of forest ecology and processes which sustain plant and animal interactions within forest environments are discussed. Practical implications for forest and reserve management are presented through comparative sampling and analysis of forest environments, species diversity and biological productivity in selected native forests and plantations. Ecosystem processes which contribute to the dynamics of forests, eg regeneration and ageing, succession and response to disturbance, are examined in preparation for subsequent studies in natural area management.

**Requisites:** PREREQ - KGA122 or KGA100 or KGA101 or *KJB113 MEXCL - KJB227

**Staff:** Dr G Unwin

**Teaching Pattern:** 2x1-hr lectures weekly, 13x3-hr practicals, 9 taken on 3 days of field trip

**Assessment:** practical reports include 1,500-word (15%), 2x1,000-word (10% ea) and smaller class assignments (5%), 2-hr final exam (60%)


**Offered in Courses:** [ S3G ] [ S3T ] [ R3A ] [ S3Z ]

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### KGA234/334 - Agroforestry

**Special Note:** Presented as lectures in Launceston and Burnie together with fieldwork in regional Tasmania.

**Description:** The study of principles and techniques for integration of farm forestry and rural land management in Tasmania and elsewhere. Ecological and economic benefits of combining sustainable farm forest management with agriculture are emphasised in field visits and a research project. The history and causes of rural tree decline and other plant and animal interactions with environment are examined in their ecological and land management contexts. Principles of whole-farm planning are outlined. Other topics include site amelioration, ecosystem protection and sustainability, design and environmental impacts of tree shelter, tree species selection, tree establishment and silviculture of native forests and plantations in combination with agriculture, yield and use of wood and non-wood products, financial analysis and farm forest profitability.

**Requisites:** PREREQ - KGA122 or * KJB113 or KGA100 or KGA101 or rural or industrial experience approved by the Head of School. MEXCL - KJB307

**Staff:** Dr G Unwin

**Teaching Pattern:** 4 hrs of lectures per fortnight and 4 days of practicals and fieldwork in rural Tasmania (including 1 x 2-day excursion in NW Tasmania). (Students will be responsible for basic accommodation costs for one night).

**Assessment:** 2-hr exam (60%), 1,500-word research report (30%), seminar (10%)

**Recommended Texts:**

**Offered in Courses:** [ S3G ] [ S3T ] [ R3A ] [ S3Z ]

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### KGA240/340 - Historical Geography (Unit not offered in 2006)

**Special Note:** Not offered in 2006. These units will be offered in 2007 in Hobart and Launceston.

**Description:** Examines the geography of the past and the imprint of the past upon the present cultural landscape. The first half of the unit provides an appreciation of the nature of historical geography by considering four general themes: (a) cultural transfer and cultural
regionalisation in North America, (b) environmental perception and settlement strategy, and (c) the historical geography of the Australian house. The second half examines problems in the historical geography of Tasmania during the 19th century, in rural, urban and wilderness areas.

**Requisites:** PREREQ - KGA100 or KGA101 or KGA121

**Staff:** Dr RG Kellaway

**Teaching Pattern:** 2x1-hr lectures weekly, 6 tutorials and 2 days field/project work

**Assessment:** 2-hr exam (60%), 3,000-word research essay (40%)

**Offered in Courses:** [ R3A ] [ S3G ] [ S3T ]

**KGA245/345 - Rural Systems (Unit not offered in 2006)**

**Description:** Spatial analysis or rural systems with special reference to current trends in agricultural, forestry and fishing industries; rural populations and counterurbanisation; transport, accessibility and infrastructure provision in smaller settlements; recreation and tourism as rural land users; alternative management mechanisms for rural resources.

**Requisites:** PREREQ - KGA100 or KGA101 or KGA121

**Teaching Pattern:** 2x1-hr lectures weekly, 6 tutorials and 2 days field or project work

**Assessment:** 2-hr exam (60%), 3,000-word essay (40%)

**Offered in Courses:** [ R3A ] [ S3G ] [ S3Y ]

**KGA272/372 - Understanding Place**

**Description:** The unit introduces students to the concept of place using the perspective of phenomenology. Because phenomenology promotes the particular over the generalized, and the insights of subjective experience over claims of objectivity, much recourse is made to the creative engagements with place to be found in literature. Readings will be informed by works in environmental thought, and relationships between ideas of place and nature will be explored.

**Requisites:** PREREQ - KGA100 or KGA101 or KGA121 or other units as approved

**Staff:** Dr P Hay

**Teaching Pattern:** 1x1-hr lecture and 1 x 1.5-hr seminar weekly

**Assessment:** 3,000-word essay (50%), 2-hr exam in June (50%)


**Offered in Courses:** [ S3G ] [ R3A ] [ S3T ]

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**KGA273/373 - Sustainable Cities**

**Description:** The unit focuses on the relationships between urban environments and sustainable communities. Sustainable Cities provides a general survey of urban environments, and then explores in more detail how urban environments have been and are being managed for sustainability outcomes. Emphasis is placed on the social and institutional challenges of sustainability in urban environments, and on the evaluation of various practical approaches that have been used to address the challenges of city life. At the completion of the unit, students should have a sound general and interdisciplinary introduction to many current and ongoing issues in urban environmental management and the conditions which may or may not foster sustainable communities.

**Requisites:** PREREQ - KGA100 or KGA101 or KGA121 MEXCL - KGA253/353, KGA254/354

**Staff:** Dr E Stratford

**Teaching Pattern:** 2x1-hr lectures weekly, 6 tutorials and 2 days field work or equiv

**Assessment:** 2-hr exam in June (50%), 1,750-word essay (35%), 1,250-word field report (15%)


Pugh C, *Sustainable Cities in Developing Countries*, ISBN 1853836192


**Offered in Courses:** [ R3A ] [ S3G ] [ S3T ] [ S3I ]

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**KGA278/378 - Wilderness and Natural Area Management**

**Description:** Provides practical skills for planning and managing wilderness and natural areas, with emphasis on conservation of both natural and cultural values, as well as their use for nature-based tourism. Major themes are conservation management; changing concepts of national parks; conservation and human values; cultural values in natural areas; cultural heritage management; tourism education; technical services; ecologically sustainable tourism development; and wilderness issues. A major component of the unit will be the treatment of nature-based tourism including its biophysical, social and cultural impacts. The unit includes a field work component. The unit takes an international perspective but special emphasis is placed on Tasmania.

**Requisites:** PREREQ - KGA100 or KGA101 or KGA121 or KGA122

**Staff:** Dr LK Kriwoken, Dr J Russell, Dr E Pharo (Hobart); Dr J Ellison, Dr G Unwin (Launceston)

**Teaching Pattern:** 2x1-hr lectures weekly, 6 tutorials and 2 days field work
Assessment: 2-hr exam in Nov (40%), 2,000-word major essay (40%), 1,000-word short essay (20%)

Required Texts: No texts required for Hobart students.

For Launceston students only:


Recommended Texts: No texts recommended for Hobart students.

Texts recommended for Launceston students only:


For Launceston students only:


Offered in Courses: [ R3A ] [ S3G ] [ S3T ] [ S3I ]

Unit Delivery Information:

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**KGA279/379 - Wilderness Ecology and Management**

Special Note: this BSc unit is available on the Launceston campus; lectures are shared with KGA278/378; but with separate practicals and assessment arrangements

Description: Provides practical and scientific skills for planning, managing and monitoring environmental resources in wilderness and other natural areas. Major themes include ecological sustainability, natural resource protection and use, conservation management and the ecological and environmental impacts of human access and industrial activity eg nature-based tourism and primary production. The unit has a substantial fieldwork component which includes the scientific measurement and analysis of environmental values and management impacts in native forest, catchments and coastal wetlands. Practical skills include the choice and application of suitable field sampling and inventory techniques, the derivation of baseline information and evaluation of environmental impacts, and the application and value of scientific interpretation in natural area management.

Requisites: PREREQ - KGA100 or KGA122 MEXCL - KGA278/378

Staff: Dr G Unwin, Dr J Ellison, and others

Teaching Pattern: 2x1-hr lectures weekly, 13 x 3-hr practicals, 9 taken on 3 days of field trips

Assessment: 2-hr exam in Nov (50%), 1,500-word project report (30%), practical/field assessment (20%)


Offered in Courses: [ S3G ] [ S3T ] [ S3Z ] [ S3I ]

Unit Delivery Information:

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**KGA300 - Environmental Research Project**

Special Note: Enrolment depends on availability of a suitable project, supervisor and resources

Description: This unit comprises a one-semester environmental or geographic research project. The aim of the unit is to provide students with research experience in an area of their own choosing. Project design, data collection, data management and data presentation skills will be developed. Students are encouraged to speak to the course coordinator or individual members of staff before they enrol. The unit will involve an average of 6 hours per week planning and completing an individual research project, closely supervised by a staff member of the School of Geography and Environmental Studies. Students can expect that staff will have some suggestions for projects, so that they do not need to have well developed ideas before beginning discussions. Students can undertake this unit in either semester, but it must completed within that semester.

Requisites: PREREQ - 25% KGA year 2 units, with at least one at a distinction or high distinction level

Staff: Dr P Hay (coordinator) and academic staff of Geography and Environmental Studies

Teaching Pattern: Approximately 78 hrs of supervised research

Assessment: Interest, enthusiasm, innovation (20%)

Data collection &/or data analysis skills (20%)

Report (approx. 5000 words): presentation (20%)

Report: understanding of subject (20%)

Report: analysis and interpretation (20%)

Offered in Courses: [ S3G ] [ S3T ] [ R3A ]

Unit Delivery Information:

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**KGA321 - Microclimatology**

Description: Covers the physical principles governing the transfer of radiation, heat and moisture in the atmosphere boundary layer;
Monitoring the microclimate of different environments; the surface energy balance, evapotranspiration and the hydrological cycle; and air pollution in the boundary layer.

**Requisites:** PREREQ - 25% KGA yr-2 units including **KGA209**

**Staff:** Dr M Nunez

**Teaching Pattern:** 2x1-hr lectures weekly, 1x2-hr tutorials, 2 days project/field work

**Assessment:** 2-hr exam in Nov (60%), tutorial reports (20%), 1,500-word project report (20%)

**Recommended Texts:** Oke TR, *Boundary Layer Climates*, ISBN 0416044328

**Offered in Courses:** [ R3A ] [ S3G ] [ S3G ] [ S3T ] [ S3Y ]

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**KGA331 - Vegetation Management**

**Description:** Develops an understanding of factors relevant to the conservation management of Australian natural vegetation and threatened plant species, and trains students in the formulation of vegetation management plans. Field work is used to familiarise students with the management problems of local vegetation types and to collect data relevant to the formulation of a vegetation management plan.

**Requisites:** PREREQ - 25% of KGA yr-2 units or **KPA205 MEXCL** - KGE513/813 **KGA516**

**Staff:** Prof JB Kirkpatrick

**Teaching Pattern:** 2x1-hr lectures weekly, 13x3-hr practicals, 9 taken on 3 days of field trips (students will be responsible for accommodation costs) and 4 as data interpretation assignments

**Assessment:** 2-hr exam (50%), a 1,500-word field-based management plan (30%), practical/field assessment (20%)


**Offered in Courses:** [ R3A ] [ S3G ] [ S3T ] [ S3Z ] [ S3Y ]

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**KGA332 - Fauna Conservation Management**

**Description:** Develops an understanding of: threats to the conservation of animal biodiversity and approaches to ameliorate them; rapid biodiversity assessment; the conservation needs of rare species and communities; the integration of fauna management with conservation of flora and landscape, on and off reserves. The unit will train students in the formulation of fauna assessment and management plans, including recovery plans, and their evaluation. The laboratory component has a large field base and will familiarise students with approaches to survey, documentation, analysis and management planning using local fauna communities.

**Requisites:** PREREQ - 25% of KGA yr-2 units or **KZA205 MEXCL** - KGE513/813 **KGA516**

**Staff:** Dr P McQuillan

**Teaching Pattern:** 2x1-hr lectures weekly, 13x3-hr practicals, 9 taken on 3 days of field trips (some weekends students are responsible for basic accommodation and food costs), and 4 as data interpretation assignments

**Assessment:** 2-hr exam in June (50%), a 1,500-word field-based management plan (30%), practical/field assessment (20%)

**Offered in Courses:** [ R3A ] [ S3G ] [ S3T ] [ S3Z ]

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**KGA365 - Environmental Remote Sensing**

**Description:** Looks at: (a) the nature of radiation in the atmosphere and radiative properties of earth surfaces; and (b) aerial photography and imagery systems including their interpretation and digital processing. The unit includes a project involving application of techniques to topics in the field of resource inventory, land use mapping or environmental monitoring.

**Requisites:** PREREQ - 25% of KGA yr-2 units or approved yr-2 Surveying, Engineering and/or Science units

**Staff:** Dr M Nunez and Dr KJ Michael

**Teaching Pattern:** 2x1-hr lectures weekly, 13x3-hr lab classes

**Assessment:** practical assignments (20%), 2,000-word project report (20%), 2-hr exam in June (60%)

**Recommended Texts:** Lilles and TM & Kiefer RWF, *Remote Sensing and Image Interpretation*, ISBN 0471577839

**Offered in Courses:** [ N3H ] [ R3A ] [ S3G ] [ S3G ] [ S3T ] [ S3Y ]

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**KGA374/474 - Professional Development (Unit not offered in 2006)**

**Special Note:** Hobart-based in the week before sem 2 commences, with placement (minimum of 10 day placement, Hobart- or Launceston-based) in sem 2; not available as part of a BA major but may be taken as an extra unit
Description: Geography and Environmental Studies are associated disciplines fundamentally concerned with space, place, region, landscape and environment. Practitioners work in diverse professions requiring knowledge of biogeography, climatology, demography, economic and social processes and patterns, politics and policy, planning and development, spatial information systems, and natural areas. Because of the broad scope of the disciplines, graduates often complete courses without a full appreciation of the applicability of the fields in different industry sectors, and without specific knowledge about the job market, job-seeking processes, professional ethics in the disciplines, or their networks and associations. The purpose of this unit is to provide students with opportunities to (a) learn about the professions that characterise geography and environmental studies; (b) reflect on what it means to be a professional working in public, private, and community sectors; (c) develop particular skills that may enhance the opportunity for employment on graduation; and (d) undertake a meaningful work placement with a Tasmanian employer.

Requisites: PREREQ - completion of 75% of KGA units at undergraduate level or enrolment in a graduate diploma or honours program in the School of Geography and Environmental Studies

Staff: Dr E Stratford

Teaching Pattern: (a) 9 am to 5 pm during the week before sem 2 -- lectures, independent workshop activities, practical exercises; (b) during sem 2 placement -- supervised program of work with a Tasmanian employer

Assessment: networking analysis (25%), full curriculum vitae (5%), job application (5%), simulated interview (5%), 2,000-word position paper (30%), 2,000-word critical assessment of placement (30%)

Offered in Courses: [ S3G ] [ S3T ]

KGA381 - Environmental Impact Assessment

Description: Provides an introduction to legal, administrative, social and scientific aspects of environmental impact assessment, environmental auditing, environmental management systems and related environmental management tools. The unit emphasises the practical aspects of environmental management (Tasmanian, Australian and international). The unit is intended for students who are interested in or plan to work in environmental management or a related field.

Requisites: PREREQ - 25% of KGA yr-2 units or yr-2 subjects approved by HoS

Staff: Dr LK Kriwoken

Teaching Pattern: 2x1-hr lectures, 1 tutorial weekly, 8x3-hr practicals

Assessment: 2-hour exam 40%, 1,500-word essay 30%, practicals, tutorials and charrette 30%

Offered in Courses: [ R3A ] [ S3G ] [ S3T ] [ N3H ] [ S3Z ] [ S3Y ]

Unit Delivery Information:

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KGA400/401 - Geography and Environmental Studies 4

Special Note: All potential honours students should ensure that an academic staff member is available for their supervision before commencing. Course selection and timing should be discussed with the supervisor before seeking approval from the coordinator of Graduate Programs. Full-time students enrol in KGA400 (100% for the full year); part-time students in KGA401 (50% for the full year). Full time students who will complete in Sem 1 or commence in Sem 2 should enrol in KGA402. Part time students who will complete in Sem 1 should enrol in KGA400. Part time students who commence in Sem 2 should enrol in KGA401. Please consult the school for your correct enrolment pattern.

Description: The Bachelor of Science Honours program involves: (a) writing an original thesis of up to 16,000 words on an approved subject in one of the major sub-disciplines of environmental studies, geography or spatial information science; (b) undertaking a general review of methodologies in a defined area broader than -- but related to -- the thesis, and writing a 5,000-word paper on that review; (c) undertaking additional formal coursework and the assessments specified or negotiated for that coursework; (d) presenting an introduction to the thesis research within eight weeks of commencement, including a thesis proposal and budget; (e) presenting a research seminar approximately eight weeks before completion; and (f) where required completing requisite ethics, skills management, risk management and related administrative tasks.

Requisites: PREREQ - bachelor degree with a sound major in Geography and Environmental Studies or another discipline relevant to the thesis topic and satisfying the Faculty honours entry requirements for major and GPA.

Staff: Dr E Stratford (Honours Coordinator)

Teaching Pattern: Varies according to negotiated program, but may include weekly meetings; lectures, seminars, fieldwork and other contact hours dependant on honours contract.

Assessment: 16,000-word thesis (62.5%), 5,000-word methodology review (12.5%) and other written work (essays, projects and/or exams) up to a maximum of 9,000 words (25%)

Offered in Courses: [ S4E ]

Unit Delivery Information:

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KGA402/403 - Geography and Environmental Studies 4

Special Note: All potential honours students should ensure that an academic staff member is available for their supervision before commencing honours. Course selection and timing should be discussed with the supervisor before seeking approval from the honours coordinator. Full-time students enrol in KGA402 (100% for the full year); part-time students in KGA403 (50% for the full year). Full time students who will complete in Sem 1 or commence in Sem 2 should enrol in KGA410. Part time students who will complete in Sem 1 should enrol in KGA411. Part time students who commence in Sem 2 should enrol in KGA412. Please consult the school for your correct enrolment pattern.

Description: The Bachelor of Arts Honours program consists of: (a) writing an original thesis of up to 16,000 words on an approved subject...
in one of the major sub-disciplines of environmental studies, geography or spatial information science; (b) undertaking a general review of methodologies in a defined area broader than -- but related to -- the thesis, and writing a 5,000-word paper on that review; (c) undertaking additional formal coursework and the assessments specified or negotiated for that coursework; (d) presenting an introduction to the thesis research within eight weeks of commencement, including a thesis proposal and budget; (e) presenting a research seminar approximately eight weeks before completion; and (f) where required completing requisite ethics, skills management, risk management and related administrative tasks.

**Requisites:** PREREQ - bachelor degree with a sound major in Geography and Environmental Studies or another discipline relevant to the thesis topic and satisfying the Faculty honours entry requirements for major and GPA.

**Teaching Pattern:** Varies according to negotiated program, but may include weekly meetings; lectures, seminars, fieldwork and other contact hours dependant on honours contract.

**Assessment:** 16,000-word thesis (62.5%), methodological review of 5,000 words (12.5%) and other written work (units, essays, projects and/or exams) up to a maximum of 9,000 words (25%)

**Offered in Courses:** [ R4A ]

**Unit Delivery Information:**

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**KGA406 - Special Topic in Environmental Studies**

**Description:** This unit provides opportunities for students enrolled in honours and course work Masters programs in the School of Geography and Environmental Studies to undertake a series of activities related to (but not replicating) their dissertation topic, with such activities being negotiated and documented with the staff member(s) concerned and approved by the Graduate Program Committee. Assignments in the unit will be equivalent to 5000 words in total, and will be marked by two members of the academic staff.

**Assessment:** 5,000 word essay to be marked by the thesis supervisor and 2nd independent marker with in the School.

**Unit Delivery Information:**

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**KGA407 - Geography and Environmental Studies 4 F/T**

**Special Note:** This code should be used by BSc (Hons) students who are going to be full time for 1 semester (either completing in Sem 1 or commencing in Sem 2).

**Description:** For details see KGA400/401

**Unit Delivery Information:**

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**KGA408 - Geography and Environmental Studies 4 P/T**

**Special Note:** This code should be used by BSc (Hons) students who are going to be part time and completing in Sem 1.

**Description:** For details see KGA400/401

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**KGA409 - Geography and Environmental Studies 4 P/T**

**Special Note:** This code should be used by BSc (Hons) students who are going to be part time and commencing in Sem 2.

**Description:** For details see KGA400/401

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**KGA410 - Geography and Environmental Studies 4 F/T**

**Special Note:** This code should be used by BA (Hons) students who are going to be full time for 1 semester (either completing in Sem 1 or commencing in Sem 2).

**Description:** For details see KGA402/403

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**KGA411 - Geography and Environmental Studies 4 P/T**

**Special Note:** This code should be used by BA (Hons) students who are going to be part time and completing in Sem 1.

**Description:** For details see KGA402/403

**Unit Delivery Information:**
KGA412 - Geography and Environmental Studies 4 P/T

Special Note: This code should be used by BA (Hons) students who are going to be part time and commencing in Sem 2.

Description: For details see KGA402/403

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KGA415 - Bachelor of Environmental Science Honours in Geography & Environmental Studies

Description: The unit will develop knowledge and skills in research oriented towards environmental science. Research training will be provided through workshops, seminars and completion of a research project in an appropriate area of environmental science. Students will be required to further develop their communication skills and understanding of environmental science through the review of a current environmental issue, the analysis and interpretation of research results, and communication of their research in a seminar and thesis.

Staff: tba

Assessment: Desktop study of a current environmental issue: 12.5%; Research proposal: 12.5%; Research seminar: 15%; Research thesis, including literature review: 60%

Unit Delivery Information:

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KGA416 - Bachelor of Environmental Science Honours in Geography & Environmental Studies

Description: The unit will develop knowledge and skills in research oriented towards environmental science. Research training will be provided through workshops, seminars and completion of a research project in an appropriate area of environmental science. Students will be required to further develop their communication skills and understanding of environmental science through the review of a current environmental issue, the analysis and interpretation of research results, and communication of their research in a seminar and thesis.

Staff: tba

Assessment: Desktop study of a current environmental issue: 12.5%; Research proposal: 12.5%; Research seminar: 15%; Research thesis, including literature review: 60%

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KGA417 - Bachelor of Environmental Science Honours in Geography & Environmental Studies

Description: The unit will develop knowledge and skills in research oriented towards environmental science. Research training will be provided through workshops, seminars and completion of a research project in an appropriate area of environmental science. Students will be required to further develop their communication skills and understanding of environmental science through the review of a current environmental issue, the analysis and interpretation of research results, and communication of their research in a seminar and thesis.

Staff: tba

Assessment: Desktop study of a current environmental issue: 12.5%; Research proposal: 12.5%; Research seminar: 15%; Research thesis, including literature review: 60%

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KGA450/451 - Natural Environment and Wilderness Management (Honours)

Special Note: All potential honours students should ensure that an academic staff member is available for their supervision before commencing. Course selection and timing should be discussed with the supervisor before seeking approval from the Coordinator of Graduate Programs. Please consult the school for your correct enrolment pattern.

Description: Involves the completion of the fourth year of the BSc specimen course in Natural Environment and Wilderness Management. The Honours program involves:(a) writing an original thesis of up to 16,000 words on an approved subject in an area of study pertinent to natural environment and wilderness management; and related to -- the thesis, and writing a 5,000-word paper on that review; (c) undertaking additional formal coursework and the assessments specified or negotiated for that coursework; (d) presenting an introduction to the thesis research within eight weeks of commencement, including a thesis proposal and budget; (e) presenting a research seminar approximately eight weeks before completion; and (f) where required completing requisite ethics, skills management, risk management and related administrative tasks.

Requisites: PREREQ - completion of 3 yrs of the BSc specimen course in Natural Environment and Wilderness Management and satisfying the Faculty Honours entry requirements

Staff: All members of the academic staff.

Teaching Pattern: Varies according to negotiated program, but may include weekly meetings; lectures, seminars, fieldwork and other contact hours dependent on honours contract.

Assessment: 16,000-word thesis (62.5%), 5,000-word methodology review (12.5%) and other written work (units, essays, projects and/or exams) up to a maximum of 9,000 words (25%).
KGA453 - Natural Environment and Wilderness Management (Honours) F/T

Special Note: This code should be used by Bachelor of Natural Environment and Wilderness Management (Honours) students who are going to be full time for 1 semester (either completing in Sem 1 or commencing in Sem 2). For full details of this unit see KGA450.

Description:

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KGA454 - Natural Environment and Wilderness Management (Honours) P/T

Special Note: This code should be used by Bachelor of Natural Environment Wilderness Management (Hons) students who are going to be part time and completing in Sem 1. For full details of this unit see KGA450.

Description:

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KGA455 - Natural Environment and Wilderness Management (Honours) P/T

Special Note: This code should be used by Bachelor of Natural Environment Wilderness Management (Hons) students who are going to be part time and commencing in Sem 2. For full details of this unit see KGA450.

Description:

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KGA500/501 - Graduate Diploma in Science with Honours, specialising in Geography

Special Note: All potential honours students should ensure that an academic staff member is available for their supervision before commencing honours. Course selection and timing should be discussed with the supervisor before seeking approval from the Coordinator of Graduate Programs.

Description: This program involves: (a) writing an original thesis of up to 16,000 words on an approved subject in one of the major sub-disciplines of environmental studies, geography or spatial information science; (b) undertaking a general review of methodologies in a defined area broader than -- but related to -- the thesis, and writing a 5,000-word paper on that review; (c) undertaking additional formal coursework and the assessments specified or negotiated for that coursework; (d) presenting an introduction to the thesis research within eight weeks of commencement, including a thesis proposal and budget; (e) presenting a research seminar approximately eight weeks before completion; and (f) where required completing requisite ethics, skills management, risk management and related administrative tasks

Full-time students enrol in KGA500 (100% for the full year); part-time students in KGA501 (50% for the full year). Full time students who will complete in Sem 1 or commence in Sem 2 should enrol in KGA507. Part time students who will complete in Sem 1 should enroll in KGA508. Part time students who commence in Sem 2 should enrol in KGA509. Please consult the school for your correct enrolment pattern.

Staff: All members of the academic staff.

Assessment: The Environmental Studies units (50%) are assessed on the basis of essays, seminars and research projects. The thesis is worth 50%.

Offered in Courses: [ S6X ]

KGA507 - Graduate Diploma in Science with Honours, specialising in Geography F/T

Special Note: This code should be used by Graduate Diploma of Science (Hons) students who are going to be full time for 1 semester (either completing in Sem 1 or commencing in Sem 2).

Description: For details see KGA500/501.

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KGA508 - Graduate Diploma in Science with Honours, specialising in Geography P/T

Special Note: This code should be used by Graduate Diploma in Science (Hons) students who are going to be part time and completing in Sem 1.

Description: For details see KGA500/501.

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KGA509 - Graduate Diploma in Science with Honours, specialising in Geography P/T

Special Note: This code should be used by Graduate Diploma in Science (Hons) students who are going to be part time and completing in
### KGA511 - Planning, Theory, Process and Applications

**Description:** This unit provides a foundation for advanced studies in environmental planning and management. The characteristics and content of environmental planning are presented, along with the various types of environmental plans. The historical development and current state of planning theory is examined and located in the context of wider social theory. Various theoretical positions are debated, and their importance for informing planning practice analysed, including coverage of topics such as rationality and governance. Planning methods are described, including strategic planning, adaptive environmental management, public policy instruments and community participation. Australian planning institutions are reviewed, including federal, state, regional and local planning policies, processes and legislation. Particular attention is paid to the Tasmanian planning system. Important planning competencies in communication, mediation and negotiation; writing plans; and evaluation are addressed through problem-based exercises. Specific applications are presented on state-wide strategic planning, regional NRM planning, coastal planning and incident planning.

**Staff:** Dr Michael Lockwood

**Teaching Pattern:** Lectures, workshops seminars 4 hrs weekly (13 weeks); up to 4 days field work

**Assessment:** 4,000 word report (40%), 3,000 word plan (35%), 1 hr seminar (25%)

**Offered in Courses:** [ S6L ] [ S7U ] [ S5Q ] [ S6Q ] [ S6B ] [ S7D ]

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### KGA512 - Planning for Sustainable Land Use Outcomes

**Description:** This unit provides a foundation for advanced studies in sustainable land use. The characteristics of urban areas and regions are presented, and challenges that typify planning for them are outlined. The historical development and current status of sustainable land use planning are described for the Tasmanian and other cases. A focus of the unit is statutory planning and particular emphasis is placed on understanding Tasmania's statutory regimes as these are manifest in the Resource Management and Planning System. Considerable attention is paid to the creation, interpretation, critical analysis and comprehension of planning schemes and development applications, since these are central to much of the day-to-day business of sustainable land use planning. Nonetheless, planning for these domains does not occur outside larger institutional milieux, and the last part of the unit turns to address the questions of government, governance, citizenship and power as these gain expression in various debates about sustainability, liveable communities, and urban and regional planning.

**Staff:** Dr Elaine Stratford, Mr Kerry Boden

**Teaching Pattern:** Interactive lectures (4 hrs weekly over 13 weeks), seminars and field trips.

**Assessment:** (a) essay (c.3000 words equivalent) (25%); statutory planning exercise [a planning scheme amendment and development application] (c. 3000 words equivalent) (25%); individual project 35% (c.4000 words equivalent); tests 15%.


**Offered in Courses:** [ S6L ] [ S7U ]

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### KGA513 - Professional Placement

**Special Note:** Alternative arrangements may be made for candidates with extensive planning experience, but who need this unit to complete a Degree. *Only* for Environmental Planning students (S6L and >S7U), all other students require Head of School approval to enrol.

**Description:** Students are assigned to a placement in environmental planning either in a government or private sector organisation approved by the University. The placement gives students the opportunity to better understand environmental planning practice. Students contribute to an environmental planning project while working under the supervision of a qualified professional. Understandings are developed of the structure and functions of the placement organisation, role and responsibilities of planners within the placement organisation, and basic administrative processes. Students are encouraged to develop contacts within the profession and among stakeholders. Specific workplace skills are developed in areas such as leadership, supervision and decision-making, organising work and staff, asset management, financial management, quality assurance and ethical practice. Students also undertake directed reading on a topic related to their placement task.

**Staff:** Dr J Russell

**Teaching Pattern:** Up to 8 hours seminars, at least 10 days placement in a approved organisation, meetings with unit coordinator.

**Assessment:** Professional placement report, - up to 6,000 word literature review.

**Offered in Courses:** [ S6L ] [ S7U ]

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KGA514 - Sustainable Environmental Management

Special Note: This unit is able to be completed by distance education.

Description: This unit comprises three modules. The first provides students with advanced insights into sustainability concepts, institutions, processes, tools and applications. The second module develops and applies these insights to notions of sustainable production and consumption, with attention to their principles, concepts, processes and tools. Module three takes a systems approach to sustainable production and consumption exploring current trends in the mining, agriculture/irrigation, fisheries, forestry and tourism sectors and paying particular attention to the use of environmental management systems in these sectors.

Staff: Dr Elaine Stratford

Teaching Pattern: Lectures, workshops and seminars 4 hrs weekly (13 weeks); 4 days field work
(Distance students: 2 days seminars, 2 days field work)

Assessment: 3,000 word essay (40%), 1000 word information report plus 30 minute presentation (30%), 2,000 word field study report (25%), class participation (5%).

Offered in Courses: [ S5B ] [ S6B ] [ S6W ] [ S7D ]

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KGA515 - Environmental Values

Description: 1. Developments in environmental philosophy
2. Environment in western political thought
3. Environment in social and economic thought
4. New environmental value paradigm
5. Phenomenology and perceptions of place
6. The challenge to growth economics

Staff: Dr Peter Hay

Teaching Pattern: Lectures, workshops and seminars 4 hrs weekly (13 weeks)

Assessment: 2 x 4,000 word essays (each @ 50%)

Offered in Courses: [ S6B ] [ S6W ] [ S7D ]

Unit Delivery Information:

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KGA516 - Ecosystem Conservation

Description: The objective of this unit is to allow students without previous substantial ecological training to understand the basic principles of ecology, the practical problems of conservation management, and the procedures that can be used in conservation management. After completing the unit students should be able to have sufficient understanding of these areas to be able to critically assess arguments related to biological conservation and geoconservation, and a knowledge base for further work in nature conservation. They should also be able to effectively work with colleagues on a group project. The unit covers:

* Ecosystem concepts and processes
* Disturbance ecology
* Fire ecology
* Landscape ecology
* Flora and fauna survey
* Conservation needs of species and communities
* Geodiversity conservation
* Management actions for conserving habitat
* Management actions for conserving plant species and communities
* Management actions for significant fauna

Requisites: MEXCL - KGE513, KGE813

Staff: Dr Emma Pharo (Coordinator), Dr Peter McQuillan,

Teaching Pattern: 4 hours of lectures per week with a 3 day study school (for all students including distance students to attend).

Assessment: 5000 word essay (50%), group research project report (50%)


Additional readings will be provided.

Offered in Courses: [ S5B ] [ S6B ] [ S6W ] [ S5Q ] [ S6Q ] [ S7D ]

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KGA517 - Protected Area Management

Description: This unit provides an integrated account of protected area management. While the focus is on Australia, the global context of...
protected areas is discussed, including issues of definition, representativeness, governance and effectiveness. An important theme carried through the unit is the relationship between protected areas and their surrounding communities and landscapes/seascapes. This is examined in terms of trans-boundary management, community engagement, local governance, and Indigenous protected areas. Specific management topics addressed include natural and cultural heritage, threatening processes, incidents, fire, recreation and tourism, and performance evaluation. These topics will be explored through the experiences of practitioners, case study examples and fieldwork.

**Staff:** Dr Michael Lockwood, Dr Lorne Kriwoken and Dr Jim Russell

**Teaching Pattern:** Lectures, workshops and seminars 3 hrs weekly (13 weeks); 3 days field work

(Distance students: up to 2 days seminars, 3 days field work)

**Assessment:** 3,000 word report (40%), 3,000 word field report (40%), 1 hour seminar presentation (20%)


**Offered in Courses:** [ SSQ ] [ S6Q ] [ S7D ] [ S7P ]

### Unit Delivery Information:

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### KGA519 - Planning Project

**Description:** In this unit, students have the opportunity to undertake an in-depth exploration of a particular planning problem or task. The project is carried out under the guidance of a supervisor, or supervisory panel. The topic must be approved by the Coordinator of Environmental Planning and the staff member supervising the work. The results of the work are presented in a report of 8,000 words.

**Staff:** Dr M Lockwood

**Teaching Pattern:** At least 13 hours of supervisory meetings.

**Assessment:** Report of up to 8,000 words, assessed by two University of Tasmania academic staff with expertise germane to the project topic

**Offered in Courses:** [ S7U ]

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### KGA802 - Master of Applied Science Thesis

**Description:** Through the production of a original research thesis the aims of this unit is to:
1. encourage the candidate to develop the ability to acquire relevant information on a particular field from the published literature and to synthesize a systematic and logical review which identifies key issues, concepts and theory;
2. provide practical research training through a specialized project to facilitate the design and conduct of future investigations in the chosen field and related areas;
3. develop skills in critical analysis of published material and newly collected information, identifying significant issues and limitations or shortcomings in the available information;
4. develop written skills to a level appropriate for preparation of professional reports and preparation of a paper suitable for submission to a refereed journal;
5. develop oral communication skills to a level appropriate for the delivery of a presentation at a national conference; and
6. prepare candidates for undertaking higher degrees by research and professional working careers.

**Staff:** All academic staff

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### KGA805 - Master of Arts (Geography) (F/T)

**Description:** This research degree is administered by the Research Higher Degree Unit. Information is available at http://www.research.utas.edu.au/rhd/ All students considering enrolling in this degree should consult Dr Elaine Stratford, Coordinator of Graduate Programs via email: Elaine.Stratford@utas.edu.au or 6226 2462.

**Staff:** All members of the academic staff.

**Assessment:** Thesis based degree

### Unit Delivery Information:

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### KGA806 - Master of Arts (Geography) (P/T)

**Description:** Description: This research degree is administered by the Research Higher Degree Unit. Information is available at http://www.research.utas.edu.au/rhd/ All students considering enrolling in this degree should consult Dr Elaine Stratford, Coordinator of Graduate Programs via email Elaine.Stratford@utas.edu.au or 6226 2462.

**Staff:** All members of the academic staff.

**Assessment:** Thesis based degree

### Unit Delivery Information:
### KGA806 - Master of Applied Science, Thesis

**Special Note:** this unit is to enable part-time students completing in Sem 1 or starting in Sem 2 to complete their thesis (the thesis is worth 50% of the degrees weight, students will receive a XE result till the thesis is completed)

**Description:** For full details see KGA802

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### KGA808 - Research Project

**Description:** This unit provides opportunities for students enrolled the Masters of Applied Science program in the School of Geography and Environmental Studies to undertake a series of activities related to (but not replicating) their dissertation topic, with such activities being negotiated and documented with the staff member/s concerned and approved by the Graduate Program Committee. The project will be equivalent to 10,000 words in total, and will be marked by the students thesis supervisor and a second independent marker within the School.

**Assessment:** The project will be equivalent to 10,000 words in total, and will be marked by the students thesis supervisor and a second independent marker within the School.

**Offered in Courses:** [ S7P ]

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### KGA845 - Honours Thesis

**Special Note:** Students enrol in KGE540 if they are full time and KGE541 if they are part-time.

**Description:** The thesis component of the Graduate Diploma of Environmental Studies involves the completion of supervised research on an environmental topic, and the preparation of a 15,000-word thesis. The research topic must be approved by the Coordinator of Graduate Programs Dr Elaine Stratford, and the staff member supervising the work. The research and thesis preparation is equivalent to five months full-time study. Students must present an introduction on the proposed topic and a short seminar as part of their research program.

**Staff:** All members of the academic staff

**Assessment:** The thesis is assessed by two examiners. The thesis accounts for 50% of the final honours result

**Offered in Courses:** [ S6W ]

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### KGE541 - Honours Thesis

**Special Note:** Students enrol in KGE540 if they are full time and KGE541 if they are part-time. This unit is to enable part-time students completing in Sem 1 or starting in Sem 2 to complete their thesis (the thesis is worth 50% of the degrees weight, students will receive a XE result till the thesis is completed)

**Description:** The thesis component of the Graduate Diploma of Environmental Studies involves the completion of supervised research on an environmental topic, and the preparation of a 15,000-word thesis. The research topic must be approved by the Coordinator of Graduate Programs Dr Elaine Stratford, and the staff member supervising the work. The research and thesis preparation is equivalent to five months full-time study. Students must present an introduction on the proposed topic and a short seminar as part of their research program.

**Staff:** All members of the academic staff

**Assessment:** The thesis is assessed by two examiners. The thesis accounts for 50% of the final honours result

**Offered in Courses:** [ S6W ]

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### KGE800 - Master of Environmental Studies (F/T)

**Description:** This research degree is administered by the Research Higher Degree Unit. Information is available at http://www.research.utas.edu.au/rhd/

All students considering enrolling in this degree should consult Dr Elaine Stratford, Coordinator of Graduate Programs via email Elaine.Stratford@utas.edu.au or 6226 2462.

**Staff:** All members of the academic staff.

**Assessment:** Thesis based degree.

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KGE801 - Master of Environmental Studies (P/T)

**Description:** This research degree is administered by the Research Higher Degree Unit. Information is available at http://www.research.utas.edu.au/rhd/

All students considering enrolling in this degree should consult Dr Elaine Stratford, Coordinator of Graduate Programs via email Elaine.Stratford@utas.edu.au or 6226 2462.

**Staff:** All members of the academic staff

**Assessment:** Thesis based degree

**Unit Delivery Information:**

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KGE840 - Research Project Thesis

**Description:** The Research Project comprises one third (50% of 150%) of the requirements for the Master of Environmental Management degree. The project is carried out under the guidance of a supervisor, or supervisory panel. The results of the research are reported in a minor thesis of 20,000-30,000 words which is assessed by two examiners, at least one of whom is from outside the University.

**Staff:** All members of the academic staff

**Offered in Courses:** [S7D]

**Unit Delivery Information:**

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KGG155 - Geomatics 1 -- Surveying

**Special Note:** The method of teaching will be by lectures and tutorials presented in Hobart and via videolink to Launceston. Students in Launceston will be required to attend three one-day practical/tutorial sessions in Hobart during the semester.

**Description:** Introduces students to field techniques, calculations and analysis techniques used in surveying and spatial information science. Introduction to Surveying -- overview of instrumentation, methods and applications; elementary data collection; measurement of length, direction, azimuth, angles, etc; theory and use of the theodolite and level, electromagnetic distance measurement and total station; computational methods for data reduction (traversing, intersection, trilateration) in a hand-held calculator environment; Introduction to Analysis of Observations -- scope and nature of statistical analysis; error theory; error propagation; simple statistical tests and computation of confidence measures; simple least squares adjustment theory and application to surveying measurement.

**Requisites:** COREQ - KMA153

**Staff:** Dr Volker Janssen

**Teaching Pattern:** 26 lectures, 13 tutorials, 36 hrs practical

**Assessment:** 3-hour exam (40%), practical exam (10%), practical reports and assignments (50%)


**Offered in Courses:** [N3H]

**Unit Delivery Information:**

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KGG215 - Surveying for Engineers

**Description:** Provides basic skills in plane surveying and spatial measurement together with a general introduction to advanced surveying and mapping topics. Studies cover: (a) Surveying and Mapping 1 -- basic skills in plane surveying and spatial measurement (coordinate systems, use of minor instruments, levelling, linear measurement, use of theodolites, total stations, traversing); (b) Surveying and Mapping 2 -- introduction to advanced surveying science and techniques (photogrammetry, remote sensing, GPS, geographic information systems, specialised industrial measurement techniques); (c) Engineering Applications -- discussion of specific applications of surveying to engineering problems.

**Requisites:** MEXCL - KG275

**Staff:** Dr JE Osborn

**Teaching Pattern:** 2 lectures weekly, 3-hr practical and1 tutorial fortnightly

**Assessment:** final exam (50%), assignments and practicals (50%)

**Offered in Courses:** [N3A]

**Unit Delivery Information:**
KGG220 - Geomatics 2a: Surveying

**Description:** Develops a broad knowledge relating to the use and application of different instrumentation and measurement methodologies in the fields of spatial information science and surveying. a) Instrumentation: Optical levels, precise levels, mechanical and electronic theodolites, distance measurement techniques, digital and optical techniques for angular measurement, inertial and other miscellaneous instrumentation; Calibration requirements and survey standards. b) Methodology: standard and precise levelling, trigonometrical heighting, intersection, resection, triangulation, trilateration, detail surveying, set out, precise traversing; associated software systems; reduction of field observations to the geodetic reference surface; introduction to the Global Positioning System (GPS).

**Requisites:** PREREQ - KGG155, KYA171, (KMA152, KMA153) or (KMA153, KMA171) COREQ - KGG270

**Staff:** Mr C Watson

**Teaching Pattern:** 26 lectures, 52 hrs practical and tutorials

**Assessment:** 3-hr exam (40%), Practical Exam (10%), 8 Practical/Assignment reports (50%)


**Offered in Courses:** [ N3H ]

**Unit Delivery Information:**

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KGG230 - Geomatics 2b: Remote Sensing & Photogrammetry

**Description:** Introduces remote sensing and photogrammetry, and then concentrates on the mathematics used to represent single and stereo images captured with film and digital cameras, and methods of computing object space coordinates from stereo models. Basic mathematics: image space and object space coordinate systems and transformations. Image capture: sensors and platforms. Representation of a single image: collinearity condition equations; Representation of two images: coplanarity condition equations. Relative orientation by coplanarity and collinearity, absolute orientation, computation of model and object space coordinates. Operation of analytical and digital plotters. Introduction to flight planning.

**Requisites:** PREREQ - KGG145, KGG155

**Staff:** Dr JE Osborn

**Teaching Pattern:** 26 lectures, 52 hrs practical and tutorials

**Assessment:** exam (50%), assignments, tutorials, practicals (50%)

**Recommended Texts:** Wolf PR & Dewitt BA, *Elements of Photogrammetry with Applications in GIS*, ISBN 0072924543

**Offered in Courses:** [ N3H ] [ S5A ]

**Unit Delivery Information:**

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KGG240 - Geomatics 2c: Introduction to GIS

**Special Note:** Students who do not have basic PC knowledge and familiarity with Windows should contact the lecturer before enrolment

**Description:** This unit introduces the basic concepts and applications of Geographic Information Systems (GIS). Definitions, components and functions of GIS are examined. The theory behind spatial data representation, data structures, vector and raster data models, analysis, and map algebra is addressed. A significant component of the unit consists of practical sessions using PC based GIS packages designed to apply concepts presented in lectures. Techniques for data collection, data integration, data manipulation, spatial analysis and modeling are introduced. Emphasis is placed on GIS as an integrating technology incorporating a range of applications and the increasing interaction between GIS, Global Positioning System (GPS), Photogrammetry, and Remote Sensing. Students examine the decision support role of GIS through the development and implementation of solutions to spatial problems including multi-criteria decision making and other means of spatial data analysis.

**Requisites:** MEXCL - KGG245

**Staff:** Dr Arko Lucieer

**Teaching Pattern:** 26 lectures, 36 hrs practicals

**Assessment:** 2-hour exam (40%), two assignments (30%), project (30%)


KGG240 - Introduction to GIS

Description: This unit introduces the basic concepts and applications of Geographic Information Systems (GIS). Definitions, components and functions of GIS are examined. The theory behind spatial data representation, data structures, vector and raster data models, analysis, and map algebra is addressed. A significant component of the unit consists of practical sessions using PC based GIS packages designed to apply concepts presented in lectures. Techniques for data collection, data integration, data manipulation, spatial analysis and modeling are introduced. Emphasis is placed on GIS as an integrating technology incorporating a range of applications and the increasing interaction between GIS, Global Positioning System (GPS), Photogrammetry, and Remote Sensing. Students examine the decision support role of GIS through the development and implementation of solutions to spatial problems including multi-criterion decision making and other means of spatial data analysis.

Requisites: MEXCL - KGG240

Staff: Dr Arko Lucieer

Teaching Pattern: 26 lectures, 39 hrs practicals

Assessment: 2-hour exam (40%), two assignments (30%), project (30%)

Offered in Courses: [N3H] [S3Y]

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KGG260 - Geomatics 2d: Transformations and Projections

Description: Introduces the concepts of the various geometric surfaces and their mathematical properties for use in mapping and computation on the surface of the earth: surveying and mapping projections; transverse Mercator projection; AMG/MGA; geometry of the ellipsoid; ellipsoidal computations; arc-to-chord, scale factor, grid convergence; transformation of coordinates between coordinate systems.

Requisites: PREREQ - KGG145, KGG155; (KMA152 or KMA171) COREQ - KMA265

Staff: Dr Volker Janssen

Teaching Pattern: 26 lectures, 13 tutorials

Assessment: exam (50%), assignments, tutorials (50%)

Offered in Courses: [N3H]

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KGG270 - Geomatics 2e: Analysis of Observations

Description: Provides students with a working knowledge of least squares techniques and their application in spatial information science; theory of least squares; adjustment of measured data; adjustment with constraints; detection of outliers; network design and optimisation. Case studies are used to provide practical application of the material presented in the lectures. Students are shown various adjustment software packages and introduced to advanced least squares problems at the conclusion of the course.

Requisites: PREREQ - (KMA152, KMA153) or (KMA171, KMA153), KGG155 COREQ - KMA265

Staff: Mr C Watson

Teaching Pattern: 26 lectures, 13 tutorials

Assessment: 3-hour exam (50%), Practical/Oral Exam (10%), 5 Tutorial/Assignment Reports (40%)


Offered in Courses: [N3H]

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KGG275 - Field Mapping and Measurement

Description: Provides students from the physical and life sciences with an introduction to the tools and techniques used to produce maps, using field surveying instruments, aerial photography, and satellite imagery. Studies cover: (a) Surveying and Mapping 1 — basic skills in plane surveying (coordinate systems, use of minor instruments, levelling, traversing); (b) Surveying and Mapping 2 — introduction to
advanced surveying science and mapping techniques (shape of the earth, map projections, photogrammetry, GPS, Geographic Information Systems); and (c) Scientific Applications -- discussion of specific applications of surveying in the physical and life sciences.

**Requisites:** MEXCL - KGG215

**Staff:** Dr JE Osborn

**Teaching Pattern:** 2 lectures weekly, 3-hr practical fortnightly

**Assessment:** final exam (50%), assignments and practicals (50%)

**Offered in Courses:** [ S3G ] [ S3T ] [ S5A ]

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**KGG280 - Geomatics 2f: Studio**

**Description:** A studio project that integrates the coursework material covered in year 2 Geomatics units, allowing students to undertake a major project that includes project design, preanalysis, data collection, data management, and presentation.

**Requisites:** PREREQ - KGG230, KGG240, KGG260 COREQ - KGG220, KGG270

**Staff:** Dr JE Osborn (Coordinator)

**Teaching Pattern:** approx 90 hrs supervised project work

**Assessment:** project (70%), field work (15%), class presentations (15%)

**Offered in Courses:** [ N3H ]

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**KGG320 - Geomatics 3a: Surveying**

**Description:** Applies acquired knowledge of spatial measurement techniques and associated instrumentation to develop an improved understanding of a range of specific surveying applications including: industrial metrology, construction surveying (monument selection, control networks and set out techniques), road design (horizontal and vertical curves), deformation and monitoring applications, hydrographic surveying, cadastral surveying and surveying with Real Time Kinematic (RTK) GPS. Case study examples are used to illustrate specific applications and provide a real world context to material covered in the lectures and undertaken in allocated practical sessions.

**Requisites:** PREREQ - KGG220, KGG240, KGG260, KGG270 COREQ - KGG350

**Staff:** Dr C Watson

**Teaching Pattern:** 26 lectures, 39 hrs practical, 4 days of site visits, workshops

**Assessment:** 3-hour exam (40%), Practical Exam (10%), 2 Assignments and 5 Practical Reports (50%)


**Offered in Courses:** [ N3H ]

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**KGG330 - Geomatics 3b: Remote Sensing & Photogrammetry**

**Description:** Provides a detailed treatment of the radiometric and geometric errors associated with film and digital cameras; together with an introduction to the geometry of other image sensing platforms. Provides a detailed knowledge of the operation of digital photogrammetric workstations. Introduces the principles of strip and block adjustment and practical experience on a DPW. Includes a project-based exercise in advanced flight planning.

**Requisites:** PREREQ - KGG220, KGG230, KGG260, KGG270

**Staff:** Dr JE Osborn

**Teaching Pattern:** 26 lectures, 13 tutorials, 26 hrs practical

**Assessment:** exam (50%), assignments, tutorials, practicals (50%)

**Recommended Texts:** Wolf PR & Dewitt BA, *Elements of Photogrammetry with Applications in GIS*, ISBN 0072924543

**Offered in Courses:** [ N3H ] [ S5A ]

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**KGG340 - Geomatics 3c: Advanced Geographic Information Systems (GIS)**

**Description:** Exposes students to advanced topics in spatial analysis, including, database management systems, metadata, interpolation, surface modelling, visibility analysis, hydrological modelling and error propagation. For a fuller description see KGG345

**Requisites:** PREREQ - KGG240 MEXCL - KGG345

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University of Tasmania, Unit Guide 2006  www.utas.edu.au/units/  612
Units Coded K – Faculty of Science, Engineering & Technology

Staff: Dr A Lucieer

Teaching Pattern: 26 lectures, 52 hrs practicals

Assessment: exam (40%), assignments (20%), project (40%)


Offered in Courses: [ N3H ]

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KGG345 - Advanced Geographic Information Systems (GIS)

Special Note: for Science and Arts students only

Description: Exposes students to advanced topics in spatial analysis, including interpolation, surface modelling, visibility analysis, hydrological modelling and error propagation. These topics are explored during practical sessions through a range of applications including planning, infrastructure management and environmental modelling. Students gain experience in the techniques involved in constructing topologically correct spatial data sets. Technical problem solving skills are developed through the integration of diverse data within a powerful GIS environment. Use of a PC-based GIS enables students to experiment with a variety of advanced spatial analysis tools.

Requisites: PREREQ - KGG245 MEXCL - KGG340

Staff: Dr A Lucieer

Teaching Pattern: 26 lectures, 39 hrs practicals

Assessment: exam (40%), assignments (20%), project (40%)


Offered in Courses: [ S3G ] [ S3T ] [ R3A ] [ S5A ]

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KGG350 - Geomatics 3d: Geodesy

Description: Geodesy is the science of measuring and mapping the earth’s surface, using both terrestrial and space-based (satellite) techniques. The unit provides students with an understanding of fundamental geodetic computations and principles, progressing to the use of satellite techniques to determine 3-D position on the earth's surface. Geodesy -- reference coordinate systems, geodetic reference frame definition; geodetic height systems and datums; the earth's gravity field, geoid models; elements of satellite surveying (time and reference systems, orbital motion). Global Navigation Satellite Systems (GNSS) -- Global Positioning System (GPS) satellites, signal and measurement characteristics; GPS instrumentation; GPS observations and equations; introduction to GPS baseline processing; ambiguity resolution; modern GPS surveying techniques; other GNSS such as Galileo.

Requisites: PREREQ - KGG220, KGG260, KGG270

Staff: Dr Volker Janssen

Teaching Pattern: 26 lectures, 13 tutorials, 26 hrs practicals

Assessment: 3-hour exam (60%), practicals, tutorials, assignments (40%)


Offered in Courses: [ N3H ]

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KGG355 - Geomatics 3e: Studio

Special Note: Enrolment in semester 1 is subject to special approval by the degree coordinator.

Description: A studio project that integrates the coursework material covered in year 3 Geomatics units, allowing students to undertake a major project that includes project design, preanalysis, data collection, data management, and presentation.

Requisites: PREREQ - KGG280 COREQ - KGG320, KGG330, KGG340, KGG350

Staff: tba

Teaching Pattern: approx 90 hrs supervised project work

Assessment: project (70%), field work (15%), class presentations (15%)

Offered in Courses: [ N3H ]

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KGG375 - Advanced Spatial Data Analysis
Special Note: For BSc students only

Description: This unit deals with the concepts and methods of spatial data analysis. The unit examines a range of key issues in the rapidly evolving technology of spatial data analysis, including spatial statistics, data interpolation, data uncertainty, error propagation modelling, and accuracy assessment. These issues are explored in the context of both GIS and remote sensing applications. The incorporation of statistics into the spatial dimension is presented through a range of statistical techniques including kriging and spatial auto correlation.

Requisites: PREREQ - KGG340 or KGG345 MEXCL - KGG475

Staff: Dr Arko Lucieer

Teaching Pattern: 13 lectures, 13 tutorials, 26 hours practical

Assessment: 2-hour exam (40%), 3 assignments (60%)

Offered in Courses: [ S3G ] [ S5A ]

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KGG380 - GIS Application Development

Description: As users become more experienced with GIS, they require more complex applications and analyses procedures. The more complex applications are usually not supported by the basic functions of a GIS but must be implemented using a scripting or programming language. This unit is designed to introduce application development in GIS with a focus on implementation of new spatial analysis algorithms. Material will be introduced through a series of lectures, tutorials and practical sessions. Students will gain experience with customising GIS using scripting and programming languages

Requisites: PREREQ - KGG345 MEXCL - KGG480

Staff: Dr Arko Lucieer

Teaching Pattern: 13 lectures, 13 tutorials, 36 hrs practicals

Assessment: 2-hour exam (30%), 4 assignments (70%)


Offered in Courses: [ S3G ] [ S5A ]

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KGG385 - Geographic Information Systems Project

Special Note: For BSc students only

Description: This unit consists of a project designed to reinforce the student's understanding of the underlying science and principles of Geographic Information Systems, gain an understanding of at least one application of GIS in detail, and provide experience in project design and implementation. The project consists of 90 hours of supervised investigation and experimental work involving the use of a geographical information system.

Requisites: PREREQ - KGG340 or KGG345 MEXCL - KGG485

Staff: Dr A Lucieer

Teaching Pattern: 4 hrs lectures, at least 90 hours investigation

Assessment: project proposal (20%), project report (70%), project presentation(10%)

Offered in Courses: [ S3G ]

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KGG401 - Professional Experience

Description: Provides professional training and experience in a range of geomatics disciplines and exposes students to the workplace environment. A minimum of 20 weeks of industry experience approved by the degree coordinator, supported by the submission of assessed work experience reports.

Requisites: PREREQ - Third Examination

Staff: academic staff of the Centre

Teaching Pattern: minimum of 20 weeks professional experience

Assessment: submission of satisfactory professional experience diary, and reports

Offered in Courses: [ N3H ]

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KGG405 - Land Development Planning

Description: The characteristics of urban areas and regions are presented, and challenges that typify planning for them are outlined. The historical development and current status of urban and regional planning are described for the Tasmanian and other cases. A focus of the unit is statutory planning for urban and regional areas. Therefore, an overview of statutory planning in Australia is presented, and particular emphasis is placed on understanding Tasmania's statutory regimes as these are manifest in the Resource Management and Planning System.
Considerable attention is paid to the creation, interpretation, critical analysis and comprehension of planning schemes and development applications, since these are central to much of the day-to-day business of urban and regional planning. Nonetheless, planning for these domains does not occur outside larger institutional milieux, and the last part of the unit turns to address the questions of government, governance, citizenship and power as these gain expression in various debates about sustainability, liveable communities, and urban and regional planning. The unit addresses the potential for land surveyors to incorporate land use planning principles and techniques into their professional work and focuses on a number of key planning issues that affect practicing land surveyors.

**Requisites:** COREQ - KNE405  MEXCL - KGA512

**Staff:** Dr Elaine Sratford, Mr Kerry Boden, Mr John Hepper

**Teaching Pattern:** 39 lectures, 13 tutorials, 3 days of field work.

**Assessment:** (a) essay (c.1500 words equivalent) (25%); statutory planning exercise [a planning scheme amendment and/or development application] (c. 1500 words equivalent) (25%); individual project 35% (c.2000 words equivalent); tests 15%.


**Offered in Courses:** [ N3H ]

**Unit Delivery Information:**

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**KGG407 - Land Law and Cadastral Studies**

**Description:** The Land Law component teaches the principles and application of land law as it applies to legal surveys. Examines the professional role and obligations of a cadastral surveyor; tenure, estates in land, freehold and leasehold tenure; interests in land, easements and profits, mortgages, erosion, riparian rights, land transfer, common law and real property, adverse possession, law relating to surveys of land for the purposes of title subdivision and resumption of land, general principles of the law of evidence. The Cadastral Studies component covers property, property rights, real property. Fiscal, legal cadastres. Cadastral systems, land registration systems, multi-purpose cadastre, cadastral as information systems. Methods of recording real property rights, methods of delineating and recording real property rights. Comparative cadastres.

**Requisites:** PREREQ - Third Examination  COREQ - KGG425

**Staff:** staff from the School of Law, and Dr JE Osborn

**Teaching Pattern:** 26 lectures, 26 tutorials

**Assessment:** exam (50%), essay and seminar (50%)
KGG475 - GIS Application Development

**Description:** As users become more experienced with GIS, they require more complex applications and analyses procedures. The more complex applications are usually not supported by the basic functions of a GIS but must be implemented using a scripting or programming language. This unit is designed to introduce application development in GIS with a focus on implementation of new spatial analysis algorithms. Material will be introduced through a series of lectures, tutorials and practical sessions. Students will gain experience with customising GIS using scripting and programming languages.

**Requisites:** PREREQ - KGG340 COREQ - KGG475 MEXCL - KGG380

**Staff:** Dr Arko Lucieer

**Teaching Pattern:** 13 lectures, 13 tutorials, 26hrs practicals

**Assessment:** 2-hour exam (30%), 4 assignments (70%)


**Offered in Courses:** [N3H] [N4B] [S5A]

**Unit Delivery Information:**

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KGG480 - Geographic Information Systems Project

**Description:** This unit consists of a project designed to reinforce the student's understanding of the underlying science and principles of Geographic Information Systems, gain an understanding of at least one application of GIS in detail, and provide experience in project design and implementation. The project consists of 90 hours of supervised investigation and experimental work involving the use of a geographical information system.

**Requisites:** PREREQ - KGG340 MEXCL - KGG385

**Staff:** Dr Arko Lucieer

**Teaching Pattern:** 4 hrs lectures, at least 90 hours investigation

**Assessment:** project proposal (20%), project report (70%), project presentation(10%)

**Offered in Courses:** [N3H] [N4B] [N4H] [N6Y] [S4E] [S5A]

**Unit Delivery Information:**

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KGG500/501 - Graduate Diploma in Spatial Information Science with Honours

**Description:** A one year full-time, or two-years part-time course consisting of lectures, project work and thesis as prescribed by the Degree Coordinator. The coursework component will be appropriate for the particular research topic chosen and will constitute 50% of the assessment. With the agreement of the Degree Coordinator, candidates may select units from at most one Group 2 unit (12.5%) with the remaining units selected from Group 3 and 4 units offered by the Faculty of Science, Engineering and Technology. The project work may consist of a specific set of reading programs or course work as specified by the Degree Coordinator. The thesis topics should be designed to develop the candidate's knowledge and skills in the spatial information sciences and develop analytical and problem solving skills. The thesis component of the course will constitute 50% of the assessment.

**Requisites:** PREREQ - Possession of a bachelor degree from the University of Tasmania, or an equivalent qualification from other recognised universities.

**Staff:** academic staff of the Centre

**Teaching Pattern:** project work and course work as prescribed by the Degree Coordinator

**Assessment:** project work and course work (50%), written thesis (50%)

**Offered in Courses:** [N6Y]

**KGG502 - Graduate Diploma in Spatial Information Science with Honours F/T**

**Description:** For details see KGG500/501

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**KGG503 - Graduate Diploma in Spatial Information Science with Honours P/T**

**Description:** For details see KGG500/501

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**KGG504 - Graduate Diploma in Spatial Information Science with Honours P/T**

**Description:** For details see KGG500/501

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**KGG510/515 - Geomatics (Honours)**

**Description:** A one year full-time course, or a two year part-time course, consisting of lectures, project work and thesis as prescribed by the degree coordinator. Lectures and project work will be appropriate for the particular research topic chosen and will constitute 50% of the assessment. With the agreement of the degree coordinator, candidates may select from Group 2, 3 and 4 units offered by the Faculty of Science, Engineering and Technology. Project work may consist of specific set reading programs or course work as specified by the degree coordinator. The course work and thesis topics can be selected from the following areas of specialisation:

1. **Advanced Photogrammetry** -- Selected topics from: Analytical metric and non-metric aerial and close-range systems, multi-media photogrammetry, digital photogrammetry.
2. **Advanced GIS** -- Selected topics from: environmental monitoring, application development, resource networks, visualisation, spatial data uncertainty and decision support.
3. **Advanced Geodesy** -- Selected topics from: space geodetic techniques including GPS for high precision positioning; gravimetric geodesy; satellite altimeter analysis; geophysical geodesy.
4. **Advanced Adjustment Theory** -- Selected topics from: Pre-analysis, optimisation. Least squares filtering, interpolation and collocation, generalised inverses, free network adjustments, deformation analysis.
5. **Advanced Instrumentation and Techniques** -- Selected topics from: Automation of surveying instrumentation, non-topographic application of measurement techniques, monitoring and deformation surveys, case studies.

**Requisites:** PREREQ - BGeom from the University of Tasmania or a degree from another university or tertiary institution deemed equiv by the Faculty. In each case, the candidate must have passed the degree with sufficient merit to satisfy the Faculty.

**Staff:** academic staff of the Centre

**Teaching Pattern:** project work and course work as prescribed by the degree coordinator

**Assessment:** project work and course work (50%), written thesis (50%)

**Offered in Courses:** [ N4H ]

**KGG516 - Geomatics (Honours) F/T**

**Description:** For details see KGG510/515

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**KGG517 - Geomatics (Honours) P/T**

**Description:** For details see KGG510/515

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**KGG518 - Geomatics (Honours) P/T**

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**KGG580 - Graduate Diploma Project Work**

**Special Note:** weighted at 0% for students enrolled in KGG500/501

**Description:** Is a major project determined in conjunction with the student involving the design, development or application of spatial information technology or systems components. The project is designed to: develop the candidate's knowledge and skills in the spatial information sciences; and to develop analytical and problem solving skills.

**Requisites:** PREREQ - all prescribed coursework units

**Staff:** academic staff of the Centre

**Teaching Pattern:** project work

**Assessment:** project submission (100%)

**Offered in Courses:** [ N6Y ]

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**KGG800 - Master of Applied Science, Project**

**Description:**

**Unit Delivery Information:**
KGG801 - Master of Applied Science, Project

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KGG802/03 - Master of Applied Science, Thesis

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KGG804 - Master of Applied Science, Thesis

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KGG805 - Master of Applied Science, Thesis

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KGG806 - Master of Applied Science, Thesis

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KGS506 - Surveying V (Honours) F/T

Description: Is a one year full-time course, or a two year part-time course, consisting of lectures, project work and thesis as prescribed by the degree coordinator. Lectures and project work will be appropriate for the particular research topic chosen and will constitute 50% of the assessment. With the agreement of the degree coordinator, candidates may select from Group 2, 3 and 4 units offered by the Faculty of Science, Engineering and Technology. Project work may consist of specific set reading programs or course work as specified by the degree coordinator. The course work and thesis topics can be selected from the following areas of specialisation:
1. Advanced Photogrammetry -- Selected topics from: Analytical metric and non-metric aerial and close-range systems, multi-media photogrammetry, digital photogrammetry.
2. Advanced GIS -- Selected topics from: environmental monitoring, application development, resource networks, visualisation, spatial data uncertainty and decision support.
3. Advanced Geodesy -- Selected topics from: space geodetic techniques including GPS for high precision positioning; gravimetric geodesy; satellite altimeter analysis; geophysical geodesy.
5. Advanced Instrumentation and Techniques -- Selected topics from: Automation of surveying instrumentation, non-topographic application of measurement techniques, monitoring and deformation surveys, case studies.

Requisites: PREREQ - The degree of BSurv from the University of Tasmania or a degree from another university or tertiary institution deemed to be equivalent by the Faculty. In each case, the candidate must have passed the degree with sufficient merit to satisfy the Faculty.

Staff: academic staff of the Centre

Teaching Pattern: project work and course work as prescribed by the degree coordinator

Assessment: project work and course work (50%), written thesis (50%)

Unit Delivery Information:

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KGS507 - Surveying V (Honours) P/T

Description: Is a one year full-time course, or a two year part-time course, consisting of lectures, project work and thesis as prescribed by the degree coordinator. Lectures and project work will be appropriate for the particular research topic chosen and will constitute 50% of the assessment. With the agreement of the degree coordinator, candidates may select from Group 2, 3 and 4 units offered by the Faculty of Science, Engineering and Technology. Project work may consist of specific set reading programs or course work as specified by the degree
coordinator. The course work and thesis topics can be selected from the following areas of specialisation: 1. **Advanced Photogrammetry** -- Selected topics from: Analytical metric and non-metric aerial and close-range systems, multi-media photogrammetry, digital photogrammetry. 2. **Advanced GIS** -- Selected topics from: environmental monitoring, application development, resource networks, visualisation, spatial data uncertainty and decision support. 3. **Advanced Geodesy** -- Selected topics from: space geodetic techniques including GPS for high precision positioning; gravimetric geodesy; satellite altimeter analysis; geophysical geodesy. 4. **Advanced Adjustment Theory** -- Selected topics from: Pre-analysis, optimisation. Least squares filtering, interpolation and collocation, generalised inverses, free network adjustments, deformation analysis. 5. **Advanced Instrumentation and Techniques** -- Selected topics from: Automation of surveying instrumentation, non-topographic application of measurement techniques, monitoring and deformation surveys, case studies.

**Requisites:** PREREQ - The degree of BSurv from the University of Tasmania or a degree from another university or tertiary institution deemed to be equivalent by the Faculty. In each case, the candidate must have passed the degree with sufficient merit to satisfy the Faculty.

**Staff:** academic staff of the Centre

**Teaching Pattern:** project work and course work as prescribed by the degree coordinator

**Assessment:** project work and course work (50%), written thesis (50%)

**Unit Delivery Information:**

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**KGS508 - Surveying V (Honours) P/T**

**Description:** Is a one year full-time course, or a two year part-time course, consisting of lectures, project work and thesis as prescribed by the degree coordinator. Lectures and project work will be appropriate for the particular research topic chosen and will constitute 50% of the assessment. With the agreement of the degree coordinator, candidates may select from Group 2, 3 and 4 units offered by the Faculty of Science, Engineering and Technology. Project work may consist of specific set reading programs or course work as specified by the degree coordinator. The course work and thesis topics can be selected from the following areas of specialisation: 1. **Advanced Photogrammetry** -- Selected topics from: Analytical metric and non-metric aerial and close-range systems, multi-media photogrammetry, digital photogrammetry. 2. **Advanced GIS** -- Selected topics from: environmental monitoring, application development, resource networks, visualisation, spatial data uncertainty and decision support. 3. **Advanced Geodesy** -- Selected topics from: space geodetic techniques including GPS for high precision positioning; gravimetric geodesy; satellite altimeter analysis; geophysical geodesy. 4. **Advanced Adjustment Theory** -- Selected topics from: Pre-analysis, optimisation. Least squares filtering, interpolation and collocation, generalised inverses, free network adjustments, deformation analysis. 5. **Advanced Instrumentation and Techniques** -- Selected topics from: Automation of surveying instrumentation, non-topographic application of measurement techniques, monitoring and deformation surveys, case studies.

**Requisites:** PREREQ - The degree of BSurv from the University of Tasmania or a degree from another university or tertiary institution deemed to be equivalent by the Faculty. In each case, the candidate must have passed the degree with sufficient merit to satisfy the Faculty.

**Staff:** academic staff of the Centre

**Teaching Pattern:** project work and course work as prescribed by the degree coordinator

**Assessment:** project work and course work (50%), written thesis (50%)

**Unit Delivery Information:**

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**KGS800 - Master of Spatial Information Science (F/T)**

**Description:** Unit enrolment code for the research Master of Spatial Information Science.

**Unit Delivery Information:**

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**KGS801 - Master of Spatial Information Science (P/T)**

**Description:** Unit enrolment code for the research Master of Spatial Information Science.

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**KHA050/60/70/80 - Overseas Study - Psychology**

**Description:**

**Unit Delivery Information:**

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**KHA101 - Psychology 1A**

**Special Note:** CCC students do this unit partly by video-link
Description: Provides an introduction to major areas in psychology and to basic techniques for psychological investigations. Lecture topics include the historical context of psychology, human learning, memory and cognition, brain and behaviour and social psychology. Students are required to undertake additional reading to extend their knowledge in the areas covered in the lecture program. In laboratory classes students are introduced to psychological research through demonstrations and activities in areas related to the lecture topics, such as human learning, memory and cognition, and social psychology. Students develop skills for essay and report writing: critical analysis of ideas, synthesis of ideas, referencing and presentation standards.

Attendance at the first lecture is important. Attendance at laboratory classes (on-campus students) or distance workshops (off-campus students) is compulsory.

Requisites: MEXCL - KHA100, HGP101, HWP101, HYA100

Staff: Dr N Kemp (Coordinator)

Teaching Pattern: 2x1-hr lectures, a 2-hr lab class weekly (13 wks)

Assessment: 2-hr exam in June (50%), lab workbook and 2 essays totalling 2,500 words (50%).


Offered in Courses: [ R3A ] [ R3K ] [ S3G ] [ M3H ] [ C3C ] [ S3I ] [ S3I ]

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KHA102 - Psychology 1B

Special Note: CCC students do this unit partly by video-link

Description: Provides an introduction to major areas in psychology and to basic techniques for psychological investigations. Lecture topics include intelligence and abilities, research methods in psychology, developmental and clinical psychology. Students are required to undertake additional reading to extend their knowledge in the areas covered in the lecture program. In laboratory classes students are introduced to psychological research through demonstrations and activities in areas related to the lecture topics, such as developmental psychology, intelligence and abilities and clinical psychology. Students are introduced to basic research design, data analysis and interpretation and develop skills in reporting findings from psychological research. Students require a pocket calculator with a square root key. Attendance at laboratory classes (on-campus students) or distance workshops (off-campus students) is compulsory.

Requisites: MEXCL - KHA100, HGP102, HWP102, HYA100 PREREQ - KHA101 or *HGP101 or *HWP101

Staff: Dr N Kemp (Coordinator)

Teaching Pattern: 2x1-hr lectures, a 2-hr lab class weekly (13 wks)

Assessment: 2-hr exam in Nov (50%), lab exercises and 2 essays totalling 2,500 words (50%).


Offered in Courses: [ R3A ] [ R3K ] [ S3G ] [ M3H ] [ C3C ] [ S3I ] [ S3I ]

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KHA201 - Research Methods 2

Special Note: part of the core program in Psychology and must be taken by students proceeding to a Psychology major

Description: Introduces students to further issues in experimental design, methodology and data analysis in psychological research. The lectures in data analysis develop students’ understanding of n and the application of inferential statistics to psychological research. After explaining the process of hypothesis testing and simple inferential statistics, the lectures provide an introduction to analysis of variance. The methodology lectures covers experimental design in various areas of psychological research. These present students with an overview of principles and issues in scientific method, research design, and research methodology to facilitate planning of independent research and to develop critical evaluation of published research and the validity of research findings.

The laboratory component of the unit covers the application and interpretation of inferential statistics in psychology and methodological issues in psychological research.

Requisites: PREREQ - KHA102 only, for students in M3H, ( KHA101 and KHA102) or * KHA100 MEXCL - KHA200, KHA250, KHA220, KHA230

Staff: Mr JRM Alexander(Coordinator), Dr J Shakespeare-Finch, Dr W Slaghuis

Teaching Pattern: 2x1-hr lectures, 1x2-hr lab class weekly (13 wks)

Assessment: 2-hr exam in June (60%), weekly exercises, assignments totalling 2500 words and test (40%).


Offered in Courses: [ R3A ] [ R3K ] [ M3H ] [ S3G ] [ C3C ] [ S3I ] [ S3I ]

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KHA202/302 - Lifespan Developmental Psychology

Special Note: part of the accredited program in Psychology and must be taken by students proceeding to Honours in Psychology.

Description: Provides coverage of human development over the lifespan (infancy to old age) including cognitive and social-emotional domains of development. The major periods of development are examined, including infancy, childhood (early, middle and late), adolescence and adulthood (young, middle and late), emphasising predominant developmental aspects for different periods of development. In the laboratory component, students engage in empirical investigation intended to deepen and extend their understanding of development and the changes in functioning and behaviour it entails. Investigations address discrete aspects of human development and a range of developmental periods, and include student participation and training in data collection.

Requisites: PREREQ - (KHA101 and KHA102) or *KHA100 MEXCL - KHA200, KHA220, KHA230

Staff: Dr R Burton Smith (Coordinator), Mr JRM Alexander, Dr T Thompson

Teaching Pattern: 2x1-hr lectures, 1x2-hr lab class weekly (13 wks)

Assessment: 2-hr exam in Nov (50%), lab reports totalling 2,500 words (50%)


Offered in Courses: [R3A] [R3K] [M3H] [S3G] [C3C] [S31] [S31]

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KHA205/305 - Clinical Psychology

Special Note: This unit is part of the accredited program in Psychology and must be taken by students proceeding to Honours in Psychology.

Description: Introduces a range of topics and issues in clinical psychology and psychopathology. Areas covered include disorders, such as anxiety and mood disorders, suicidal behaviours, post-traumatic stress disorder, occupational stress, personality disorders, eating disorders, impulse control disorders and sexual deviance. A lifespan approach to clinical psychology is considered. Consideration is given to a range of therapeutic strategies employed by the clinical psychologist in the treatment of disordered behaviour. Students develop interviewing and counselling skills through participation in laboratory class exercises and elementary techniques for the management of specific psychological disorders are also introduced.

Requisites: PREREQ - (KHA101 and KHA102) or *KHA100 COREQ - KHA201 or KHA350 MEXCL - KHA200, KHA202, KHA220, KHA230, KHA254/354

Staff: Dr J Haines (Coordinator), Assoc Prof C Skilbeck, Dr M Scarca

Teaching Pattern: 2x1-hr lectures, 2-hr lab class weekly (13 wks)

Assessment: 2-hr exam in June (50%), lab test (40%), skills assessment (10%)

Required Texts: Davison GC & Neale JM, Abnormal Psychology, ISBN 0471318116

Offered in Courses: [R3A] [R3K] [S3G] [S31]

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KHA207/307 - Social Psychology

Special Note: This is an elective unit, which may be studied at the 200 level or 300 level.

Description: The lectures examine aspects of overt social behaviour, such as two-person encounters, behaviour in small and large groups, and intergroup relations. Research in social cognition, which studies people's perceptions and interpretations of the social world, will also be presented. Lecture topics include: attribution theory, decision making and social dilemmas, social aspects of emotion, the development and measurement of attitudes, aggression and pro-social behaviour and prejudice. Practicals provide experience in social psychological research, placing an emphasis on the areas covered in the lectures.

Requisites: - Some requisites may differ unit to unit.

KHA207: PREREQ - KHA102 only, for students in M3H, (KHA101 and KHA102) or *KHA100 or (*HGP101 and *HGP102) COREQ - KHA201 MEXCL - KHA200, KHA228/328, KHA210, KHA301, KHA310, KHA313, KHB207, KHB307

KHA307: PREREQ - (KHA101 and KHA102) or *KHA100 or (*HGP101 and *HGP102) COREQ - KHA201 MEXCL - KHA200, KHA228/328, KHA210, KHA301, KHA310, KHA313, KHB207, KHB307

Staff: Mr PJ Tranent

Teaching Pattern: 2x1-hr lectures, 2-hr lab class weekly (13 wks)

Assessment: 2-hr exam in June (50%), assignments totalling 2,500 words (50%)


Offered in Courses: [R3A] [R3K] [C3C] [S3G] [S31]

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**KHA209/309 - Health & Rehabilitation Psychology (Unit not offered in 2006)**

**Special Note:** This is an elective unit, which may be studied at the 200 level or 300 level by students who have completed or are enrolled in the 200 level core units.

**Description:** Students are introduced to basic concepts and theoretical ideas in health psychology, and the contribution of psychology to understanding health and well-being is examined. A framework for understanding health-related behaviours such as disordered eating and substance abuse is also provided. Lectures in rehabilitation psychology examine issues related to vocational, medical, psychiatric and criminal rehabilitation.

In the laboratory component students are introduced to measurement in health psychology, illness as an experience, body image, abnormal appetites and addictions, lifestyle change and the effects of bodily conditions on mental functioning.

**Requisites:** PREREQ - (KHA101 and KHA102) or *KHA100 or (*HGP101 and *HGP102) COREQ - KHA201 MEXCL - KHA254/354, KHA216, KHA316, KHA210, KHA310

**Staff:** Dr R Burton Smith (Coordinator), Dr J Haines

**Teaching Pattern:** 2x1-hr lectures, 2-hr lab class weekly (13 wks)

**Assessment:** 2-hr exam in Nov (50%), assignments totalling 2,500 words (50%); satisfactory performance in the lab component is required for a full pass

**Required Texts:** Rice PL, *Health Psychology*, ISBN 0534339158

**Offered in Courses:** [ R3A ] [ R3K ] [ S3G ] [ S3I ]

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**KHA212/312 - Peace, Conflict & Law (Unit not offered in 2006)**

**Special Note:** This is an elective unit, which may be studied at the 200 level or 300 level by students who have completed or are enrolled in the 200 level core units.

**Description:** Introduces topics in peace psychology, conflict resolution and the psychology of law. The psychology of peace and conflict is examined from an inter-group and global perspective and from an interpersonal and individual perspective, and includes topics such as models of conflict and conflict resolution, individual and environmental determinants of violence, and peace psychology. Psychology and law lecture topics include forensic psychology, suspects, jurors, witnesses and the trial process, juvenile justice issues, young repeat offender behaviour, and the care of young offenders on remand.

In the laboratory component students are introduced to research in juror and eye-witness behaviour and conduct an investigation in a related area. Students also participate in workshops on conflict resolution skills.

**Requisites:** PREREQ - (KHA101 and KHA102) or *KHA100 or (*HGP101 and *HGP102) COREQ - KHA201 MEXCL - KHA212/312

**Staff:** Mr PJ Ball (Coordinator), Dr JA Davidson

**Teaching Pattern:** 2x1-hr lectures, 2-hr lab class weekly (13 wks)

**Assessment:** 2-hr exam in June (50%), assignments totalling 2,500 words (50%); satisfactory performance in the lab component is required for a full pass


**Offered in Courses:** [ R3A ] [ R3K ] [ S3G ] [ S3I ]

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**KHA214/314 - Learning & Skilled Performance**

**Special Note:** Level 200 or 300 elective unit which may be taken as part of psychology major

**Description:** Examines the processes underlying skill acquisition and human performance. Skilled performance across many tasks involves the coordinated processes of perception, cognition and action. Of particular interest are the substantial changes in these processes that occur as people gain experience in a task or domain. In this unit the primary focus will be on the acquisition of perceptual-motor skills. The development of motor expertise is addressed from four perspectives: the information processing approach, the individual differences or abilities approach, the expert-novice approach and the ecological or action systems approach. The laboratory component involves empirical investigation of topics covered in the lectures. Specific topics will include decision processing, practice conditions, bimanual coordination, and the perception of affordances.

**Requisites:** PREREQ - (KHA101 and KHA102) or *KHA100 or (*HGP101 and *HGP102) COREQ - KHA201 MEXCL - KHA212/312

**Staff:** Prof JJ Summers (Coordinator)

**Teaching Pattern:** 2x1-hr lecture and 2-hr lab class weekly (13 wks)

**Assessment:** 2-hr exam in June (50%), assignments totalling 2,500 words (50%)

**Offered in Courses:** [ R3A ] [ R3K ] [ S3G ] [ S3I ]

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**KHA215/315 - Organisational Psychology (Unit not offered in 2006)**

**Special Note:** This is an elective unit, which may be studied at the 200 level or 300 level.

**Description:** Provides a broad overview of psychological theory and practice as it applies to human behaviour in the workplace. The lecture sequence introduces three main fields of organisation psychology: personnel psychology, workplace psychology and human factors, as well as the key concepts and methodologies within each field. The practical component of the course examines a number of key aspects of work through the use of case studies, class and group discussions and problem-based learning activities.

**Requisites:** - Some requisites may differ unit to unit.

KHA215: COREQ - KHA201 MEXCL - KHB215/315 PREREQ - KHA102 only for students enrolled in M3H (KHA101 and KHA102) or

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University of Tasmania, Unit Guide 2006 www.utas.edu.au/units/ 622
KHA217/317 - States of Consciousness (Unit not offered in 2006)

Special Note: This is an elective unit, which may be studied at the 200 level or 300 level, by students who have completed or are enrolled in the 200 level core units.

Description: Introduces topics in sleep and dreaming, drugs and alcohol. Lecture topics will provide a background to the psychophysiology of sleep, including the measurement and physiology of sleep, the functions of sleep, and an introduction to sleep disorders. Cognitive and physiological theories of dreaming are developed as well as consideration of particular types of dreams such as nightmares, impactful dreams and lucid dreams. The unit also covers the physiological and cognitive effects of various drugs and alcohol on the brain. In the laboratory component of the unit students develop techniques for dream recall and recording, and participate in two experiments.

Requisites: PREREQ - (KHA101 and KHA102) or *KHA100 COREQ - KHA201 MEXCL - KHA212, KHA312, KHA210/310, KHA217, KHA317

Staff: Dr JA Davidson (Coordinator), Dr F Martin

Teaching Pattern: 2x1-hr lectures, a 2-hr lab class weekly (13 weeks)

Assessment: 2-hr exam in Nov (50%), assignments totalling 2,500 words (50%); satisfactory performance in the lab component is required for a full pass


Recommended Texts: Hartmann E, Dreams and Nightmares, ISBN 0306459965

Offered in Courses: [ R3A ] [ R3K ] [ S3G ] [ S3I ]

KHA219/319 - Educational Psychology (Unit not offered in 2006)

Special Note: Level 200 or 300 elective unit which may be taken as part of psychology major

Description: Comprises two lecture streams focusing on specific issues in educational psychology. The first stream focuses on a range of failure-avoidant strategies. These are strategies designed to protect self-worth in the event of poor performance. These include defensively pessimistic expectations, intentional self-handicapping, procrastination, perfectionism and impostor fears. The development and maintenance of these behaviours is discussed as well as strategies to reduce them. The second lecture stream examines applied issues in educational psychology including attention deficit disorder, self-esteem and learning difficulties, behaviour management and control. The laboratory component focuses on research issues in educational psychology.

Requisites: PREREQ - (KHA101 and KHA102) or *KHA100 COREQ - KHA301 or KHA201 MEXCL - KHA315, KHA327, KHA347

Staff: Dr T Thompson (Coordinator)

Teaching Pattern: 2 x 1hr lectures and 2-hr lab class weekly (13 wks)

Assessment: 2-hr exam in Nov (50%), assignments totalling 2,500 words (50%)

Required Texts: Reader available for purchase

Offered in Courses: [ R3A ] [ R3K ] [ S3G ] [ S3I ]

KHA224/324 - Sensation & Perception

Special Note: Level 200 or 300 elective unit which may be taken as part of psychology major

Description: Lectures provide an introduction to the structure, functioning and development of the visual system. The effect of a developmental difference, or an impairment to the visual system, on visual perception is examined in a number of conditions such as recovery from blindness, synesthesia, migraine, visual agnosia, developmental dyslexia, and schizophrenia. These conditions provide the student with an appreciation of the complexity and effortless brilliance of the processes that make visual perception possible. Laboratory sessions provide demonstrations of visual phenomena and psychophysical methods. Two experiments are conducted that investigate the visual perception of colour, form or motion processing and examine the process of testing theory using experimental methods.

Requisites: PREREQ - (KHA101 and KHA102) or *KHA100 COREQ - KHA201 MEXCL - KHA200, KHA250, KHA220, KHA230

Staff: Dr WL Slaghuis (Coordinator)

Teaching Pattern: 2-hr lecture and 2-hr lab class weekly (13 wks)

Assessment: 2-hr exam in November (50%), lab reports totalling 2,500 words (50%)


Offered in Courses: [ R3A ] [ R3K ] [ S3G ] [ S3I ]

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KHA228/328 - Cognitive Social Psychology (Unit not offered in 2006)

Description: Introduces central theoretical and methodological concepts in social psychology, adopting a perspective on the person as an
KHA231/331 - Psychology of Language

**Description:** In this unit, students are introduced to the most important and hotly debated issues in the psychology of language. Lecture topics include the distinctive features of human language as a communicative system, theories of language acquisition and development, the comprehension and production of language (both successful and disordered), reading and spelling development, and some sociocultural factors that can influence language use. In the laboratory component, student engage in exercises linked to the lectures, and gather data for writing an assignment, which involves empirical investigation of the way that adults conceptualise the structure of written English.

**Staff:** Dr N Kemp

**Teaching Pattern:** Two 1-hr lectures, one 2-hr practical class weekly (13 weeks)

**Assessment:** One 2-hr exam (50%) and one 2500-3000-word report (50%)

**Required Texts:** A book of readings will be available for purchase

**Offered in Courses:** [R3A] [R3K] [S3G] [S3I] [S3I]

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KHA255/355 - Clinical and Counselling Psychology (Unit not offered in 2006)

**Description:** This unit consists of two related streams: Abnormal/Clinical Psychology and Counselling Psychology. The Abnormal/Clinical stream will introduce students to a range of topics in the area of mental health and mental disorders. Topics covered include abnormal psychological conditions, diagnostic considerations and an introduction to treatment options. The practical programme for this stream includes an examination of case studies of abnormal human behaviour. The Counselling stream of this unit will cover fundamental aspects of interpersonal skills required to underpin an understanding of therapeutic intervention. Aspects covered include principles of communication - verbal and non-verbal communication and active listening. This stream will also require students to explore perceptions of themselves and others within the context of building therapeutic relationships, self-disclosure, reflective practices and the receipt of feedback and evaluation. Three counselling paradigms will be introduced: psychodynamic, cognitive-behavioural and narrative approaches. In practical sessions students will apply the skills that have been introduced in the lectures.

**Staff:** Dr M Summers (Coordinator), Dr J Shakespeare-Finch

**Teaching Pattern:** 2 hours of lectures per week, and 2 hours of practicals per week

**Assessment:** 3-hour examination (50%), skill-based assessment (audio tape) and 1,000 word written report (25%) and 1,500 word essay (25%)


**Offered in Courses:** [S3G] [R3A] [R3K] [C3C] [S6D] [S3I]

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KHA256/356 - Applied Topics in Psychology

**Description:** Introduces specialist topics in psychology and explores the theoretical bases of these topics and related ethical and professional issues. Laboratory classes will complement and extend the areas covered in the lectures and introduce students to the practical issues involved in these areas. Topics covered will vary from year to year depending on staff availability and expertise. Among the topics envisaged are sport psychology, educational psychology, rehabilitation psychology, human factors and aviation psychology. With approval, students may undertake relevant and suitable units from other disciplines and have that participation counted as part of this unit.

**Staff:** Dr G Hannan (Coordinator)

**Teaching Pattern:** 2x1-hr lectures, a 2-hr lab class weekly (13 weeks)

**Assessment:** 2-hr exam in Nov (50%), assignments totalling 2,500 words (50%); satisfactory performance in the lab component is required for a full pass

**Required Texts:** tba

**Offered in Courses:** [R3A] [R3K] [S3G] [C3C] [S3I]

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**KHA257/357 - Community & Environmental Psychology**

**Description:** The first part of the unit focuses on community psychology, its history, the contexts within which it can be applied, and the methods used to study it. Community psychology is examined from developmental, ecological, community diversity, sense of community, coping, and social support perspectives. This provides a foundation for the development of community change and action programs addressing issues such as community empowerment and citizen participation, social change, community mental health, managing disasters and crises, and community resilience.

The second part covers environmental psychology. It addresses how an understanding of environmental cognition and perception provides a foundation for understanding human environment interaction, environmental stress, and the perception of the built and urban environments (including issues relating to the workplace, residential settings, institutional settings, and leisure and tourism).

In the laboratory component students explore the application of community and environmental psychology principles outlined in lectures within Tasmania and Australia. Case study, reviews of current research, and practical assignments are used to examine how community and environmental psychology can be applied to issues such as managing salinity and water use, managing natural hazard (eg, bushfire, flood) risk, and promoting citizen participation within the community. The laboratory component explores how community psychology and environmental psychology can be integrated to deal with local and national issues.

**Requisites:** PREREQ - (KHA101 and KHA102) or *KHA100 or (*HGP101 and *HGP102) COREQ - KHA201

**Staff:** Assoc Prof D Paton (Coordinator)

**Teaching Pattern:** 2x1-hr lectures, a 2-hr practicals weekly (13 weeks)

**Assessment:** 2-hr exam (50%), lab reports totalling 2,500 words (50%); satisfactory performance in the lab component is required for a full pass.

**Required Texts:** Duffy KG & Wong FY, *Community Psychology*, Boston, Allyn & Bacon, 2003 ISBN 0205350267


**Offered in Courses:** [S3G] [R3A] [S3T] [S3I]

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**KHA259/359 - Health Psychology (Unit not offered in 2006)**

**Description:** This unit consists of two sequential streams: Health Psychology and Stress and Coping. The first part of the unit will focus on health psychology, its origins and history, the contexts within which it can be applied, and the methods used to study it. Health Psychology will be examined within the BioPsychoSocialEcological model. Issues relating to psychological aspects of illness causation and interpretation, health promotion, prevention and the maintenance of primary prevention, pain and the psychological issues associated with chronic illness. The developmental issues associated with these factors will also be discussed. The second part of the unit will cover major sources of stress such as frustration, conflict, change, pressure and trauma and will elucidate differences between chronic stress, acute stress and posttraumatic stress. Various models of stress will be examined as well as the physical, emotional and behavioural responses individuals may display. Factors that potentially moderate stress reactions will be covered, such as personality dimensions and more so, coping strategies, including social support. Both maladaptive and adaptive coping will be considered and the application of stress and coping theories will be discussed within the context of individuals, families and organisations. In the laboratory component students will explore the application of health psychology principles to individual and community health care and health promotion contexts. Case study, reviews of current research, and practical assignments will be used to examine these issues and illustrate how health psychology can be used to understand and manage. Stress and coping assessment tools will also be introduced and sampled enhancing the practical element of this unit.

**Requisites:** - Some requisites may differ unit to unit.

KHA259: PREREQ - KHA101 and KHA102 or KHA100 COREQ - KHA201 MEXCL - KHA254 or KHA354, KHA209 or KHA309, KHA213 or KHA313, KHB209 or KHB309

KHA359: PREREQ - KHA102 only, for students in M3H, KHA101 and KHA102 or KHA100 all other courses COREQ - KHA201 MEXCL - KHA254 or KHA354, KHA209 or KHA309, KHA213 or KHA313, KHB209 or KHB309

Staff: Dr J Shakespeare-Finch (Coordinator), Prof D Paton

**Teaching Pattern:** 2 hours of lectures per week, and two hours of practicals per week

**Assessment:** 2-hr final examination (50%) and assignments totalling 2,500 words (50%)

**Required Texts:** tba

**Offered in Courses:** [S3G] [R3A] [R3K] [C3C] [S3I] [S3I]

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**KHA262/362 - Development Through the Lifespan**

**Description:** The unit provides approaches human development from a lifespan perspective (infancy to old age). The lecture sequence focuses on cognitive development and social-emotional development. These aspects of development are examined in each of the major periods of development: infancy, childhood (early, middle and late), adolescence and adulthood. The lab classes focus on the development of skills associated with developmental psychology: accurate observation strategies, interviewing (especially the clinical research interview), and empirical investigation strategies with children in the cognitive and social development fields. Students will also address theoretical issues in developmental psychology in a short series of class debates.

**Requisites:** - Some requisites may differ unit to unit.

KHA262: PREREQ - KHA102 only, for students in M3H, KHA101 & KHA102 (or KHA100 or HGP101 & HGP102) COREQ - KHA201
KHA303 - Human Neuroscience

Description: This unit provides an advanced coverage of the area of human and cognitive neuroscience. Human neuroscience investigates cognitive concepts and studies mind/brain matters utilising psychophysical and brain imaging techniques. Neuroscience lectures extend and enlarge upon introductory lectures on the biological bases of behaviour in humans. Consideration will be given to the physiological, psychophysiological and cognitive bases of models of human cognitive processing, such as perception, attention, motor control, learning and memory, and language. The lectures will balance cognitive theory with neuropsychological and neuroscientific evidence. Practical work involves hands-on laboratory demonstrations and exercises in some of the topics covered in the lectures.

Requisites: PREREQ - KHA201 or *KHA200 or *KHA250 or (*KHA220 and *KHA230) COREQ - KHA350 MEXCL - KHA323, KHA343, KHA321, KHA341, KHA304

Staff: Dr F Martin (Coordinator)

Teaching Pattern: 2 hr lecture weekly, 2-hr practical class weekly.

Assessment: 2-hr examination (50%), lab reports totalling 2,500 words (50%).


Offered in Courses: [ S3G ] [ R3A ] [ R3K ] [ S3I ] [ S3I ] [ S6D ]

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KHA306 - Cognition and Memory

Special Note: This unit is part of the accredited program in Psychology and must be taken by students proceeding to Honours in Psychology

Description: Introduces the study of issues related to cognition and, in particular, attention, pattern recognition, language and reading. The concept of memory will be introduced and structures and processes underlying memory will be examined, focussing on neuropsychological and psychophysiological examples of intact and damaged memory systems.

In laboratory classes students will work in groups to design and conduct experiments investigating aspects of cognition and memory.

Requisites: PREREQ - KHA201 or *KHA250 or *KHA200 COREQ - KHA350 MEXCL - KHA300, KHA322, KHA342

Staff: Dr F Martin (Coordinator)

Teaching Pattern: 2x1-hr lectures, 2-hr lab class weekly (13 wks)

Assessment: 2-hr exam in Nov (50%), research reports totalling 3,000 words (50%)
research in specific areas is also presented.

Requisites: PREREQ - KHA201 (or KHA200 or KHA250) COREQ - KHA301 MEXCL - KHA352, KHA318, KHA301

Staff: Dr R Burton Smith (Coordinator), Mr J Alexander

Teaching Pattern: 2 hr lecture weekly, 2-hr practical weekly

Assessment: 2-hr examination (50%), assignments totalling 3,000 words (50%).


Offered in Courses: [ S3G ] [ R3A ] [ R3K ] [ M3H ] [ C3C ] [ S6D ] [ S3I ]

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KHA332 - Research Project in Psychology

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KHA350 - Research Methods 3

Description: Research methods lectures extend studies in experimental design and analysis to the use of analysis of variance, planned and post hoc comparisons, analysis of interactions, and repeated measures designs. Students are also introduced to regression and trend analysis, two factor non-orthogonal designs, three factor, multivariate and repeated measures analysis of variance, analysis of covariance and introduction to qualitative analysis. In laboratory classes students further develop skills in the design of experiments, data analysis and interpretation, and the use of statistical packages for analysis of variance, and presentation of results in a written form.

Requisites: PREREQ - KHA201 (or KHA200 or KHA250) MEXCL - KHA301, KHA351, KHA308, KHA340

Staff: Dr J Davidson (Hobart); Dr G Hannan (Launceston)

Teaching Pattern: 2 hr lecture weekly, 2-hr practical class weekly (13 weeks)

Assessment: 2-hr examination (60%), weekly data analysis exercises and assignments totalling 2,000 words (40%).


Offered in Courses: [ S3G ] [ R3A ] [ R3K ] [ M3H ] [ C3C ] [ S6D ] [ S3I ]

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KHA352 - Assessment & Individual Differences

Special Note: this unit is part of the accredited program in Psychology and must be taken by students proceeding to Honours in Psychology.

Description: Provides an advanced coverage of two core areas: individual differences in intelligence and personality, and the assessment of these characteristics and other psychological characteristics such as cognitive style and anxiety. Lectures in psychological assessment focus on the assessment of adults and provide an overview of the range of assessment approaches, to promote an understanding of fundamental concepts in assessment and a critical awareness of issues pertaining to the use of assessment data. Lectures in individual differences consider key issues in intelligence and aptitude as well as an exploration of the relationship between personality, cognitive/learning style and intelligence. In laboratory classes students critically examine issues in assessment, as well as looking at the uses and limitations of assessment data. Students gain hands-on experience of assessment approaches and the measurement of human abilities and personality.

Requisites: PREREQ - KHA201 or *KHA200 or *KHA250 MEXCL - KHA301, KHA300, KHA340, KHA318

Staff: Dr G Hannan (Coordinator), Dr M Summers

Teaching Pattern: 2x1-hr lectures and 2-hr lab class weekly (13 wks)

Assessment: 2-hr exam in Nov (50%), assignments totalling 3,000 words (50%)


Offered in Courses: [ R3A ] [ R3K ] [ C3C ] [ S3G ] [ S3I ] [ S6D ]

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KHA353 - Cognitive Psychology

Special Note: this unit is part of the accredited program in Psychology and must be taken by students proceeding to Honours in Psychology.

Description: Provides an advanced coverage of issues in memory, attention, decision-making and problem-solving, as well as advanced issues in cognition such as creativity. Laboratory exercises and demonstrations illustrate and develop significant concepts introduced in the lectures, and students work in groups to design and conduct their own experiment investigating a relevant aspect of learning, memory or cognition.

Requisites: PREREQ - KHA201 or * KHA200 or * KHA250 COREQ - KHA350 MEXCL - KHA306, KHA300

Staff: Dr M Summers (Coordinator), Mr P Tranent

Teaching Pattern: 2x1-hr lectures and 2-hr lab class weekly (13 wks)

Assessment: 2-hr exam in June (50%), lab reports totalling 3,000 words (50%)
KHA358 - Behavioural Neuroscience and Neuropsychology

Description: This unit provides an advanced coverage of two core areas: behavioural neuroscience and neuropsychology. Lectures in behavioural neuroscience extend and enlarge upon introductory lectures on the biological basis of behaviour in humans. Lectures in neuropsychology will cover the major neuropsychological disorders and syndromes and encourage students to make associations between neuroscience and functional consequences of brain damage. Practical classes provide hands-on demonstrations and exercises of some of the topics covered in the lectures.

Requisites: PREREQ - KHA201 COREQ - KHA301 MEXCL - KHA303, KHA351

Staff: Dr M Summers

Teaching Pattern: 2 hours of lectures per week, and 2 hours of practicals per week

Assessment: 2-hour examination (50%) and assignments totalling 3,000 words (50%)

KHA402 - Psychology 4 (Honours)

Special Note: Psychology 4 (Honours) is a one year, full-time course of study. A student unable to undertake full-time study may be allowed to enrol part time over two years. However, students first require both permission from the School of Psychology and approval from the Faculty of Arts to enrol in part-time study. (Part-time enrolment code is KHA415/KHA416).

Description: These codes are for BA(Hons) students. The psychology honours program provides training in research (including a supervised research project), advanced theory and introductory professional training. The components consist of a thesis (research project) (50%) and four 12.5% coursework units:

- KHA451 Research Design & Ethics,
- KHA452 Theoretical Issues,
- KHA453 Assessment, Professional Roles & Ethics,
- KHA454 Advanced Topics in Psychology,
- KHA455 Research Project,

and attendance at research seminars.

Students taking the honours course over two years should consult the unit coordinator about which components to take in which year. For full details of this unit, see the information booklet entitled Fourth Year Studies in 2005 available from the School.

Requirements for entry to Psychology Honours in 2005 are a major in Psychology with at least 150% in that discipline, including KHA308 and other Honours prerequisites. Applicants must meet all graduation requirements, and students should have obtained a minimum GPA of 7.0 (half way between a credit and a distinction) for Psychology units at 200 and 300 level. Students who fail to meet these prerequisites may apply for special consideration from the School, if they meet the Faculty of Arts' prerequisites for Honours. The number of places in Psychology 4 is limited by the availability of laboratory facilities and other resources, and admission to the program will be based on academic merit.

Requisites: PREREQ - Psychology major, containing at least 150% in the discipline, including KHA305, KHA306 and KHA308 or KHA340 or KHA311, and satisfaction of the Faculty GPA

Staff: Mr Dr F Martin (Hobart), Dr G Hannan (Launceston)

Offered in Courses: [ R4A ]
and attendance at research seminars.

Students taking the honours course over two years should consult the unit coordinator about which components to take in which year. For full details of this unit, see the information booklet entitled Fourth Year Studies in 2006 available from the School.

Requirements for entry to Psychology Honours in 2006 are a major in Psychology with at least 150% in that discipline, including all Honours prerequisite units. Applicants must meet all graduation requirements, and students should have obtained a minimum GPA of 7.0 (half way between a credit and a distinction) for Psychology units at 200 and 300 level. Students who fail to meet these prerequisites may apply for special consideration from the School, if they meet the Faculty of Arts’ prerequisites for Honours. The number of places in Psychology 4 is limited by the availability of laboratory facilities and other resources, and admission to the program will be based on academic merit.

Requisites: PREREQ - Psychology major, containing at least 150% in the discipline, including KHA305, KHA306 and KHA308 or KHA340 or KHA311, and satisfaction of the Faculty GPA
Staff: Dr F Martin (Coordinator - Hobart), Dr G Hannan (Coordinator - Launceston)

Offered in Courses: [ SAE ]

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KHA451 - Research Design & Ethics

Description: Provides a familiarity with a number of more advanced research methods which have application in research and applied settings. It develops an understanding of the purpose and assumptions underlying various statistical methods and the ability to determine which method is appropriate to answering a particular research question. Students investigate simple and multiple regression, discriminant analysis, multivariate analysis of variance, profile analysis, factor analysis, and structural equation modelling. Consideration is given to the ethics involved in conducting and reporting research. Ethical issues are discussed and the code of research practice examined.

Requisites: PREREQ - KHA308
Staff: Dr J Davidson (Coordinator)

Teaching Pattern: 3-hr seminar/workshop weekly (13 wks)
Assessment: 2-hr exam in June (50%), 1,500-word assignment (30%), weekly exercises (20%)


Offered in Courses: [ R4A ] [ S4E ] [ S3I ]

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KHA452 - Theoretical Controversies in Psychology

Description: Theoretical controversies in Psychology are considered and debated in this unit, enabling students to develop a knowledge of key theoretical problems in psychology. Students relate these problems to theory and empirical research, and develop debating skills within the discipline of psychology. Examples of topics include: the scientist-practitioner model in psychology; whether human behaviour is determined by personality or by situation; classification and diagnosis in mental health, normality and abnormality.

Staff: Dr WL Slaghuis (Coordinator)

Teaching Pattern: 3-hr lectures and seminar/workshop weekly (13 wks)
Assessment: 2-hr exam in June (50%), 2,000-word essay (40%), seminar presentation (10%)

Hyland M, Introduction to Theoretical Psychology, McMillan, Hong Kong, 1981

Offered in Courses: [ R4A ] [ S4E ] [ S3I ] [ S3I ]

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KHA453 - Assessment, Professional Roles & Ethics

Description: Extends students' theoretical understanding of assessment issues, assessment practice and reporting, and develops an awareness of ethical issues and the role of the professional of psychologist. The major aims of this unit are to extend students' theoretical understanding of assessment issues and practice by providing supervised experience in administration and interpretation of individual IQ tests used by practising psychologists. Report writing skills are developed and self evaluation in the tester role is encouraged. At the end of this course students will have a solid understanding of the issues involved in test selection, administration and reporting across the full age range, and will have a solid working knowledge of the administration of a small range of tests. Key ethical issues in professional practice, and in working with special client groups, are discussed and debated and familiarity with the Code of Professional Conduct and relevant registration legislation are developed.

Staff: Assoc Prof C Skilbeck (Coordinator)

Teaching Pattern: 3-hr seminar/workshop weekly (13 wks)
Assessment: reports totalling 3,000 words (50%), 1,500-word essay (30%), test administration (20%)

Australian Psychological Society, Code of Professional Conduct, APS, Melb, 1994

Offered in Courses: [ R4A ] [ S4E ] [ S3I ]
KHA453 - Advanced Topics in Psychology

**Description:** Students develop an advanced knowledge of two particular areas of psychology, relate issues to theory and empirical research, critically evaluate an advanced level topic and develop presentation skills. Students study two core or applied topics offered by the School of Psychology, or a relevant and equivalent unit from another discipline. The nature and number of advanced level topics offered each year is limited by the availability of staff, but may include topics in areas such as Positive Psychology of Self, Reading, Human Factors and Evolutionary Psychology.

**Staff:** Dr F Martin (Coordinator)

**Teaching Pattern:** 3-hr seminar/workshop weekly (13 wks)

**Assessment:** 2x1,500-word essays (60%), 2 seminar presentations (40%)

**Required Texts:** tba

**Offered in Courses:** [ R4A ] [ S4E ] [ S3I ]

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KHA454 - Research Project

**Description:** Involves developing, conducting and reporting a substantial independent empirical study of a psychological nature. Under the guidance of their supervisor, students research the literature, develop the research question, design the study and prepare a written research proposal for presentation to a seminar of staff and students. Students obtain ethical approval for the project; conduct the independent study; analyse and report the results of the research to a seminar audience, and present the results of study in the form of a 10,000-word thesis which includes a substantial literature review. Data analysis workshops provide an opportunity to discuss methodological and interpretational issues relating to analysing and drawing conclusions from the data collected. Students are also expected to attend School research colloquia.

**Staff:** Mr Dr F Martin (Hobart), Dr G Hannan (Launceston)

**Teaching Pattern:** research colloquia in sem 1 & 2; 7x2-hr data analysis workshops in sem 2

**Assessment:** research proposal (5%), 10,000-word research thesis (95%)

**Offered in Courses:** [ R4A ] [ S4E ] [ S3I ] [ S3I ]

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KHA455 - Graduate Diploma in Rehabilitation Counselling

**Description:** An umbrella unit code for the Graduate Diploma in Rehabilitation Counselling. Students are required to complete the following eight units:

1. Rehabilitation Counselling 1
2. Rehabilitation Counselling 2
3. Research Project 1
4. Research Project 2
5. Rehabilitation Theory and Practice
6. Vocational and Legal Rehabilitation
7. Topics in Rehabilitation
8. Rehabilitation in Medical Settings

This course of study is accredited by the Australian Society of Rehabilitation Counsellors (ASORC).

Intending students should note that the Graduate Diploma in Rehabilitation Counselling is not an accredited fourth year program in psychology and graduates will not be eligible for registration as a psychologist.

**Requisites:** PREREQ - Psychology major with at least 150% in the discipline; applicants should meet Faculty of Arts admission requirements and prerequisites for Honours (GPA of 6.0 or better at 200/300 level). Consideration is given to applicants with a single major in psychology and relevant work experience or a bachelor degree in an affiliated area and relevant work experience.

**Staff:** Dr J Haines

**Offered in Courses:** [ S6R ]

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KHA501 - Rehabilitation Counselling 1

**Description:** Examines styles of counselling with integration of theories of counselling with its practice. This unit teaches both basic skills in counselling and more advanced skills necessary in more complex counselling situations. Coverage also will be given to the development
of counselling skills related to specific rehabilitation areas with appropriate goal setting for specific rehabilitation needs. The unit emphasis is on skill acquisition and students are required to demonstrate that they have acquired both basic and advanced counselling skills. Students also are required to demonstrate the ability to apply the counselling skills in a variety of simulated counselling situations.

**Teaching Pattern:** 2 x 2-hr seminars weekly (13 weeks)

**Assessment:** 2-hr exam in June (50%), seminar presentation (10%), skills assessment (40%)

**Recommended Texts:** Palmer, Dainow & Milner, *Counselling: The Bac Counselling Reader*, Sage, Lond, 1996

**Offered in Courses:** [ S6R ]

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#### KHA502 - Rehabilitation Counselling 2

**Description:** Covers the skills needed for the various components of the counselling process. Introduces counselling skills relevant to specific work situations such as trauma debriefing, conflict resolution, and brief intervention counselling. The unit emphasis is on skill acquisition and students are required to demonstrate their skills in relation to specific counselling situations. Basic therapeutic techniques such as a range of stress management procedures will be taught and students will practice their administration.

**Requisites:** PREREQ - KHA501

**Teaching Pattern:** 2 x 2-hr seminars weekly (13 weeks)

**Assessment:** 2-hr exam in Nov (50%), seminar presentation (10%), skills assessment (40%)

**Recommended Texts:** Palmer, Dainow & Milner, *Counselling: The Bac Counselling Reader*, Sage, Lond, 1996

**Offered in Courses:** [ S6R ]

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#### KHA503 - Research Project 1

**Description:** Considers methods of evaluation and statistical procedures employed in rehabilitation. The unit includes coverage of single case designs and program evaluation to prepare students to evaluate rehabilitation outcomes in specific cases and the success of broader range initiatives designed to assist rehabilitation. Students develop a research project, either a case study or an investigation of an aspect of the rehabilitation process. Research ethics are covered. Students are required to prepare a research proposal supported by a literature review. Students present their proposals to the class. The proposal should conform to the School guidelines. The research project is commenced.

**Teaching Pattern:** 1 x 2-hr seminar (13 weeks), research proposal and commencement of research project

**Assessment:** 3,000-word literature review and research proposal (100%)

**Offered in Courses:** [ S6R ]

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#### KHA504 - Research Project 2

**Description:** Students are expected to complete data collection in relation to their individual projects. Class discussions of research progress are made. Statistical analysis strategies for data collected in relation to individual projects are considered. The research project will be completed. Students will present their analysis strategy and results from their projects to the class. Students prepare a research report in the format of a journal article. Instruction in the techniques of preparing a journal article is provided.

**Requisites:** PREREQ - KHA503

**Teaching Pattern:** 1 x 2-hr seminar (13 weeks), project

**Assessment:** 3,000-word research report (100%)

**Offered in Courses:** [ S6R ]

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#### KHA505 - Rehabilitation Theory and Practice

**Description:** Examines professional roles and issues related to the practice of rehabilitation. Theories of rehabilitation are covered with their influence on the practice of rehabilitation being considered. Ethical issues in the practice of rehabilitation are examined such as issues related to confidentiality, duty to warn and protect, and the difficulties associated with dual roles. Students consider factors associated with the practice of rehabilitation such as working with multidisciplinary teams. Emphasis is placed on assessment of needs, goal setting, outcome assessment, and practical considerations in the rehabilitation process and case management are also covered.

**Teaching Pattern:** 2 x 2-hr seminars (13 weeks)

**Assessment:** 2-hr exam in June (50%), seminar presentation (10%), 2,000 word assignment (40%)

**Offered in Courses:** [ S6R ]

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KHA506 - Vocational and Legal Rehabilitation

**Description:** Examines issues related to organisational structure and the individual experience of being in a workplace. The workers' compensation process is examined as it relates to both physical injury and occupational stress. The unit also examines the court process, the gaol system, and probation and parole. The roles of a rehabilitation consultant within the criminal justice system are considered and theories of rehabilitation as they relate to the criminal justice system are examined. Consideration is given to areas such as the enhancement of psychological adjustment for individuals within the system and their families. Coverage of the rehabilitation of victims of crime is also provided.

**Teaching Pattern:** 2 x 2-hr seminars (13 weeks)

**Assessment:** 2-hr exam in Nov (50%), seminar presentation (10%), 2,000 word assignment (40%)

**Offered in Courses:** [ S6R ]

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KHA507 - Topics in Rehabilitation

**Description:** Provides a review of current theoretical approaches in the areas of grief and bereavement with emphasis on critical stages in the bereavement process as they relate to effective therapeutic outcome in areas/presentations such as palliative care, grieving and the family, disenfranchised grief, and grief and children. Adjustment to change, and coping with disability are integral parts of this unit. In addition, consideration is given to the current methods of rehabilitation for substance-related disorders. Students learn of the physiological and psychological effects of specific substance use. Emphasis is placed on integrating this knowledge into the practice of rehabilitation.

**Teaching Pattern:** 2 x 2-hr seminars (13 weeks)

**Assessment:** 2-hr exam in June (50%), seminar presentation (10%), 2,000 word assignment (40%)

**Offered in Courses:** [ S6R ]

**Unit Delivery Information:**

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KHA508 - Rehabilitation in Medical Settings

**Description:** Covers the causes and consequences of reduction of functioning following acquired brain injury. Emphasis is placed on practical skills related to the rehabilitation process. Issues related to intellectual disability are also considered with emphasis on assessment of limitations and community integration. Rehabilitation issues related to recovery from physical illness, coping with terminal illness for the individual and the family, and adjustment to restrictions caused by physical changes are examined together with coping with and recovery from psychiatric illness. Emphasis is placed on the acquisition of information and practical skills.

**Teaching Pattern:** 2 x 2-hr seminars weekly (13 weeks)

**Assessment:** 2-hr exam in Nov (50%), seminar presentation (10%), 2,000 word assignment (40%)

**Offered in Courses:** [ S6R ]

**Unit Delivery Information:**

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KHA511/611 - Cognitive Behaviour Therapy

**Requisites:** COREQ - HGA518 and HGA519

**Staff:** Dr Chris Williams

**Teaching Pattern:** one-week Intensive [equivalent to 30 hours]

**Assessment:** Essay (3,000 words) 50% Formal seminar contribution (1,000 words) (30%) Class participation (20%)

**Offered in Courses:** [ R5T ] [ R6T ] [ R7T ]

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KHA512/612 - Forensic Psychology

**Requisites:** COREQ - HGA518 and HGA519

**Staff:** Dr Chris Williams

**Description:** This unit will involve a consideration of the application of psychological knowledge and methods to tasks faced by the legal system. In evaluating the interface between psychology and law, research will be reviewed in relation to child and eyewitness testimony, criminal profiling, lie detection and other methods of criminal investigation, jury selection and behaviour, insanity, competency and the expert witness.

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Teaching Pattern: one-week Intensive [equivalent to 30 contact hours]
Assessment: Essay (3,000 words) 50% Formal seminar contribution (30%) Class participation (20%)
Offered in Courses: [ R5T ] [ R6T ] [ R7T ]

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KHA701 - Advanced Electives 1

Description: The unit comprises of two elective options chosen from:

- KHA775 Applied Issues in Educational Psychology
- KHA785 Applied Developmental Psychology (Childhood)
- KHA783 Exceptionality & Special Children
- KHA704 Older Adults
- KHA706 Cognitive Models & Deficits
- KHA707 Rehabilitation of Cognitive Deficits
- KHA708 Professional Practice Roles
- KHA709 Neuropsychological Assessment
- KHA712 Psychopharmacology
- KHA726 Neuroanatomy for Psychologists

Requisites: PREREQ - KHA717, KHA714, KHA711, KHA713, KHA722 MEXCL - KHA754, KHA714

Staff: as advised within elective topics

Teaching Pattern: 2-hr seminar weekly (13 wks)

Assessment: as advised within elective topics

Required Texts: as advised within elective topics

Recommended Texts: as advised within elective topics

Offered in Courses: [ S7J ]

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KHA702 - Advanced Electives 2

Special Note: must be taken in second year of enrolment

Description: The unit comprises of two elective options chosen from:

- KHA775 Applied Issues in Educational Psychology
- KHA785 Applied Developmental Psychology (Childhood)
- KHA783 Exceptionality & Special Children
- KHA704 Older Adults
- KHA705 Special Topics in Health
- KHA706 Cognitive Models & Deficits
- KHA707 Rehabilitation of Cognitive Deficits
- KHA708 Professional Practice Roles
- KHA709 Neuropsychological Assessment
- KHA712 Psychopharmacology
- KHA726 Neuroanatomy for Psychologists

Requisites: PREREQ - KHA717, KHA714, KHA711, KHA713, KHA722 MEXCL - KHA756, KHA716

Staff: as advised within elective topics

Teaching Pattern: 2-hr seminar weekly (13 wks)

Assessment: as advised within elective topics

Required Texts: as advised within elective topics

Recommended Texts: as advised within elective topics

Offered in Courses: [ S7J ]

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KHA704 - Older Adults

Special Note: second year elective topic

Description: Topic areas include: psychosocial retirement, sexual, social, bereavement and death; mental health issues; neuropsychology of dementia; treatment approaches; service structures and requirements.

Requisites: COREQ - KHA701 or KHA702

Staff: Assoc Prof C Skilbeck
**KHA705 - Special Topics in Health Psychology (Unit not offered in 2006)**

**Special Note:** second year elective topic  
**Description:** Topic areas include: complementary medicine, effects of illness on performance, issues in chronic illness; child physical health; exercise, sleep, sexuality.  
**Requisites:** COREQ - KHA701 or KHA702  
**Staff:** Dr E Hart (Coordinator)  
**Teaching Pattern:** 2-hr search seminar weekly (6 wks)  
**Assessment:** preparation of teaching materials on selected topic (100%)  
**Recommended Texts:** tba  
**Offered in Courses:** [S7J]

**KHA706 - Cognitive Models & Cognitive Deficits (Unit not offered in 2006)**

**Description:** Cognitive deficits are considered against available cognitive models. Topic areas include: models of reading -- dyslexia; models of face processing -- prosopagnosia, emotion, memory; models of language -- aphasia; models of attention-deficits; models of memory-deficits; models of visuospatial processing-deficits  
**Requisites:** COREQ - KHA701 or KHA702  
**Staff:** Assoc Prof C Skilbeck  
**Teaching Pattern:** 2-hr seminar weekly (6 wks)  
**Assessment:** seminar presentation (100%)  
**Offered in Courses:** [S7J]

**KHA707 - Rehabilitation of Cognitive Deficits**

**Special Note:** second year elective topic  
**Description:** The possible techniques for the recovery, management and rehabilitation of cognitive deficits are considered. Topic areas include: dyslexic deficits; attentional deficits; memory deficits; executive deficits; visuospatial deficits, and the use of PCs in rehabilitating cognitive deficits.  
**Requisites:** COREQ - KHA701 or KHA702  
**Staff:** Assoc Prof C Skilbeck  
**Teaching Pattern:** 2-hr seminar weekly (6 wks)  
**Assessment:** seminar presentation (100%)  
**Offered in Courses:** [S7J]

**KHA708 - Professional Practice Roles**

**Special Note:** Elective topic  
**Description:** The aim of this unit is to introduce students to a range of roles that the practising clinical psychologist may be required to undertake. The purpose is to use existing knowledge and skills and apply them in different areas. The topics chosen were selected to represent some of the challenges faced by practising clinical psychologists.  
**Requisites:** PREREQ - KHA701 OR KHA702  
**Staff:** Dr Janet Haines  
**Teaching Pattern:** 2-hr seminar weekly (6 wks);  
**Assessment:** Skill assessment (40%), assignment (60%)  
**Required Texts:** tba  
**Offered in Courses:** [S7J][S9H][S9F]

**KHA709 - Neuropsychological Assessment**

**Special Note:** Elective topic
Description: The unit aims to provide a working knowledge of neuropsychological assessment instruments commonly used in clinical practice. Relevant clinical and theoretical literature will be reviewed, with an emphasis on the development of practical skills. The practical aspects of neuropsychology in clinical practice will consider the process of a neuropsychological assessment and major neuropsychological assessment domains including premorbid intelligence, general cognitive functioning, attention and executive functioning, memory and language.

Requisites: COREQ - KHA701OR KHA702

Staff: Dr Maria Scarcia

Teaching Pattern: 2-hr seminar weekly (6 wks);

Assessment: Research critiques (5)


Offered in Courses: [ S7J ] [ S9H ] [ S9F ]

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KHA711 - Current Issues in Assessment

Special Note: must be taken in the first year of enrolment

Description: This unit aims to provide students with the knowledge and practical skills to conduct a competent psychological assessment. Relevant clinical and theoretical literature will be reviewed, and emphasis given to the practical skills needed to evaluate, administer, score and interpret commonly used clinical instruments. Emphasis will also be given to the ability to integrate this information into a meaningful and relevant report, along with the ability to feedback this information to the client and other referral sources. Forms of clinical assessment will include clinical interviewing, intelligence, memory and personality assessment. Consideration will be given to important ethical issues associated with test usage.

Requisites: MEXCL - KHA766, KHA711

Staff: Dr M Scarcia

Teaching Pattern: 2-hr seminar weekly (13 wks)

Assessment: Weekly exercises 30%, practical skills 40%, report writing 30%


Offered in Courses: [ S7J ]

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KHA712 - Psychopharmacology & Psychopathology (Unit not offered in 2006)

Special Note: unit offered in alternate years

Description: Provides an introduction to basic psychopharmacology and the underlying physiological systems that play a role in drug and behaviour relationships, and examines the role of psychopharmacology in psychopathological disorders such as schizophrenia, affective disorders and anxiety disorders.

Requisites: MEXCL - KHA752

Staff: Dr W Slaghuis

Teaching Pattern: 2-hr seminar weekly (6 wks)

Assessment: 2-hr exam (80%), seminar participation (20%)


Offered in Courses: [ S7J ]

KHA713 - Adult Psychopathology

Special Note: must be taken in the first year of enrolment

Description: Studies the development, organisation and content of behaviour disorders. An experimental-clinical approach is taken, and students are expected to become familiar with current research in the area. Consideration is given to the diagnostic features of specific disorders, prevalence, course, aetiological knowledge and theories, familial, social and cultural features and, differential diagnostic issues. Clinical case study material is used as appropriate and students are required to be familiar with the DSM-IV classificatory system as it applies to the practice of clinical psychology. The DSM-IV and other classificatory systems are critiqued.

Requisites: MEXCL - KHA753

Staff: Dr CL Williams (Coordinator)

Teaching Pattern: 2-hr seminar weekly (13 wks)

Assessment: 2-hr exam in June (60%), seminar presentation and contribution (40%)


Offered in Courses: [ S7J ]

Unit Delivery Information:
KHA714 - Behaviour Change 1

Special Note: must be taken in first year of enrolment

Description: Involves a detailed study of the empirically based systems of behaviour change, counselling and psychotherapy. The unit emphasises skill acquisition and students are required to demonstrate their skills in relation to specific therapeutic procedures. Course coordinators provide a review of the theory and practice of a range of therapeutic procedures. Students take responsibility for presentation and case discussion based upon simulated case histories provided by the coordinators.

Requisites: MEXCL - KHA754, KHA774

Staff: Dr E Hart (Coordinator)

Teaching Pattern: 3-hr seminar weekly (13 wks)

Assessment: 2-hr exam in June (50%), seminar presentation and assignments (50%)


Recommended Texts: Barlow, DH, Clinical Handbook of Psychological Disorders, 2nd edn, Guilford Press, NY, 1993


Martin G & Pear J, Behavior Modification. What it is and How to do it,Prentice Hall, NJ, 1999

Nathan PE & Gorman JM, A Guide to Treatments that Work, OUP, NY, 1998


Offered in Courses: [ S7J ]

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KHA716 - Research Design 1

Special Note: must be taken in first year of enrolment

Description: The objective of the unit is to equip intern psychologists for research in both `pure` and `applied` areas. The unit includes a range of topics, from single case designs, qualitative methods, non-parametric statistics and questionnaire design, through to program evaluation. Some sessions cover topics in research design and evaluation, which are particularly appropriate in applied fields.

Staff: Assoc Prof C Skilbeck (Coordinator), Dr J Davidson

Teaching Pattern: 2-hr seminar weekly (13 wks)

Assessment: 2 x 1,500-word reports (50% ea)


Recommended Texts: Maritz JS, Distribution-free Statistical Methods, Chapman & Hall, 1995


Offered in Courses: [ S7J ]

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KHA717 - Ethical Issues & Professional Practice 1 (Unit not offered in 2006)

Special Note: must be taken in the first year of enrolment

Description: Considers practical and ethical issues in clinical and educational psychological practice. Case presentations are undertaken as part of the practice of communicating with colleagues and related professionals. Supervised clinical and educational and developmental practice is undertaken.

Requisites: MEXCL - KHA757, KHA777

Staff: Dr E Hart (Coordinator)

Teaching Pattern: 2-hr seminar weekly (26 wks)

Assessment: seminar presentations, case reports, and assignments (40%), satisfactory performance on 2 placements (60%)


Offered in Courses: [ S7J ]

KHA718 - Research Thesis 1 (Unit not offered in 2006)

Special Note: must be taken in first year of enrolment

Description: A research proposal is prepared for presentation to staff and postgraduate students and for School approval. The literature review and/or research study is commenced.

Requisites: MEXCL - KHA758, KHA778
KHA719 - Forensic Psychology (Unit not offered in 2006)

**Special Note:** core unit offered in alternate years

**Description:** Areas covered include the criminal justice system, the concept of the expert witness, the insanity plea, fitness to plead, pre-sentence reports, criminal and civil injuries compensation and workers compensation. Case reports and court transcripts are used. Practical exercises simulating court situations are completed. Emphasis is on the preparation of a range of forensic reports and the presentation of evidence in court.

**Staff:** Assoc Prof C Skilbeck (Coordinator)

**Teaching Pattern:** 2-hr research seminar weekly (26 wks); individual consultation with supervisor

**Offered in Courses:** [ S7J ]

KHA721 - Advanced Assessment

**Special Note:** must be taken in second year of enrolment

**Description:** This subject aims to provide students with advanced training in the administration and interpretation of commonly used clinical instruments for assessment and treatment planning. An evidence-based approach to best practice in psychological assessment will be emphasized. Topics to be covered will include diagnostic interviewing, brief screens, cognitive functioning, and specific psychological problems. Consideration will also be given to the differing assessment needs of children, adults and the elderly.

**Requisites:** PREREQ - KHA711 MEXCL - KHA751

**Staff:** Dr M Scarca (Coordinator)

**Teaching Pattern:** 2-hr seminar weekly (13 wks)

**Assessment:** seminar presentation and case presentation (60%), 3000 word essay (40%)


**Offered in Courses:** [ S7J ]

KHA722 - Clinical Child Psychology

**Special Note:** must be taken in first year of enrolment

**Description:** This unit aims to provide an overview of the most commonly encountered behavioural, emotional, social, developmental and health-related childhood and adolescent clinical disorders. Topics may include attention deficit-hyperactivity disorder, conduct disorder, depression, fears and anxieties, brain injury, children at risk from physical and sexual abuse, family conflict, eating disorders, and substance use problems. An evidence-based practice approach will be used to examine current diagnostic, assessment and treatment issues. Particular attention will be given to the need for developmental and cultural sensitivity in clinical practice.

**Staff:** Dr M Scarca (Coordinator), Dr J Haines

**Teaching Pattern:** 2-hr seminar weekly (13 wks)

**Assessment:** Treatment manual for specific clinical disorder (50%), seminar presentation (50%)


**Offered in Courses:** [ S7J ]

KHA723 - Community & Group Processes

**Special Note:** core unit offered in alternate years

**Description:** Considers the nature and development of community psychology and reviews some contemporary issues. Areas covered include community mental health, educational programs, the criminal justice system, unemployment, negotiation strategies, conservation of resources and the environment, and research methods in community psychology. Intercultural, ethnic and indigenous issues are covered, and specific issues in working with couples and groups are addressed.

**Requisites:** MEXCL - KHA763

**Staff:** Dr CL Williams (Coordinator)

**Teaching Pattern:** 2-hr seminar weekly (13 wks)

**Assessment:** 2-hr exam in Nov (60%), seminar presentation (40%)


**Offered in Courses:** [ S7J ]
KHA724 - Behaviour Change 2

Special Note: must be taken in second year of enrolment

Description: Further study of the empirically-based systems of behaviour-change counselling and psychotherapy. The unit emphasises skill acquisition in relation to specific therapeutic procedures. Seminars involve formal presentations and a workshop format involving role plays and exercises. While emphasis is placed on cognitive behavioural approaches, some more specific therapeutic procedures are considered as are group, couple and family approaches.

Requisites: PREREQ - KHA714 MEXCL - KHA754

Staff: Dr J Haines (Coordinator)

Teaching Pattern: 2-hr seminar weekly (13 wks)

Assessment: class contribution and role play (50%), 2,500-word essay (30%), seminar presentation (20%)


Offered in Courses: [ S7J ]

KHA725 - Clinical Neuropsychology

Special Note: core unit offered in alternate years

Description: Considers the presentation of human brain dysfunction, the techniques of diagnosis and assessment, and the psychological management of individuals with neuropsychological problems. The unit concentrates on issues relevant to the general clinical psychologist. The topic sequence links to KHA726 Neuroanatomy for Psychologists.

Requisites: MEXCL - KHA760

Staff: Assoc Prof C Skilbeck (Coordinator)

Teaching Pattern: 2-hr seminar weekly (13 wks)

Assessment: 2-hr exam in Nov (100%)


Offered in Courses: [ S7J ]

KHA726 - Neuroanatomy for Psychologists

Special Note: core unit offered in alternate years

Description: Provides an introduction to neuroanatomy/neuropathology. Topics are linked to KHA725 Clinical Neuropsychology.

Requisites: MEXCL - KHA761

Staff: Assoc Prof C Skilbeck (Coordinator)

Teaching Pattern: 2-hr seminar weekly (13 wks)

Assessment: 2-hr exam in Nov (100%)


Nolte J, *The Human Brain*, Mosby, St LUIS, 2002

Offered in Courses: [ S7J ]

KHA727 - Ethical Issues & Professional Practice 2 (Unit not offered in 2006)

Special Note: must be taken in second year of enrolment

Description: Prepares students for the practice of clinical psychology. The seminar component of this unit comprises three sections: simulation of aspects of the therapeutic process through role play; consideration of ethical issues in clinical psychological practice; advanced level case presentation. Supervised clinical and educational practice is undertaken.

Requisites: PREREQ - KHA717 MEXCL - KHA767, KHA744, KHA787

Staff: Dr CL Williams (Coordinator), Dr J Haines
Teaching Pattern: 2-hr seminar weekly (26 wks)
Assessment: seminar performance, presentation and participation (40%), satisfactory placement reports (60%)
Offered in Courses: [ S7J ]

KHA728 - Research Thesis 2 (Unit not offered in 2006)
Special Note: must be taken in second year of enrolment
Description: Involves completion of research thesis (literature review and research report) of between 10,000 and 15,000 words, by 30 November.
Requisites: PREREQ - (KHA718 or *KHA758) and (as prereq or coreq) KHA716 MEXCL - KHA768, KHA788
Staff: Assoc Prof C Skilbeck (Coordinator)
Teaching Pattern: 2-hr seminar weekly (26 wks), individual consultation with supervisor
Assessment: literature review and report of empirical investigation examined by one internal and one external examiner
Offered in Courses: [ S7J ]

KHA729 - Research Design 2
Special Note: must be taken in second year of enrolment
Description: Equip students with design and statistical analysis procedures and techniques for their psychological research (including clinical and educational areas) appropriate to this discipline. During the unit students are introduced to advanced design and statistical procedures which are directly relevant to their research topics.
Requisites: PREREQ - KHA716 MEXCL - KHA731, KHA711
Staff: Assoc Prof C Skilbeck (Coordinator),
Teaching Pattern: 2-hr seminar weekly (13 wks)
Assessment: presentation of data for discussion (50%), participation in seminar discussions (50%)
Offered in Courses: [ S7J ]

KHA734 - Ethics & Professional Practice
Description: Considers practical and ethical issues in clinical psychological practice and prepares students for the first clinical placement.
Requisites: COREQ - KHA711 COREQ - KHA714 COREQ - KHA713
Staff: Dr Elaine Hart
Teaching Pattern: 2-hr seminar weekly (13 weeks)
Assessment: 3000 word essay (75%) and seminar presentation (25%)
Offered in Courses: [ S7J ] [ S9F ] [ S9H ]

KHA735 - Professional Practice 1
Description: Considers practical and ethical issues in clinical practice. Case presentations are undertaken to provide practice in communication with colleagues and related professionals.
Requisites: PREREQ - KHA714 PREREQ - KHA734 PREREQ - KHA711 COREQ - KHA745
Staff: Dr Elaine Hart
Teaching Pattern: 2-hr seminar weekly (13 weeks)
Assessment: Two case reports (80%) and case presentation (20%)
Required Texts: Australian Psychological Society, Code of Ethics, Melb, 2002
Offered in Courses: [ S7J ] [ S9F ] [ S9H ]

KHA736 - Research Thesis 1A
Description: A research proposal is developed and presented to staff and postgraduate students for School approval.
Requisites: PREREQ - KHA716, KHA736
Staff: Assoc Prof Clive Skilbeck (Coordinator)
KHA739 - Research Thesis 1B

Description: In consultation with the research supervisor, ethics approval for the proposed research is sought and students commence work on their project.

Requisites: PREREQ - KHA716, KHA736
Staff: Assoc Prof Clive Skilbeck (Coordinator)

KHA740 - Professional Practice 2

Description: Considers practical and ethical issues in clinical practice. Case presentations and simulation of aspects of the therapeutic process through role play are undertaken to prepare students for the practice of clinical psychology.

Requisites: COREQ - KHA746 PREREQ - KHA745
Staff: Dr Chris Williams, Dr Janet Haines

KHA741 - Professional Practice 3

Description: Considers practical and ethical issues in clinical practice. Advanced level case presentations are undertaken together with simulation of aspects of the therapeutic process through role play, to prepare students for the practice of clinical psychology.

Requisites: PREREQ - KHA746 COREQ - KHA776
Staff: Dr Chris Williams, Dr Janet Haines

KHA743 - Research Thesis 2A

Description: Work continues on the approved research project and data collection is completed.

Requisites: PREREQ - KHA739
Staff: Assoc Prof Clive Skilbeck (Coordinator)

KHA745 - Clinical Placement 1

Description: The first clinical placement requires 350 hours of professional experience at the University Psychology Clinic or, for experienced students, other suitable external placement setting. Students will work in the Clinic under the supervision of appropriate staff. This placement provides an opportunity to develop clinical skills to a level suitable for effective practice as a clinical psychologist. It is the first placement in an integrated sequence of placements in the clinical training program.

Requisites: PREREQ - KHA734 PREREQ - KHA714 PREREQ - KHA713 PREREQ - KHA711
Staff: Dr Maria Scarcia (Coordinator)

Assessment: Formal evaluation of clinical skills (75%) and folio of work undertaken, including a log of clinical and supervisory contact hours and written case reports (25%).
Offered in Courses:  [ S7J ] [ S9F ] [ S9H ]

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**KHA746 - Clinical Placement 2**

**Description:** The second clinical placement requires 350 hours of professional experience at an external placement setting. Placement settings will encompass a range of client problems, varying age ranges, settings, and use of a variety of clinical skills. This placement provides an opportunity to experience a variety of client problems, and to develop advanced clinical skills to a level suitable for independent practice as a clinical psychologist. It is the second placement in an integrated sequence of placements in the clinical program.

**Requisites:** PREREQ - KHA735 PREREQ - KHA745

**Staff:** Dr Maria Scarcia (Coordinator)

**Teaching Pattern:** 350 hours of supervised professional experience

**Assessment:** Formal evaluation of clinical skills (75%) and folio of work undertaken, including a log of clinical and supervisory contact hours and written case reports (25%).

Offered in Courses:  [ S7J ] [ S9F ] [ S9H ]

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**KHA747 - Clinical Placement 3**

**Description:** The third clinical placement requires 350 hours of professional experience at an external placement setting. Placement settings will encompass a range of client problems, varying age ranges, settings, and use of a variety of clinical skills. This placement provides an opportunity to experience a variety of client problems, and to develop advanced clinical skills suitable for independent practice as a clinical psychologist. It is the third placement in an integrated sequence of placements in the clinical program.

**Requisites:** PREREQ - KHA746 PREREQ - KHA740

**Staff:** Dr Maria Scarcia (Coordinator)

**Teaching Pattern:** 350 hours of supervised professional experience

**Assessment:** Formal evaluation of clinical skills (75%) and folio of work undertaken, including a log of clinical and supervisory contact hours and written case reports (25%).

Offered in Courses:  [ S7J ] [ S9F ] [ S9H ]

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**KHA749 - Health Psychology (Unit not offered in 2006)**

**Special Note:** core unit offered in alternate years

**Description:** Covers the major models employed in health psychology and the processes of assessment and formulation. Sessions provide input on the psychological models of coping with chronic and terminal conditions, as well as on specific areas such as HIV/AIDS, and women’s health.

**Requisites:** MEXCL - KHA730

**Staff:** Dr E Hart

**Teaching Pattern:** 2-hr seminar weekly (13 wks)

**Assessment:** 2-hr exam in Nov (60%), seminar presentation and assignment (40%)


OR


AND


**Recommended Texts:** Payne S & Horn S, *Psychology & Health Promotion*, Open Univ, 1997


Offered in Courses:  [ S7J ]

**KHA750 - Clinical Psychology**

**Description:** Umbrella unit. Contact the School of availability and details.

**Staff:** Assoc Prof C Skilbeck (Coordinator)

Offered in Courses:  [ S7J ]

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KHA755 - Research Thesis 2B

**Description:** Results of research are reported in a thesis of between 10,000 and 15,000 words and submitted for examination.

**Requisites:** PREREQ - KHA743

**Staff:** Assoc Prof Clive Skilbeck (Coordinator)

**Teaching Pattern:** 2-hr research seminar weekly (26 wks); individual consultation with supervisor

**Assessment:** literature review and report of empirical investigation examined by one internal and one external examiner

**Offered in Courses:** [ S7J ] [ S9H ]

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KHA775 - Applied Issues in Educational Psychology

**Special Note:** second year elective topic

**Description:** Examines contemporary issues that have significance for psychologists working in educational settings. The issues are topic-based and address a range of applied areas and include the effects of chronic illness (mental, physical) on schooling and learning; aboriginality/ethnicity issues, effects of family conflict, marital separation and divorce, achievement anxiety -- manifestations and interventions; rewards and incentives in student motivation; school refusal.

**Requisites:** COREQ - KHA701 or KHA702

**Staff:** Dr T Thompson (Coordinator)

**Teaching Pattern:** 2-hr seminar weekly (6 wks)

**Assessment:** seminar presentation and 1,000 word paper (100%)

**Offered in Courses:** [ S7J ]

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KHA783 - Exceptionality & Special Children (Unit not offered in 2006)

**Special Note:** second year elective topic

**Description:** (Year B) Examines exceptional developmental patterns with regard to educational and other therapeutic interventions. Topics include: issues of definition and classification; domains of exceptionality and developmental approaches; early intervention and education; individual, family and school-based interventions; community and vocational issues in disability; the role of the psychologist -- legal and ethical considerations.

**Requisites:** COREQ - KHA701 or KHA702 MEXCL - KHA732

**Staff:** Dr R Burton Smith (Coordinator)

**Teaching Pattern:** 2-hr seminar weekly (6 wks)

**Assessment:** seminar presentation (100%)


**Offered in Courses:** [ S7J ]

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KHA785 - Applied Developmental Psychology: Childhood

**Special Note:** second year elective topic

**Description:** Examines specific issues that have immediate relevance to practitioners. Topics covered include: trauma and resilience during childhood; non-traditional families and gender role development; peer-rejection, social and emotional development; parental psychiatric illness and child adjustment; death in the family; contemporary parenting patterns and latchkey children.

**Staff:** Dr R Burton Smith (Coordinator)

**Teaching Pattern:** 2-hr seminar weekly (6 wks)

**Assessment:** seminar presentation (100%)

**Offered in Courses:** [ S7J ]

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KHA803 - Master of Applied Science, Project

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**KHA804/05 - Master of Applied Science, Thesis**

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**KHA806 - Master of Applied Science, Thesis**

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**KLA100 - Introduction to Agriculture and Horticulture**

Description: Introduces the major agricultural and horticultural industries in Tasmania and mainland Australia and covers a range of agricultural and biological concepts which relate to these industries. Industry profiles are presented for the fruit, vegetable, essential oil, poppy, cereal, legume, pasture and animal production industries. Practical work includes group discussions/tutorials, and excursions to the University Farm at Cambridge, the Horticultural Research Centre, and to private farming enterprises.

Staff: Prof RJ Clark (Coordinator), Dr NJ Mendham, Dr PH Brown, Dr PA Lane, Dr SJ Wilson

Teaching Pattern: 2 lectures, 3 hrs lab/tutorial/excursion weekly (13 wks)

Assessment: 3-hr exam (50%), continuous assessment (50%)

Offered in Courses: [ S3A ] [ S3B ]

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**KLA105 - Business of Agriculture and Horticulture**

Description: Introduces principles and techniques relevant to financial and business management of agricultural and horticultural enterprises. Aspects of financial management include accounting techniques, accounting statements, gross margin and enterprise budgeting and capital expenditure analysis. Emphasis is placed on planning, implementation and control of business enterprises. The University Farm is used as a model to develop a framework for the study of enterprise and business analysis. Other areas covered include an introduction to aspects of law and taxation for primary producers, business structures, risk management, SWOT analysis and strategic planning.

Staff: Prof RJ Clark (Coordinator), Dr PA Lane

Teaching Pattern: 2 lectures, 2 hrs tutorial or 3 hrs practical/excursion weekly (13 wks)

Assessment: 3-hr exam (50%), 2 practical reports/class assignments (50%)

Offered in Courses: [ S3B ]

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**KLA110 - Science of Agriculture**

Description: Consists of three components which provide fundamental knowledge relevant to scientific applications in agriculture. The individual components cover a number of basic principles and concepts in applied physics, an introduction to data collection and quantitative statistics and a range of practical physical science issues or applications in agriculture.
KLA110 - Sustainable Resource Management

Description: Covers ecological principles including energy flow and nutrient cycling in natural and managed ecosystems. Features of managed ecosystems including maintenance of soil fertility, control of competing organisms (diseases, pests, weeds), and productivity are also covered in systems ranging from shifting cultivation in the tropics to intensive horticulture. The ecological, economic and social sustainability of these systems is considered in relation to diversity, intensity of management, and productivity. Environmental issues in agriculture such as vegetation, land and water degradation, wildlife diversity, pests and weeds, pesticide use, and biological control are discussed. Examples of horticultural, forestry, animal production and cropping systems will be used to illustrate major principles covered in the unit.

Staff: Dr NJ Mendham, Dr PH Brown

Teaching Pattern: flexible delivery for dist.ed students; 2 lectures, 3 hrs tutorial/excursions weekly for internal students (13 wks)

Assessment: 3-hr exam (60%), continuous assessment (40%)

Offered in Courses: [ S3A ] [ S3B ] [ S3G ] [ S3T ] [ S3V ] [ S3Z ]

KLA200 - Microbiology 1 (Marine)

Description: An elective unit in the Bachelor of Marine Science degree, providing students with an understanding of nutrient-recycling through the food chain, and providing a global perspective on the biogeochemical cycles. The curriculum covers basic structure and function (including the effect of hydrostatic pressure on microbial physiology) of bacteria and viruses as taught to students enrolled in KLA210 but also examines specific marine topics of habitats (sea surface, water column, sediments, sea vents and beneath the ocean floor), the contribution of molecular methods to our knowledge of the diversity of marine microorganisms, the cycling of carbon, nitrogen, phosphorus, iron and silicon in the ocean, primary energy sources for cell metabolism, food chains, and the global effects of microbial processes in the ocean.

The practical component includes a component of marine microbiology relating to isolation and identification of microorganisms in natural and contaminated sites.

Requisites: PREREQ - Any 1 of KPA150, KZA151 or KRA110 PREREQ - KLA210, KLA398

Staff: Dr MA Line (Coordinator), Dr T Ross

Teaching Pattern: 26 lectures, 13 lab classes and 10 tutorials

Assessment: An assignment (5%); Practical exam (20%) and 3-hour Theory exam (75%)


KLA210 - Microbiology and Mycology

Special Note: available to students undertaking BAgSc, BSc, BBiotech, BNatEnvWildStud or BAppSc(Ag) course; the unit is a prerequisite for BSc students wishing to obtain a major in microbiology.

Description: Provides students with a basic knowledge of microbiology and mycology. The unit covers the significance of microorganisms to us and the environment, their structure and function, and a brief outline of the diseases they cause. It also introduces virology, the major taxonomic groups of macro and microfungi and their mutualistic or parasitic relationships with other organisms.

The practical component provides students with skills in the cultivation and identification of bacteria and fungi as well as an introduction to techniques in molecular microbiology.

Requisites: PREREQ - any group 1 unit in chemistry, plant science or zoology

Staff: Dr MA Line, Dr T Ross, Ms A Hopkins, Ms L Maddock

Teaching Pattern: 26 lectures, 13 lab classes

Assessment: 3-hour theory exam in Nov (70%), practical exam during last week of sem 2 (20%), weekly assignments (10%)

Recommended Texts: Madigan and Martinko, Brock Biology of Microorganisms,11th edn, Prentice Hall (available in the Biomedical Library)

Black microbiology Principles and Explorations 6th edn, Wiley (available in the Biomedical Library)

Offered in Courses: [ S3A ] [ S3B ] [ S3G ] [ S3T ] [ S3V ] [ S3Y ] [ S3I ]

Unit Delivery Information:
**KLA211 - Pasture and Animal Science**

**Description:** Introduces students to the production and management of pastures in grazing animal systems and general ruminant nutrition. In the pastures component topics include pasture types and species, pasture establishment, plant growth and development, grass–legume relationships, essential nutrients for pastures, seasonality of production and fodder conservation. The animal component examines the digestive physiology of ruminants, basic nutrition (protein, energy, water, vitamins, minerals, etc), the development of feeding systems and ration computations and feed analysis. Practicals provide experience in pasture assessment and laboratory techniques for determination of feed quality.

**Staff:** Dr PA Lane, Dr Aduli Malau-Aduli

**Teaching Pattern:** 2x1-hr lectures, 3-hr practicals weekly (13 wks)

**Assessment:** 3-hr theory exam (60%), assignments (40%)

**Offered in Courses:** [ S3A ] [ S3B ]

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**KLA213 - Agricultural Geology & Soil Science**

**Description:** Includes introductory soil science and geology with basic concepts of mineralogy and petrology, sedimentology, ground water, and descriptions of soil profiles, their formation and distribution in Tasmania, soil salinity, soil acidification and the basic nutrient cycles in soils. Practical work includes the identification and classification of rocks and minerals, ground water, field description and basic chemical analysis of soils. Three full-day excursions (on weekends) examine the geology and geomorphology of south-east Tasmania, soil formation in various environments, soil distribution, and the issues of sustainable land use and land degradation in Tasmania.

**Requisites:** MEXCL - KEA101

**Staff:** Dr RB Doyle (soils), Dr R Berry (geology)

**Teaching Pattern:** 2 lectures, 3-hr practical weekly (13 wks) 3 full-day excursions

**Assessment:** 3-hr theory exam (65%), practical work and reports (45%)


**Offered in Courses:** [ S3A ] [ S3B ] [ S3G ] [ S3G ] [ S3T ]

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**KLA214 - Crop and Plant Physiology**

**Description:** Covers the basic mechanisms of plant function, from the molecular to the whole-plant level. The unit consists of several modules and covers cell physiology, whole-plant physiology, crop growth and development and crop adaptive responses to environment. These modules examine plant–water relations, photosynthetic performance, respiration and transport processes in terms of their effect on crop yield and performance in field conditions. Fundamental issues in plant physiology are studied in relation to principles of crop improvement and optimisation of crop performance.

**Requisites:** PREREQ - KPA161 or KPA120 or equiv

**Staff:** Dr S Shabala, Dr NJ Mendham

**Teaching Pattern:** 26 lectures, 39 hrs practicals

**Assessment:** 3-hr theory exam (60%), assignments during semester on specific topics (10%), lab report (30%)


Salisbury FB & Ross CW, *Plant Physiology*, 4th or 5th edn, Wadsworth Publ., Belmont, Ca


**Offered in Courses:** [ S3A ] [ S3B ]

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**KLA215 - Field Agriculture**

**Special Note:** Students complete a week of field-based study prior to the start of semester 1

**Description:** Involves an initial five days of practical activities and excursions to the north and north-west of the State. Students investigate agricultural production systems with an emphasis on the practical application of scientific principles in crop production and animal husbandry, as well as develop an understanding of current issues and management practices relevant to the future development and viability of the state's main agricultural industries. The unit also covers in detail the identification, classification, diversity and collection of plants of agricultural importance.

**Staff:** Dr PA Lane (Coordinator)

**Teaching Pattern:** 5 days field study, equiv to 10 hrs lectures and 30 hrs practicals, 13x4-hr practicals on plant identification and classification

**Assessment:** reports and assignments (45%), plant collection (15%), plant taxonomy practical exam and tests(40%)
Required Texts: Curtis WM & Morris DI, *The Students Flora of Tasmania*, Parts 1,2,3 and 4B, St Davids Park Publ, Hobart.

Offered in Courses: [ S3A ] [ S3B ] [ S3G ]

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**KLA217 - Agricultural Technology**

Description: Studies aspects of weather and micro-climate in agricultural production and the technology associated with the management of the physical (abiotic) environment in cropping systems. The unit includes theoretical aspects and practical management of frost and wind protection, chemical spray drift and irrigation.

Staff: Dr SJ Wilson (Coordinator)

Teaching Pattern: 26 lectures, 39 hrs practicals/tutorials, half-day field trip

Assessment: 3-hr theory exam (60%), field report (20%), assignments (20%)


Offered in Courses: [ S3A ]

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**KLA220/320/420 - Animal Production Systems**

Special Note: Next offered 2006

Description: Provides an overview of animal production systems in Australia that includes beef cattle production, dairy cattle production, wool production and meat sheep production. Areas covered in each of these production systems include: animal nutrition and ration formulation, grazing management, housing, selection of breeding stock, management practices, health, benchmarking and current statistics of Australian wool and meat sheep production, dairy production and meat quality assessment. Aspects of animal physiology, and factors determining product quality in each of the wool, red meat and dairy industries will be discussed.

Staff: Dr Aduli Malau-Aduli (Coordinator), guest and industry based lecturers as required: Drs Danny Donaghy, Matthew Dunbabin, Lucy Burkitt, Mark Freeman, Richard Rawnsley.

Teaching Pattern: 26 lectures, 39 hrs practicals/tutorials

Assessment: 3-hr exam (60%), computer and laboratory practicals, excursions, literature review and reports (40%)

Recommended Texts: The following texts will be held on Library Reserve:


*Principles of Meat Science*. Elton D. Aberle et al. (Kendall Hunt Publishing Company 2001)


*Beef and Dairy Management and Production*. Norman G. Fonter (Hutchinson Publishers)

Offered in Courses: [ S3A ]

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**KLA242/342 - Horticultural Production Systems (Unit not offered in 2006)**

Description: Provides students with an overview of Australian horticultural production, including study of ecological aspects of fruit and vegetable production in Australia, growth and development of the major horticultural crop species, and principles underlying horticultural practice including canopy management, flowering and fruit development, and crop regulation.

Staff: Dr PH Brown, Dr SJ Wilson

Teaching Pattern: 26 lectures, 39 hrs practicals/tutorials

Assessment: 3-hr theory exam (60%), assignments (40%)

Offered in Courses: [ S3A ] [ S3G ]

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**KLA250/350/450 - Crop and Pasture Production (Unit not offered in 2006)**

Special Note: Next offered in 2007

Description: Develops the principles of crop and pasture production, both as individual enterprises and as components of farming systems. The crop component examines the characteristics, management and use of the main groups, including cereal, legume, oilseed, fibre and sugar crops and introduces the principles of plant breeding. The pasture component includes pasture/animal interactions, role of pastures in soil salinity and acidification, fodder conservation and specialist pasture species. Practical work aims to develop an understanding of crop and pasture production in farming systems, including applications of the decision support system GrassGro. Crop management includes monitoring crop growth and development in glasshouse and field situations.
Units Coded K – Faculty of Science, Engineering & Technology

Staff: Dr NJ Mendham, Dr PA Lane
Teaching Pattern: 26 Lectures, 13x3hr practicals
Assessment: 3-hr theory exam (60%), assignments (40%)
Offered in Courses: [ S3A ] [ S3B ] [ S3G ]

KLA254/354 - Insect Diversity and Function (Unit not offered in 2006)
Description: Insects are the dominant life form on earth and hence an introduction to entomology, as is offered in this unit, is fundamental not only to applied practitioners but also to those interested in zoology, conservation, biodiversity and environmental studies. This unit provides an introduction to the classification, diversity, structure, function and general biology of insects. A collection of insects is a required component of the unit.
Requisites: PREREQ - KZA161 or KZA160 or KZA150 or KZA151 or equiv
Staff: Dr GR Allen
Teaching Pattern: 26 lectures, 13 lab classes/excursions/field trips
Assessment: continuous assessment (practicals, reports, etc.) (15%), practical exam (10%), insect collection (25%), 3-hr theory exam (50%)
Offered in Courses: [ S3A ] [ S3B ] [ S3G ] [ S3T ]

KLA287/387 - Introduction to Plant Diseases
Special Note: Next offered 2006
Description: Introduces plant pathology, and discusses concepts of disease and field and laboratory diagnostic procedures. This is followed by a review of the biotic agents of plant disease (viruses and viroids, bacteria and phytoplasmas, fungi, nematodes and parasitic plants).
Staff: Dr CR Wilson, tba
Teaching Pattern: 26 lectures, 13 lab classes/tutorials
Assessment: 3-hr theory exam (50%), practical exam (20%), practical work (30%)
Agrios GN, Plant Pathology, ISBN 0120445646
Offered in Courses: [ S3A ] [ S3B ] [ S3G ] [ S3T ]

KLA287/397/497 - Fundamentals of Soil Science
Description: Develops students' ability to undertake basic soil analyses and interpret soil analytical data for management of soil physical, chemical and morphological problems. Issues covered include: management of salinity, soil drainage design, soil water retention and irrigation principles, soil biology, erosion control, and soil chemical processes. The unit begins with field description and sampling of several soil profiles. The soil profiles are then analysed as a class exercise and interpretations and soil management plans are developed.
Requisites: - Some requisites may differ unit to unit.
KLA497:
KLA297: PREREQ - KLA213 or * KEA101 or equiv
KLA397: PREREQ - KLA213 or * KEA101 or equiv
Staff: Dr RB Doyle
Teaching Pattern: 2 lectures weekly, 18x3-hr practicals, 2 full-day field trips
Assessment: 3-hr exam (60%), written and practical reports (40%)
Offered in Courses: [ S3A ] [ S3B ] [ S3G ] [ S3T ]

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KLA314/414 - Insect Ecology and Behaviour (Unit not offered in 2006)
Description: Provides an overview of insect ecology and looks at life-history strategies, behavioural ecology, mating systems, insect-plant interactions, natural enemies, population ecology, pest management and specialist areas such as medical and forensic entomology.
Requisites: PREREQ - one of KZA161, KZA160, KZA150, KZA151 or equiv
Staff: Dr GR Allen
Teaching Pattern: 26 lectures, 13 lab classes/tutorial/field trips
Assessment: practicals/seminars/tutorials (45%), 3-hr theory exam (55%)
Offered in Courses: [ S3A ] [ S3G ] [ S3T ]
KLA318/418 - Plant Nutrition & Soil Fertility

Description: Studies the principles of soil fertility and plant nutrition and their application to producing agricultural, horticultural and forestry plant species. Topics include the role of specific inorganic nutrients in plant growth and metabolism, soil and plant diagnostic criteria for nutrient deficiency, mechanisms for uptake and translocation, estimation of soil nutrient supply, and principles of fertiliser use.

Requisites: PREREQ - KLA214 or equiv

Staff: Dr S Shabala, Dr L Sparrow

Teaching Pattern: 26 lectures, 39 hrs practicals

Assessment: 2-hr theory exam (50%), lab report (25%), assignments and notes on specific topics during semester (25%)


Offered in Courses: [ S3A ] [ S3B ] [ S3G ]

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KLA326/426 - Animal Science

Description: Next offered in 2006

Description: Fixed components include introductory molecular and quantitative livestock genetics and breeding, selection principles and practices, genetic evaluation of animals, new genetic technologies in livestock improvement, reproductive physiology and artificial insemination. Variable components include beef, dairy and sheep production and animal nutrition.

Staff: Dr Aduli Malau-Aduli (Coordinator)

Teaching Pattern: 26 lectures, 39 hrs practicals/tutorials

Assessment: 3-hr exam (60%), computer and laboratory practicals, excursions, literature review and reports (40%)

Recommended Texts: The following texts will be held on Library Reserve:
- *Genetics of Livestock Improvement*. J.F. Lasley (Prentice-Hall Publ.)
- *Understanding Animal Breeding*. Richard M. Bourdon

Offered in Courses: [ S3A ]

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KLA329 - Crop Health Management

Description: Studies the principles of management of plant disorders, diseases, insects, weeds and related organisms; biology and ecology of pests and the integration of sound agricultural, forest and other practices with chemical and biological approaches to control; how pesticides work, their application and safe use. The unit also studies the role of abiotic factors in managing crop health.

Staff: Dr A Gracie, Dr GR Allen, Dr CR Wilson, Dr SJ Wilson, Dr P Lane.

Teaching Pattern: 26 lectures or self-learning sessions, 13 practical classes/tutorials/excursions

Assessment: exam (50%), assignments (50%)

Offered in Courses: [ S3A ] [ S3B ] [ S3G ]

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KLA331/431 - Agronomy (Unit not offered in 2006)

Special Note: Next offered in 2007

Description: Examines the current status of crop and pasture research, including developments in breeding, physiology and management. Farming systems research is also examined through a study of topics such as tillage systems, crop rotations, modelling, precision farming, integrated weed management, pasture composition and management, intensive pasture management, use of native pastures and the latest developments in grazing systems. Practical work is mainly based on negotiated project work, individually or in groups.

Staff: Dr NJ Mendham, Dr PA Lane

Teaching Pattern: 26 lectures and 13x3-hr practicals

Assessment: 3-hr theory exam (60%), assignments (40%)

Offered in Courses: [ S3A ] [ S3G ]

KLA346/446 - Agricultural and Forest Pathology

Special Note: Next offered in 2006

Description: Study of plant pathogens economically important to agriculture, horticulture and forestry in Australia. Topics include the biology and pathology of virus and virus-like agents of plant disease, disease induction by phytopathogenic bacteria, forest pathology and
forest health surveillance, host:pathogen interactions and mechanisms of disease resistance, disease epidemiology, forecasting and control.

Staff: Dr CR Wilson, tba

Teaching Pattern: 26 lectures, 13 lab classes/tutorials

Assessment: 3-hr theory exam (50%), practical work and assignments (50%)

Required Texts:

Offered in Courses: [ S3A ] [ S3G ]

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**KLA365/465 - Horticultural Science (Unit not offered in 2006)**

Description: Provides students with a comprehensive examination of horticultural production theory and practice. Sections of the unit deal with horticultural crop management and regulation, post-harvest physiology, stress physiology.

Requisites: PREREQ - KLA214 or * KPA200

Staff: Dr PH Brown, Dr SJ Wilson, Dr S Shabala

Teaching Pattern: 2 lectures, 3-hr practical/excursion/tutorial weekly

Assessment: assignments/practical reports (40%), 3-hr exam (60%)

Offered in Courses: [ S3A ] [ S3G ]

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**KLA378 - Industry Project A**

Special Note: On completion of KLA378 students are awarded an XX result (result shown in another unit), the final result for this unit is awarded on completion KLA379. Students are required to enrol concurrently in KLA378 and KLA379.

Description: Involves the investigation and writing of a major project related to an existing agricultural/horticultural industry or enterprise or related topic. Students choose the area of investigation in consultation with the unit coordinator and then are assigned an academic supervisor with expertise in the chosen area. The project report takes the form of a reading thesis and consists of: a literature review of the industry/enterprise/topic; an analysis of the local situation based on further investigation and an industry placement of two weeks; a specialisation component from research into an area of technical interest; and a business component which consists of working in groups and preparing a business plan. The unit is normally undertaken and completed in the final year of the degree program in accordance with the notes and instructions provided by the unit coordinator.

Requisites: COREQ - KLA379

Staff: Dr PA Lane (Coordinator)

Teaching Pattern: 1-hr tutorial weekly (26 wks), 2 wks industry placement. The unit comprises a large component of self-directed learning and project work equivalent to 5 hours a week for 26 weeks (sem 1 and 2 combined)

Assessment: industry project report (70%), seminar (10%), business plan (20%)

Offered in Courses: [ S3B ]

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**KLA379 - Industry Project B**

Special Note: On completion of KLA379 students are awarded an XX result (result shown in another unit), the final result for this unit is awarded on completion KLA379. Students are required to enrol concurrently in KLA378 and KLA379.

Description: Involves the investigation and writing of a major project related to an existing agricultural/horticultural industry or enterprise or related topic. Students choose the area of investigation in consultation with the unit coordinator and then are assigned an academic supervisor with expertise in the chosen area. The project report takes the form of a reading thesis and consists of: a literature review of the industry/enterprise/topic; an analysis of the local situation based on further investigation and an industry placement of two weeks; a specialisation component from research into an area of technical interest; and a business component which consists of working in groups and preparing a business plan. The unit is normally undertaken and completed in the final year of the degree program in accordance with the notes and instructions provided by the unit coordinator.

Requisites: COREQ - KLA378

Staff: Dr PA Lane (Coordinator)

Teaching Pattern: 1-hr tutorial weekly (26 wks), 2 wks industry placement. The unit comprises a large component of self-directed learning and project work equivalent to 5 hours a week for 26 weeks (sem 1 and 2 combined)

Assessment: industry project report (70%), seminar (10%), business plan (20%)

Offered in Courses: [ S3B ]

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**KLA381/481 - Soil and Land Resources**

Special Note: Next offered in 2006
KLA394/494 - Applied Food Safety Microbiology

Special Note: year-3 students use enrolment code *KLA394. The unit is available to students undertaking BSc and BAgSc degree courses. *KLA396 may form part of a microbiology major in the BSc degree course, together with CJA308, KLA 394, KLA387, KLA446 and/or KLA398.

Description: Food safety management, particularly for microbial hazards, is undergoing revolutionary change internationally. This unit, which complements Food Microbiology (KLA 396/KLA 496) will consider the cause and nature of physical, chemical and microbial foodborne hazards; technologies for detection, quantification and elimination of hazards in foods; provide theoretical and applied instruction on contemporary methods of food safety management, with particular emphasis on quantitation, probability and mathematical modelling approaches (e.g. predictive microbiology, statistical sampling methods, risk assessment, stochastic modelling approaches). Greater emphasis is given to control of microbial hazards. The unit considers how these tools and knowledge can be synthesised to assist in food safety regulation setting and for the interpretation of food safety risk associated with particular foods and hazards. The unit is offered only in 'external delivery' mode.

Requisites: PREREQ - Any of: KLA210, CBA260, CBA265, KQA207 or CXA241 or equivalent

Staff: Dr. T Ross (co-coordinator), others from Australian Food Safety Centre of Excellence (AFSCoE) appointments.

Teaching Pattern: Semester 1, external delivery via WWW (Vista) and CD-based multi-media lessons, equivalent to 26 lectures plus 40 hour of independent project and assignment work including a food safety risk assessment using the data sources, techniques, software and approaches presented in the ‘lectures’. The project will involve strong interaction with the tutor, and be conducted in stages.

Assessment: 3-hr exam (60%), continuous assessment (40%)

Required Texts: Reader to be prepared

Recommended Texts: TBA

Offered in Courses: [ S3A ] [ S3G ] [ S7E ] [ S7P ] [ S9A ]

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KLA396/496 - Food Microbiology

Special Note: year-3 students use enrolment code *KLA396. The unit is available to students undertaking BSc and BAgSc degree courses. *KLA396 may form part of a microbiology major in the BSc degree course, together with CJA308 and , KLA 394, KLA387, KLA446 and/or KLA398.

Description: Considers the role of microorganisms in the production, deterioration and safety of foods, from both ecological and physiological perspectives, including the effect of temperature, pH, water activity and other factors affecting the growth and decline of microbial cells and populations. Specific topics include: microbial fermentations and biotechnological applications for foods; spoilage processes; microbial hazards associated with foods and their physiology; and current approaches to food safety assurance including HACCP, risk assessment and predictive microbiology.

The practical component includes basic food microbiology techniques, visits to food processing factories, and supervised small group research projects.

Requisites: PREREQ - Any of: KLA210, CBA260, CBA265, KQA207 or CXA241

Staff: Dr T Ross (Coordinator), Mrs L Maddock and researchers from the Centre for Food Safety and Quality

Teaching Pattern: 26 lectures, 13 lab classes/tutorials, 8 tutorials

Assessment: 3-hr theory exam (60%), practical components (30%) and essay (10%).


Offered in Courses: [ S3A ] [ S3G ] [ S7E ] [ S7P ] [ S9A ]

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### KLA398/498 - Microbial Ecology and Evolution

**Special Note:** year-3 students use enrolment code KLA398. The unit is available to students undertaking BSc, BAgSc, and BBiotech degree courses. KLA398 may form part of a microbiology major in the BSc degree, together with options available in medical microbiology CJA308, food microbiology KLA396, KLA394 and agricultural and forest pathology KLA346.

**Description:** The significance of microorganisms in the environment is examined with emphasis on the global cycles of nitrogen, carbon, phosphorus and iron in both terrestrial and marine environments. Other topics include interactions of plants and microorganisms, the biodegradation of organic compounds, bioremediation of contaminated land and microbial evolution. Small-group projects and tutorials will form part of the unit.

**Requisites:** PREREQ - Any of: KLA210, CBA260, CBA265, KQA207 or CXA241

**Staff:** Dr MA Line and Ms L Maddock

**Teaching Pattern:** 26 lectures, 13 lab classes/tutorials

**Assessment:** 3-hr theory exam (70%), project and practical reports (30%)

**Offered in Courses:** [ S3A ] [ S3G ] [ S3V ] [ S3Y ]

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### KLA402/403 - Biotechnology Honours in Microbiology

**Description:** Students are expected to undertake advanced level, formal study as directed by the supervisor; they are required to present a reading thesis on an approved topic as described under the course structure. The thesis component will represent 87.5% or 100% depending on the student's background. If the former, the balance will be made up of a level 3 unit determined by the supervisor and forming part of the final assessment. The School/Discipline will provide specific details on assessment procedure and criteria used.

**Requisites:** PREREQ - Completion of BBiotech, including KLA210 or equivalent and at least one level 3 microbiology unit.

**Staff:** ssoc. Professor S Kirov, Dr M Line Dr T Ross

**Assessment:** Research thesis: 100% or 87.5%

**Offered in Courses:** [ S4V ]

### KLA404 - Biotechnology Honours in Microbiology (F/T)

**Description:** For details see KLA402/403

### Unit Delivery Information:

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<tr>
<th>Unit</th>
<th>Weight</th>
<th>Sem 1</th>
<th>Sem 2</th>
<th>Full Year</th>
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### KLA405 - Research, Development and Extension Methods

**Description:** Enables students to plan and complete scientific investigations. Major issues include preparation of project proposals, experimental design, basic statistical methods and relevant computing tools. Effective presentation of research findings, as seminars and papers, is also included. The unit also introduces students to planning scientific development and extension programs, extension methods and evaluation of extension programs.

**Requisites:** PREREQ - KMA153 or equiv

**Staff:** Dr SJ Wilson (Coordinator), Prof F Vanclay

**Teaching Pattern:** 39 lectures, 39 hrs computing lab sessions/seminars/group activities

**Assessment:** 2-hr exam (70%), assignments (30%)


**Offered in Courses:** [ S3A ]

### Unit Delivery Information:

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### KLA408 - Biotechnology Honours in Microbiology

**Description:** For details see KLA402/403

### Unit Delivery Information:

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### KLA409 - Biotechnology Honours in Microbiology (P/T)

**Description:** For details see KLA402/403

### Unit Delivery Information:
**KLA415/416 - Microbiology 4 (Honours) (Science)**

**Description:** Students are expected to undertake advanced level, formal study of selected microbiology topics or other relevant units as directed by the supervisor; they are required to present a reading thesis on their approved topic and carry out independent research as directed by the supervisor.

**Requisites:** PREREQ - BSc with major in Microbiology (or approved alternative background)

**Staff:** Dr MA Line, Dr T Ross

**Assessment:** research thesis (100%)

**Offered in Courses:** [ S4E ]

**KLA422 - Microbiology 4 (Honours) (Science) F/T**

**Description:** For details see KLA415/416

**Unit Delivery Information:**

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**KLA423 - Microbiology 4 (Honours) (Science) P/T**

**Description:** For details see KLA415/416

**Unit Delivery Information:**

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**KLA424 - Microbiology 4 (Honours) (Science) P/T**

**Description:** For details see KLA415/416

**Unit Delivery Information:**

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**KLA442 - Horticultural Production Systems (Unit not offered in 2006)**

**Description:** See KLA242/342.

**Offered in Courses:**

**KLA454 - Insect Diversity and Function (Unit not offered in 2006)**

**Description:** See KLA254/354.

**Offered in Courses:**

**KLA455/456 - Marine, Freshwater and Antarctic Biology (Honours)**

**Description:** Have the same objectives as KPA450/451.

**Staff:** Prof TA McMeekin, Dr MA Line, Dr T Ross

**KLA457 - Marine, Freshwater and Antarctic Biology (Honours) F/T**

**Description:** For details see KLA455/456

**Unit Delivery Information:**

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**KLA458 - Marine, Freshwater and Antarctic Biology (Honours) P/T**

**Description:** For details see KLA455/456

**Unit Delivery Information:**

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**KLA459 - Marine, Freshwater and Antarctic Biology (Honours)**

**Description:** For details see KLA455/456

**Unit Delivery Information:**

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**KLA471/72/73/74/75 - Bachelor of Applied Science in Agriculture with Honours**

**Special Note:** All staff of the School of Agricultural Science including the Tasmanian Institute for Agricultural Research may act as
supervisors

Description: Students who have completed a BAppSc(Agr), BSc or equivalent degree will be permitted to enrol in honours in Applied Science in Agriculture provided (a) they have achieved an adequate standard, normally a credit average in Group 3 units, and (b) that a suitable project and supervisor are available.

The honours program consists of a research project (100%) and following consultation with the supervisor and approval by the Head of School may also include a coursework component to a maximum of 25% weighting. Students must prepare a detailed research proposal at an early stage of their project work, present a seminar on the research undertaken and submit a thesis on completion of their project.

Requisites: - Some requisites may differ unit to unit.

KLA471:
KLA472:
KLA473:
KLA474:
KLA475: PREREQ - KLA474

Assessment: Assessment will be based on examination of the research thesis

Unit Delivery Information:

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KLA483 - Literature Review

Special Note: subject to degree coordinator or Head of School approval

Description: For details of this unit, contact the School.

Staff: Dr PA Lane

Offered in Courses: [ S3A ]

Unit Delivery Information:

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KLA487 - Introduction to Plant Diseases

Special:

Description: See KLA287/387.

Assessment:

Recommended Texts: see KLA287/387

Unit Delivery Information:

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KLA490 - Agricultural Science Honours Thesis

Description: The Honours thesis is to be completed in accordance with the notes and instructions available from the degree coordinator, and submitted to the Honours coordinator by the first week in December.

Requisites: PREREQ - by invitation only

Staff: all Agricultural Science teaching staff

Assessment: thesis examination

Offered in Courses: [ S4A ]

Unit Delivery Information:

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KLA500 - Research Project (Pass)/(Honours)

Special Note: offered outside Hobart subject to availability of supervision

Description: KLA500 is related to the Research projects for the Graduate Diploma of Agricultural Science or the Graduate Diploma of Agricultural Science with Honours.

Offered in Courses: [ S6A ] [ S6Y ]

Unit Delivery Information:

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KLA515/516 - Graduate Diploma in Science with Honours, specialising in Microbiology

Description: Has the same objectives as KLA415/416. Full time/part time ‘umbrella’ code.

Assessment: thesis and set unit examination.
Offered in Courses: [ S6X ]

**KLA517 - Graduate Diploma in Science with Honours, specialising in Medical Microbiology**

**Description:**

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**KLA520/521 - Graduate Diploma of Agricultural Science**

**Description:** All candidates, Pass and Honours, enrolling in the Graduate Diploma of Agricultural Science, use these 'umbrella' codes.

**KLA522 - Graduate Diploma of Agricultural Science F/T**

**Description:** For details see KLA520/521

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**KLA523 - Graduate Diploma of Agricultural Science P/T**

**Description:** For details see KLA520/521

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**KLA524 - Graduate Diploma of Agricultural Science P/T**

**Description:** For details see KLA520/521

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**KLA525 - Graduate Diploma in Science with Honours, specialising in Microbiology F/T**

**Description:** For details see KLA515/516

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**KLA526 - Graduate Diploma in Science with Honours, specialising in Microbiology P/T**

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**KLA527 - Graduate Diploma in Science with Honours, specialising in Microbiology P/T**

**Description:** For details see KLA515/516

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**KLA530 - Graduate Diploma of Agricultural Science with Honours**

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**KLA531 - Graduate Diploma of Agricultural Science with Honours**

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KLA802 - Master of Applied Science, Project

Description:

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KLA803 - Master of Applied Science, Project

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KLA804/05 - Master of Applied Science, Thesis

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Unit Delivery Information:

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KLA806 - Master of Applied Science, Thesis

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KLA807 - Master of Applied Science, Thesis

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KLA808 - Master of Applied Science, Thesis

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KMA003 - Mathematics Foundation Unit

Special Note: The dates for 2006 are January 5th to February 16th inclusive Apply directly to the School - email: Karen.Bradford@utas.edu.au or telephone 6226 2439

Description: The Mathematics Enabling Program is a flexible summer school unit run from the North-West Centre in Burnie. The program is for students who are planning to enrol at the University of Tasmania in a first-year unit in commerce, computing, science or engineering that requires a mathematics prerequisite.

The unit commences with a half-day introductory session at Burnie and Hobart, after which it is run externally by weekly video meetings, tutorials, email and telephone. The lecturer is available at specific times to discuss queries or problems students may encounter.

There are no entrance pre-requisites to study the Mathematics Bridging Program, however proficiency in year 10 mathematics is strongly advised. The program is available to university and non-university students even if you do not intend to enrol in a university course.

There will be a final examination for the unit, assessed on a pass/fail basis, therefore grades of UP (ungraded pass) and NN (failure) will be awarded. Students who successfully complete the unit with a grade of Ungraded Pass will be eligible for enrolment in any mathematics units taught at the University with MME5C Mathematical Methods 5 as a prerequisite. In addition, students who successfully complete the program will qualify for entry to the Bachelor of Science (S3G) and the Bachelor of Natural Environment & Wilderness Studies (S3T).

For more details, contact the School of Mathematics & Physics on (03) 6226 2439.

Successful completion guarantees a place

Fees
The course is free for Australian citizens and Australian permanent residents who are not required to pay any fees to the University or to

University of Tasmania, Unit Guide 2006  www.utas.edu.au/units/ 655
contribute towards the Higher Education Contribution Scheme (HECS).

**Staff:** Mr N Windsor

**Teaching Pattern:** half-day introductory session at NW Centre and Hobart; thereafter externally by weekly video meeting, tutorials, email and telephone.

**Assessment:** final exam assessed on a pass/fail basis

**Required Texts:** Books supplied

**Offered in Courses:** [ S0F ]

### Unit Delivery Information:

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**KMA152 - Calculus and Applications 1A**

**Description:** Provides fundamental tools of one variable calculus that are essential in the application of mathematics in science and engineering. Review of basic functions. Numerical sequences and series. Calculus of one variable: differentiation, differentiation techniques, implicit differentiation, upper and lower sums, integration, proper and improper, Fundamental Theorem of Calculus. Applications, including optimisation (maximum and minimum problems) and rates of change. Introduction to vectors and applications, vector spaces and dot products. Introduction to Mathematica.

**Requisites:** PREREQ - MME5C or MSP5C or KMA003, or equiv with approval from HoS MEXCL - KMA150, KMA156, KMA171, KMA157 and KNT150

**Staff:** Assoc Prof P Trotter

**Teaching Pattern:** 3x1-hr lectures, 1-hr tutorial, 1-hr lab session weekly

**Assessment:** 3-hr exam (80%), assignments (20%)


**Offered in Courses:** [ S3G ] [ N3H ] [ OCS ] [ S3I ]

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**KMA153 - Data Handling and Statistics 1**

**Description:** Introduces the management and interpretation of quantitative information. A 'hands-on' course, developed using data which is drawn from disciplines of relevance to the students. Topics include: collecting, processing and presenting quantitative information; descriptive statistics for summarising data; data exploration techniques; the role of chance; sampling; commonly used statistical methods. Interpreting statistical information; mathematical skills; the concept of modelling; use of computers and spreadsheets in mathematical and statistical applications.

**Requisites:** PREREQ - MAP5C or MME5C or MSP5C or KMA003, or equiv with approval from HoS MEXCL - KMA165

**Staff:** Dr S Wughterspoon (Hbt), Dr D Fitzgerald (Ltn)

**Teaching Pattern:** equiv to 2x1-hr lectures, 2x1-hr tutorial, 1-hr lab session weekly

**Assessment:** assignments and class tests

**Offered in Courses:** [ C3U ] [ M3F ] [ N3H ] [ S2B ] [ S3A ] [ S3G ] [ S3K ] [ S3T ] [ OCS ] [ S3Z ] [ S3Y ] [ S3I ]

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**KMA154 - Calculus and Applications 1B**


**Requisites:** PREREQ - (KMA152 or KMA153 with permission of HoS or KMA171) and (MME5C or MSP5C or KMA003, or equiv with approval from HoS) MEXCL - KMA150, KMA156, KMA172, KNT150

**Staff:** Assoc Prof P Trotter, Dr B Gardner

**Teaching Pattern:** 3x1-hr lectures, 1-hr tutorial, 1-hr lab session weekly

**Assessment:** 3-hr examination (80%), assignments (20%)


**Offered in Courses:** [ S3G ] [ OCS ] [ S3I ]

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**KMA155 - Mathematics for Computer Science 1**
Units Coded K – Faculty of Science, Engineering & Technology

Description: The aim of the unit in Mathematics for Computer Science is to discuss some of the mathematical processes that underlie the science and technology specific to the computer age. This provides a treatment of discrete mathematics to support the programs of students taking a first course in computer science or planning to study such areas of advanced mathematics as linear algebra, abstract algebra and number theory. Discrete mathematical structures such as sets, relations, functions and Boolean algebras are discussed with many examples. The basic ideas of logic are introduced, which provide, among other things, the theoretical basis for much of computer science.

Requisites: PREREQ - MAPS5C or MME5C or MSP5C or KMA003, or equiv with approval from Head of School

Staff: Dr K Dharmadasa

Teaching Pattern: 3x1-hr lectures, 1-hr tutorial

Assessment: 3x1-hr class tests (75%), assignments (25%)

Offered in Courses: [ S3G ] [ OCS ] [ S3I ]

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KMA171 - Mathematics I

Special Note: Bachelor of Science students may enrol in this unit subject to approval

Description: This first year mathematics unit provides a broad introduction to the fundamental mathematical operations and methods (differentiation, integration and partial differentiation) and mathematical objects (complex numbers) needed in engineering and science. This unit lays a solid foundation for more advanced mathematics undertaken in semester two and higher years. Studies cover the basic algebra of complex numbers- cartesian form, polar form, De Moivre's theorem and powers and roots of complex numbers. Differential calculus - limits, elementary functions and their properties, graphs and derivatives (polynomials, rational functions, circular functions, exponential and logarithmic functions, hyperbolic functions, inverse functions), product, quotient and chain rules and implicit differentiation. Applications to maxima/minima, rate problems, errors and approximation and Newton's method. Integral calculus - substitution techniques, integration by parts, partial fractions, use of standard tables of integrals and numerical integration such as Simpson's rule. Applications to work done, areas and volumes, introduction to partial differentiation and the chain rule.

Requisites: PREREQ - MME5C MEXCL - KMA150, KMA152, KMA156, KNT150

Staff: from the Australian Maritime College

Teaching Pattern: 3 hrs lectures, 1 hr tutorial weekly

Assessment: 3-hr exam (70%), regular written work (30%)


Offered in Courses: [ N3H ] [ S3G ] [ OCS ] [ S3Z ] [ S3I ]

Unit Delivery Information:

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KMA172 - Mathematics II

Special Note: Bachelor of Science students may enrol in this unit subject to approval

Description: Provides an understanding of: linear algebra - solutions of systems of linear equations by Gaussian elimination and the inverse matrix; determinants. Cramer's rule, eigenvalues and eigenvectors and applications to matrices. First order linear, non-linear and separable differential equations; second order homogeneous and non-homogeneous differential equations, applications. Euler's method. Infinite series- test for convergence for an infinite series using the comparison test, limit comparison test, test for divergence, ratio rest, alternating series test, absolute convergence theorem, radius of convergence, Taylor polynomials, power series; Vectors including dot products, cross products, scalar and vector triple products, applications to lines and planes. Use of modern mathematics software packages, such as Maple as an aid for solving less tactile problems in calculus, linear algebra and modelling.

Requisites: PREREQ - KMA171 MEXCL - KMA154, KMA150, KMA156, KNT150

Staff: from the Australian Maritime College

Teaching Pattern: 3 hrs lectures, 1 hr tutorial weekly

Assessment: 3-hr Exam (70%), regular written work (30%)

Required Texts: Stewart J, Calculus 5th Edn. ISBN 053474080


Hill R, Elementary Linear Algebra (with Applications), ISBN 0030105479

Offered in Courses: [ S3G ] [ S3Z ] [ S3I ]

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KMA182 - Advanced Calculus and Applications A

Description: For students who have achieved a high level qualification in pre-tertiary mathematics, preparing them for subsequent studies in analysis-based mathematics and other disciplines requiring a solid grounding in mathematical skills of both a theoretical and practical nature. Studies include those prescribed for KMA152. There will be a special 'problem solving' session in each week.

Requisites: PREREQ - MSP5C or MME5C or KMA003 or equivalent with approval from Head of School MEXCL - KMA150,KMA152,KMA154,KMA156,KMA157,KMA171,KMA172 and KNT150

University of Tasmania, Unit Guide 2006 www.utas.edu.au/units/
KMA184 - Advanced Calculus and Applications B

Description: For students who have achieved a high level qualification in pre-tertiary mathematics, preparing them for subsequent studies in analysis-based mathematics and other disciplines requiring a solid grounding in mathematical skills of both a theoretical and practical nature. Studies include those prescribed for KMA154. There will be a special ‘problem solving’ session in each week.

Requisites: PREREQ - MSP5C or MME5C or KMA003 or equivalent with approval from HoS MEXCL - KMA150, KMA154, KMA156, KMA157, KMA171, KMA172 and KNT150

Staff: Dr B Gardner, Assoc Prof P Trotter

Teaching Pattern: 3x1hr lectures, 1hr tutorial, 1hr lab weekly

Assessment: 3hr exam (80%), assignments (20%)


Offered in Courses: [ S3G ]

Unit Delivery Information:

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KMA215/315 - Real and Complex Analysis 2


Requisites: PREREQ - KMA252

Staff: Assoc Prof P Trotter, Dr K Dharmadasa

Teaching Pattern: 3x1-hr lectures, 1-hr tutorial weekly

Assessment: 2-hr exam (70%), internal assessment (30%)

Offered in Courses: [ S3G ] [ OCS ] [ S3I ]

Unit Delivery Information:

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KMA251 - Algebra and Applications 2

Description: A first unit in modern algebras. An introduction to algebraic structures, including groups, rings, lattices and Boolean algebra. Applications of algebra, including logic, switching circuits, coding and cryptography.

Requisites: PREREQ - any yr-1 maths unit

Staff: Dr B Gardner, Assoc Prof P Trotter

Teaching Pattern: 3x1-hr lectures, 1-hr tutorial weekly

Assessment: 2-hr exam (80%), assignments (20%)

Offered in Courses: [ S3G ] [ OC ] [ S3I ]

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KMA252 - Calculus and Applications 2


Requisites: PREREQ - one of KMA150, KMA154, KMA156, KMA172, KNT150 (or one of KMA152, KMA171 with permission of HoS) MEXCL - KMA220, KME271

Staff: Dr M Brideson

Teaching Pattern: 3x1-hr lectures, 1-hr tutorial weekly

Assessment: 2-hr exam (80%), assignments (20%)


Offered in Courses: [ S3G ] [ S3G ] [ OCS ] [ S3Y ] [ S3I ]

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**KMA253 - Data Handling and Statistics 2**

**Description:** Extension of the themes introduced in KMA153 by examination of problems involving several treatments or several explanatory variables. The unit covers properties of designs and tests; regression; multiple comparisons and analysis of variance; and an introduction to principles of statistical modelling. Students are expected to use and interpret the output of a contemporary statistical package, appreciate some problems of real data from observational studies and carry out analyses and write reports directed towards the concerns of a given experiment or study.

**Requisites:** PREREQ - one of KMA150, KMA152, KMA153, KMA154, KMA171, KMA172, KNT150

**Staff:** Dr D FitzGerald

**Teaching Pattern:** 2x1-hr lectures, 1-hr tutorial, 2x1-hr lab sessions weekly

**Assessment:** assignments and class tests


**Offered in Courses:** [ S3G ] [ S3T ] [ S3V ] [ OCS ] [ S3I ]

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**KMA254 - Differential Equations, Linear Algebra & Applications 2**


**Requisites:** PREREQ - one of KMA150, KMA156 (or KMA152 with permission of HoS)

**Staff:** Prof LK Forbes

**Teaching Pattern:** 3x1-hr lectures, 1-hr tutorial, 1 computer lab weekly

**Assessment:** 2-hr exam (70%), internal assessment (30%)

**Offered in Courses:** [ S3G ] [ OCS ] [ S3Y ] [ S3I ]

Unit Delivery Information:

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**KMA255 - Operations Research 2**

**Description:** A first unit in the major non-calculus methods of applied mathematics. Modelling and optimisation, decision analysis, linear programming, network flow models. Project scheduling, maintenance and inventory management.

**Requisites:** PREREQ - any Yr-1 Maths unit or with permission of HoS

**Staff:** Dr D Fitzgerald

**Teaching Pattern:** 3x1-hr lectures, 1-hr tutorial, 1-hr lab session weekly

**Assessment:** 2-hr exam (70%), assignments (30%)

**Offered in Courses:** [ S3G ] [ OCS ] [ S3I ]

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**KMA271 - Mathematics III**

**Special Note:** Bachelor of Science students may enrol in this unit subject to approval

**Description:** We commence with a development of the basic ideas of year one mathematics in the area of vector algebra and the solutions of ordinary differential equations to second order.

Attention is given to Laplace transforms and their operational theorems, transforms of derivatives, solution of ordinary differential equations with constant coefficients and solutions of systems of ordinary differential equations with constant coefficients. Special functions such as the Heaviside and Dirac functions, impulse response and convolution are also applied to ordinary differential equations.

The basic partial differential equations of heat conduction, wave propagation and potential theory that we discuss are associated with engineering applications related to heat and fluid flow. The separation of variable technique is employed. Boundary-value problems, eigenvalues and eigenfunctions are discussed in detail.

The calculus of several variables section is split into two sections: vector differential calculus, involving gradient, divergence, curl, scalar...
potential and vector integral calculus involving multiple integrals, surface integrals, methods, relationships. Applications to moments of inertia, hydrodynamic and electromagnetic fields.

Requisites: PREREQ - KMA172 or KNT150 MEXCL - KMA254, KNT227

Staff: from the Australian Maritime College

Teaching Pattern: 3x1 hr lectures, 1 hr tutorial weekly.

Assessment: 3-hr Exam (70%), regular written work (30%)


Offered in Courses: [ S3G ] [ OCS ] [ S3Z ]

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KMA353 - Data Handling and Statistics 3

Description: Extension of the concepts, methods and tools introduced in KMA253. A 'hands-on' course in which the emphasis is on the development of skills in the selection and application of statistical methods and the presentation of statistical results. Statistical methodology covered in the course will be selected from the following: analysis of variance applied in the area of experimental designs; generalised linear methodology; multivariate statistical methodology; methods for analysing frequency data; methodology for studying data collected over time. Expertise with statistical computing packages will be extended.

Requisites: PREREQ - KMA253

Staff: Dr S Wotherspoon

Teaching Pattern: 3x1-hr lectures, 1-hr tutorial, 1-hr lab session weekly

Assessment: assignments and class tests

Offered in Courses: [ S3G ] [ OC ] [ S3Y ] [ S3I ]

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KMA354 - Partial Differential Equations, Applications and Methods 3


Requisites: PREREQ - KMA252

Staff: Dr M. Brideson

Teaching Pattern: 3x1-hr lectures, 1-hr tutorial, 1-hr lab session weekly

Assessment: to be discussed with students, includes 1x2-hr exam

Offered in Courses: [ S3G ] [ OCS ] [ S3Y ] [ S3I ]

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KMA355 - Operations Research 3

Description: Introduction to Dynamic Programming and Probabilistic Operations Research Models, with the focus on developing the ability to solve practical problems. Topics from: Deterministic Dynamic Programming, Probability, Probabilistic Dynamic Programming and Queuing Theory.

Requisites: PREREQ - any Yr-2 Maths unit

Staff: Dr M O'Reilly

Teaching Pattern: 3x1-hr lectures, 1-hr tutorial, 1-hr lab session weekly

Assessment: 2-hr exam (80%), assignments (20%)

Offered in Courses: [ S3G ] [ OCS ] [ S3Y ] [ S3I ]

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KMA356 - Principles of Statistics 3

Description: Topics from: foundations of statistics, maximum likelihood, likelihood ratio tests, Bayesian methods, sufficiency, general linear models and least squares, generalised linear models, statistical computing, decision theory.

Requisites: PREREQ - one of KMA253, KMA252

Staff: Dr S Wotherspoon

Teaching Pattern: 3x1-hr lectures, 1-hr tutorial, 1-hr lab session weekly

Assessment: 3-hr exam (70%), assignments (30%)

Offered in Courses: [ S3G ] [ OC ] [ S3Y ] [ S3I ]

Unit Delivery Information:
KMA356 - Topics in Advanced Mathematics 3

Description: Selected topics from geometry, combinatorics, set theory, topology, number theory and history of mathematics.  
Requisites: PREREQ - any Yr-2 Maths unit  
Staff:  Dr B Gardner  
Teaching Pattern: 3x1-hr lectures, 1-hr tutorial, 1-hr lab session weekly  
Assessment: 3-hr exam (70%), assignments (30%)  
Offered in Courses: [ S3G ] [ OC ] [ S3Y ] [ S3I ]

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KMA400/401 - Mathematics Honours

Description: The honours program extends the knowledge of students to the frontiers of research through coursework in several areas of mathematics. Students are prepared for a career in mathematics and are expected to gain an ability and understanding of the literature and an ability to express that understanding in written form. Units are offered in pure and applied mathematics and statistics. Students are required to write a thesis under the direction of a supervisor. The thesis is usually a survey. Students start their thesis work on the first Monday in February and should complete it by the first week in September.

Requisites: PREREQ - BSc with major in mathematics or equiv  
Teaching Pattern: equiv 6-8x1-hr lectures weekly, plus thesis work  
Assessment: 40% thesis and 60% coursework or (with permission of HoS) 20% thesis and 80% coursework  
Offered in Courses: [ S4E ] [ S6X ]

KMA402 - Complexity & Intractability

Description: An honours unit for students with a background in mathematics or computing theory. It deals with the time complexity of algorithms and in particular with the P=NP problem.

Requisites: PREREQ - a major in mathematics or computing  
Staff: Assoc Prof P Trotter  
Teaching Pattern: 2 x 1 hr lectures weekly  
Assessment: 2 hour exam (70%), internal assessment (30%)  
Offered in Courses: [ S4E ] [ S4D ]

Unit Delivery Information:

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KMA403 - Automata

Description: This is an honours unit for students with a background in mathematics or computing theory. It deals with the theory of automata and the mathematics behind the theory.

Requisites: PREREQ - A major in mathematics or computing. COREQ - Any year 3 mathematics unit.  
Staff: A.Prof. P. Trotter  
Teaching Pattern: 2 x 1 hour lectures per week  
Assessment: 2 hour exam (70%), internal assessment (30%).  
Offered in Courses: [ S4E ] [ S4D ] [ S7P ]

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KMA408 - Mathematics Honours F/T

Description: For details see KMA400/401

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KMA409 - Mathematics Honours P/T

Description: For details see KMA400/401

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KMA410 - Mathematics Honours P/T

Description: For details see KMA400/401

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KMA500/501 - Graduate Diploma in Science with Honours, specialising in Mathematics

Description: Has the same objectives as KMA400/401. Full time/part time 'umbrella' code.

Offered in Courses: [ S6X ] [ OCS ]

KMA502 - Graduate Diploma in Science with Honours, specialising in Mathematics F/T

Description: For details see KMA500/501

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KMA503 - Graduate Diploma in Science with Honours, specialising in Mathematics P/T

Description: For details see KMA500/501

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KMA504 - Graduate Diploma in Science with Honours, specialising in Mathematics P/T

Description: For details see KMA500/501

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KMA506/07 - Graduate Diploma in Science, specialising in Mathematics (Computational Mathematics)

Special Note: Contact Mathematics Post Graduate Co-ordinator before enrolling.

Description: Enrolment umbrella codes for students enrolled in the Graduate Diploma in Science, specialising in Mathematics. A program of study, consisting of Group 2, Group 3 and Honours units plus a written project, will be determined by the School of Mathematics and Physics.

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KMA508 - Graduate Diploma in Science, specialising in Mathematics (Computational Mathematics)

Special Note: Contact Mathematics Post Graduate Co-ordinator before enrolling.

Description: Enrolment umbrella code for students enrolled in the Graduate Diploma in Science, specialising in Mathematics. A program of study, consisting of Group 2, Group 3 and Honours units plus a written project, will be determined by the School of Mathematics and Physics.

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KMA509 - Graduate Diploma in Science, specialising in Mathematics (Computational Mathematics)

Special Note: Contact Mathematics Post Graduate Co-ordinator before enrolling.

Description: Enrolment umbrella code for students enrolled in the Graduate Diploma in Science, specialising in Mathematics. A program of study, consisting of Group 2, Group 3 and Honours units plus a written project, will be determined by the School of Mathematics and Physics.

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**KMA511/12 - Graduate Diploma in Science, specialising in Mathematics (Operations Research)**

**Special Note:** Contact Mathematics Post Graduate Co-ordinator before enrolling.

**Description:** Enrolment umbrella codes for students enrolled in the Graduate Diploma in Science, specialising in Operations Research. A program of study, consisting of Group 2, Group 3 and Honours units plus a written project, will be determined by the School of Mathematics and Physics.

**KMA513 - Graduate Diploma in Science, specialising in Mathematics (Operations Research)**

**Special Note:** Contact Mathematics Post Graduate Co-ordinator before enrolling.

**Description:** Enrolment umbrella code for students enrolled in the Graduate Diploma in Science, specialising in Operations Research. A program of study, consisting of Group 2, Group 3 and Honours units plus a written project, will be determined by the School of Mathematics and Physics.

**KMA514 - Graduate Diploma in Science, specialising in Mathematics (Operations Research)**

**Special Note:** Contact Mathematics Post Graduate Co-ordinator before enrolling.

**Description:** Enrolment umbrella code for students enrolled in the Graduate Diploma in Science, specialising in Operations Research. A program of study, consisting of Group 2, Group 3 and Honours units plus a written project, will be determined by the School of Mathematics and Physics.

**KMA515 - Graduate Diploma in Science, specialising in Mathematics (Operations Research)**

**Special Note:** Contact Mathematics Post Graduate Co-ordinator before enrolling.

**Description:** Enrolment umbrella code for students enrolled in the Graduate Diploma in Science, specialising in Operations Research. A program of study, consisting of Group 2, Group 3 and Honours units plus a written project, will be determined by the School of Mathematics and Physics.

**KMA516/17 - Graduate Diploma in Science, specialising in Mathematics (Statistical Applications)**

**Special Note:** Contact Mathematics Post Graduate Co-ordinator before enrolling.

**Description:** Enrolment umbrella codes for students enrolled in the Graduate Diploma in Science, specialising in Mathematics. A program of study, consisting of Group 2, Group 3 and Honours units plus a written project, will be determined by the School of Mathematics and Physics.

**KMA518 - Graduate Diploma in Science, specialising in Mathematics (Statistical Applications)**

**Special Note:** Contact Mathematics Post Graduate Co-ordinator before enrolling.

**Description:** Enrolment umbrella code for students enrolled in the Graduate Diploma in Science, specialising in Mathematics. A program of study, consisting of Group 2, Group 3 and Honours units plus a written project, will be determined by the School of Mathematics and Physics.

**KMA519 - Graduate Diploma in Science, specialising in Mathematics (Statistical Applications)**

**Special Note:** Contact Mathematics Post Graduate Co-ordinator before enrolling.

**Description:** Enrolment umbrella code for students enrolled in the Graduate Diploma in Science, specialising in Mathematics. A program of study, consisting of Group 2, Group 3 and Honours units plus a written project, will be determined by the School of Mathematics and Physics.

**KMA520 - Graduate Diploma in Science, specialising in Mathematics (Statistical Mathematics)**

**Special Note:** Contact Mathematics Post Graduate Co-ordinator before enrolling.

**Description:** Enrolment umbrella code for students enrolled in the Graduate Diploma in Science, specialising in Mathematics. A program of...
study, consisting of Group 2, Group 3 and Honours units plus a written project, will be determined by the School of Mathematics and Physics.

### Unit Delivery Information

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#### KMA581 - Project A

**Description:** Is for students enrolled in the Graduate Diploma in Science, specialising in Statistical Applications: analysis of data and report. For full details contact the School of Mathematics and Physics.

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#### KMA582 - Project B

**Description:** Is for students enrolled in the Graduate Diploma in Science, specialising in Statistical Applications: analysis of data and report. For full details contact the School of Mathematics and Physics.

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#### KMA583 - Project C

**Description:** Is for students enrolled in the Graduate Diploma in Science, specialising in Statistical Applications: analysis of data and report. For full details contact the School of Mathematics and Physics.

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#### KMA584 - Project D

**Description:** Is for students enrolled in the Graduate Diploma in Science, specialising in Statistical Applications: analysis of data and report. For full details contact the School of Mathematics and Physics.

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#### KMA586 - Mathematics 4 unit

**Description:** Students enrolled in the Graduate Diploma in Science, specialising in Computational Mathematics, course who undertake Mathematics 4 units use this code if enrolling in a 12.5% single unit.

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#### KMA589 - Mathematics 4 unit

**Description:** Students enrolled in the Graduate Diploma in Science, specialising in Computational Mathematics, course who undertake Mathematics 4 units use this code if enrolling in units with a total weight of 25%.

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#### KMA802 - Master of Applied Science, Project

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#### KMA803 - Master of Applied Science, Project

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**KMA804/05 - Master of Applied Science, Thesis**

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**KMA806 - Master of Applied Science, Thesis**

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**KMA807 - Master of Applied Science, Thesis**

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**KMA808 - Master of Applied Science, Thesis**

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**KME271 - Engineering Mathematics**

**Description:**


**Requisites:** PREREQ - KMA150 or (KMA152 and KMA154) or KMA156 or (KMA171 and KMA172) or K NT150 MEXCL - K MA252

**Staff:** Dr M. Brideson

**Teaching Pattern:** 3x1-hr lectures, 1-hr tutorial, 1-hr lab session weekly

**Assessment:** 2-hr exam (80%), assignments (20%)


**Offered in Courses:** [N3A]

**Unit Delivery Information:**

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**KME300 - Engineering Numerical Methods**

**Description:** Fundamental numerical processes for obtaining approximate but useful solutions to mathematical models of practical engineering problems. Topics include: errors in computations; solution of linear and non-linear equations arising from problems in the physical sciences and engineering; approximation of functions; numerical integration and differentiation; eigenvalues and eigenvectors with applications to differential equations and optimisation. Statistical applications; probability and hypothesis testing with engineering applications.

**Requisites:** PREREQ - KMA150 MEXCL - KMA265, KMA350

**Staff:** Prof LF Forbes, Dr S Wotherspoon

**Teaching Pattern:** 4x1-hr lectures, 1-hr tutorial, 1-hr lab session weekly

**Assessment:** Exam (80%), Internal assessment (20%)

**Recommended Texts:** E. Kreyszig. Advanced Engineering Mathematics, 8th edn. ISBN. 0-471-33328-X

**Offered in Courses:** [N3A]

**Unit Delivery Information:**

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**KNE111 - Computer Aided Design and Communication**

**Description:** Develops students' ability in preparing, drawing and presenting engineering drawings using contemporary graphical techniques and computer software packages. The concept of computer aided drafting (CAD) tools is explained. Studies cover mechanical, civil and...
Units Coded K – Faculty of Science, Engineering & Technology

electrical circuit drawings. In the drawing of spatial objects, students are introduced to aspects of descriptive geometry such as methods of projection, elements of plane and solid geometry, development of surfaces of revolution.

Staff: TBA

Teaching Pattern: A mix of 26 hrs lectures and 39 hrs practical work sessions; and assignments in mechanical and electrical CAD

Assessment: final exam (40%), mid-sem test (25%), assignments (35%)

Required Texts: None

Recommended Texts: None

Offered in Courses: [ N3A ]

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KNE112 - Engineering Mechanics

Description: First unit on the principles of engineering mechanics covering statics and dynamics including vector algebra, kinematics and kinetics of single particles and system of particles using Newton's laws, energy and momentum methods, impacts. The main objective is to give students the confidence to apply these principles in solving practical engineering problems. The statics part of the unit deals with rigid body and bending moment diagrams. The unit also deals with solving for forces in various structures under varied load conditions.

Requisites: MEXCL - ACM100, ACM102, ACM110

Staff: Dr V Karri, Dr ES Melerski

Teaching Pattern: 3x1-hr lectures, 1-hr tutorial, 5x3-hr lab sessions

Assessment: 3-hr exam (80%), tutorials and mid-term test (10%), lab (10%)

Required Texts: Rhoden C & Gordon CT, *Studying Engineering at University: Everything You Need to Know*, Allen & Unwin, St Leonards, NSW, 2000


Offered in Courses: [ N3A ]

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KNE114 - Experimental Design and Analysis

Description: Considers the design of experiments, instrumentation, data acquisition systems, analogue to digital conversion and the use of the software Matlab and LabView. Data analysis including the use of Matlab and Excel, elementary statistical analysis, interpretation of experimental data, and graphical presentation of results. Student groups will design a simple transducer (such as a load cell) to set specifications which will be manufactured and tested. Testing will involve calibration, including repeatability and error limit determination.

Staff: Dr J Sargison

Teaching Pattern: 1-hr lectures, 1-hr tutorials, 3-hr practical weekly (13 wks)

Assessment: design (50%), lab (20%), mid-sem test (10%), assignments (20%)

Offered in Courses: [ N3A ]

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KNE121 - Engineering Profession and Industry

Description: Introduces the role and responsibility of the professional engineer in society including professional practice, conduct and ethics. The unit also develops the student’s ability to use basic engineering and business tools (eg workshop processes, spreadsheets and databases -- particularly Microsoft Excel). Professional issues include the history of the engineering profession in society, role and impact of the professional engineer on industry, society and the environment. The principles of safe and sustainable design and development and the consequences of poor design are examined. The selection of teams and the roles of team members in the design process are covered.

Requisites: PREREQ - KNE121

Staff: Dr D Lewis, Prof F Bullen, Dr T Gale

Teaching Pattern: 5 hrs weekly (13 wks)

Assessment: assignment on ethics and sustainability (5%), Excel tutorials and assignment (15%), design project report and presentation (25%), workshop design and practice (10%) field trip reports (5%), final exam (40%)

Offered in Courses: [ N3A ]

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KNE122 - Electrical Engineering

Description: Introduces fundamental concepts in circuit theory and electromagnetism. Topics covered include DC circuit theory -- Kirchhoff's laws and circuit reduction; superposition, Thévenin's and Norton's theorems; maximum power theorem, loop and nodal analysis; inductance and capacitance, transient behaviour of R-L and R-C circuits; steady state AC circuit theory -- periodic wave forms, average and
RMS values; phasors, R-L, R-C and R-L-C circuits, impedance, power, power factor, complex power; matching; non-linear circuits -- non-linear resistors, diodes.

**Staff:** Dr D Lewis (Coordinator)

**Teaching Pattern:** 3 lectures, 1 tutorial weekly (13 wks), 6x3-hr lab sessions during the sem

**Assessment:** 3-hr final exam (70%), coursework and mid-term test (30%)

**Recommended Texts:** Rizzoni G, *Principles and Applications of Electrical Engineering*, Irwin, 1993


**Offered in Courses:** [N3A ]

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**KNE210 - Materials and Manufacturing**

**Description:** Introduces civil and mechanical students to the engineering properties of materials and manufacturing processes. The main emphasis is on understanding why materials have certain properties and how these properties can be modified and utilised in engineering processes. A further theme will consider life-cycle properties of materials in the context of deterioration. Studies cover mechanical properties of materials including destructive and non-destructive testing. The unit includes an extensive study of metals and metal alloys with special emphasis on understanding equilibrium diagrams. The heat treatment and hardenability of plain carbon and alloy steels will also be studied. Fatigue failure and metallurgical problems associated with welding will be discussed. Non metallic materials including Portland cement, concrete, timber, ceramics, polymers and composites will also be covered but the main thrust will be on metal alloys.

**Requisites:** MEXCL - ACM216

**Staff:** tba

**Teaching Pattern:** 3x1-hr lectures, 1-hr tutorial weekly (13 wks), 6x3-hr lab

**Assessment:** 3 hr exam (80%), mid term test (5%), lab (15%)

**Required Texts:** Askeland DR, *The Science and Engineering of Materials*, PWS Publ

**Offered in Courses:** [N3A ]

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**KNE211 - Engineering Design and Project Management**

**Description:** Acquaints students with the fundamental concepts of engineering design. Students study the design of everyday artefacts as well as professional design practices and standards. Contemporary concepts of innovation and project management in a competitive environment are introduced. The unit also develops a student's communication skills through oral group presentations as well as written design reports requiring components of verbal description, mathematical layout, accuracy and complete working drawings. Students are given an introduction to related topics in project management and engineering innovation, and they complete small design projects chosen from across the various engineering disciplines with an emphasis on breadth of application of knowledge gained in other subjects of the degree. Students participate in a national design-and-build competition.

**Requisites:** PREREQ - KNE111 (or KNT111), KNE112 (or KNT112), KNE122 (or KNT115)

**Staff:** Dr Yasir Al Abdeli

**Teaching Pattern:** 6 hrs per week design office

**Assessment:** coursework and assignments (100%)

**Required Texts:** tba

**Offered in Courses:** [N3A ]

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**KNE212 - Mechanics and Structures**

**Description:** Develops the fundamental concepts and theories of the elastic behaviour of solid bodies subject to various types of loading. Promotes an understanding of the design and analysis of all types of structures such as buildings, bridges and machines. Emphasises the behaviour of elements making up these structures. Studies cover concepts of stress and strain, internal forces in bar structures, stresses due to bending, behaviour of columns and members subjects to pure torsion. In dynamics, attention is focused on the plane kinematics and kinetics of rigid bodies, using the momentum and energy conservation theorems. Mechanical vibrations of systems with one degree of freedom are considered, including transient vibration and numerical solutions to the equations of motion.

**Requisites:** PREREQ - KMA150 (or KMA156 or KNT150) and KNE112 (or KNT112)

**Staff:** Dr D Holloway

**Teaching Pattern:** 3x1-hr lectures, 1-hr tutorial, 4x3-hr lab sessions

**Assessment:** 3 hr exam (75%), mid-sem test (10%), lab (15%)


**Offered in Courses:** [N3A ]
### KNE212 - Thermal and Fluid Engineering

**Description:** Uses simple methods of mathematical analysis to develop an understanding of the concepts and principles of classical thermodynamics and one-dimensional incompressible fluid motion and their application in the analysis and design of engineering systems where fluid flow, energy transfer and energy conversion take place. The understanding of these principles is strengthened with relevant laboratory experiments. Studies cover pure substances in their three phases, thermodynamic properties and measurement; manometry and hydrostatic forces; conservation of mass (continuity), momentum and Bernoulli equations and conservation of energy (first Law of Thermodynamics); thermodynamic systems and working fluids (vapours, gases and gaseous mixtures), control volume, basic cycles, energy quality (second Law of Thermodynamics); dimensional analysis, similarity and modelling; laminar and turbulent flow, incompressible flow in closed conduits and open channel flow.

**Requisites:** PREREQ - KMA150 (or KMA156 or KNT150) and KNE112 (or KNT112) MEXCL - ACM220, ACM221

**Staff:** Professor MR Davis

**Teaching Pattern:** 39 lectures, 13 tutorials, 18 hrs lab

**Assessment:** lab (20%); mid-sem test (10%); 2x2-hr exams (70%)


**Recommended Texts:** Leaver RH & Thomas TR, *Analysis and Presentation of Experimental Results*, Macmillan.

### KNE222 - Electronic Engineering

**Description:** Gives students a basic understanding of the analog and digital electronic principles involved in instrumentation and measurement systems. Topics covered include: Introduction to transient and resonant circuit theory of circuits involving resistors, inductors and capacitors; Basic description of the behaviour of operational amplifiers with positive and negative feedback; Application of operational amplifiers to measurement, instrumentation and filter circuits; Boolean algebra and the implementation of simple Boolean functions using truth tables and Karnaugh Map simplification; Combinational logic and simple sequential logic circuit implementation; Number representation using Boolean variables and logic function realisation of simple arithmetic operations; Realisation of counting circuits.

**Requisites:** PREREQ - KMA150 (or KMA156 or KNT150) and KNE122 (or KNT115)

**Staff:** Mr A Brocklesby (Coordinator), Dr DJH Lewis

**Teaching Pattern:** 3 lectures, 1 tutorial weekly (13 wks), 6x3-hr lab sessions during sem

**Assessment:** 3-hr final exam (70%), coursework and mid-term test (30%)


### KNE232 - Microprocessors and Data Acquisition

**Description:** Is designed for students interested in the fundamental operation of microprocessors and micro-controllers and the interfacing of these devices to the real world. The unit builds from the realisation of gate circuits, the reduction and implementation of Boolean functions, to the design and implementation of sequential circuits. Fundamental programming of microprocessors and micro-controllers (Macro and Assembler code) is developed and hardware and software aspects of how these devices are connected to memory and peripheral systems. Methods of conversion between analog and digital signals are developed.

**Requisites:** PREREQ - KXA150 or KXA151 MEXCL - KCA254, AEA303 COREQ - KNE222 (or KNT216)

**Staff:** Mr A Brocklesby

**Teaching Pattern:** 3 lectures, 1 tutorial, 5x3 hrs prac weekly, 13 weeks

**Assessment:** 3-hr exam (70%), coursework (30%)
KNE312 - Structural Mechanics


Requisites: PREREQ - KMA150 (or KMA156 or KNT150), KNE212 (or KNT219)

Staff: Dr D Holloway

Teaching Pattern: 3x1-hr lectures, 1-hr tutorial, 4x3-hr lab sessions

Assessment: coursework and lab (20%), final exam (80%)


KNE313 - Geotechnical Engineering 1

Description: Introduction to geological processes; significance of engineering geology; applied geophysics; geology and earthquakes; geology of Hobart and regions; engineering case histories. Soil phases and properties; characteristics of soils; compaction processes and control; stresses in soils; consolidation and settlement; soil permeability and water movement.

Requisites: PREREQ - KMA150 (or KMA156 or KNT150), KNE211 (or KNT214) MEXCL - ACC346, KEA432

Teaching Pattern: 3 lectures, 1 tutorial, 1.5 hrs prac weekly, 13 weeks

Assessment: assignments (25%), final exam (75%)


KNE314 - Transportation Engineering

Description: Transport modes and planning; economics of transport; traffic and highway engineering including vehicle characteristics, collection of traffic data, parametric and non parametric tests applied to traffic engineering problems, headway distributions, gap and delay models, speed and flow relationships, roadway capacity -- uninterrupted and interrupted flow, isolated traffic signals, coordinated traffic signals, traffic accidents; environmental problems associated with roads, road design standards, geometric design of roads, pavement materials, design and evaluation of road pavements, maintenance strategies.

Requisites: PREREQ - KNE210 (or KNT222), KNE212 (or KNT229) MEXCL - ACC445

Staff: Prof F Bullen, B Cousins

Teaching Pattern: 3 lectures, 1 tutorial, 1.5 hrs prac weekly, 13 weeks

Assessment: assignments (25%), final exam (75%)

Required Texts: Underwood RT, *Road Engineering Practice*, Macmillan Education

KNE315 - Steel and Timber Structures

Description: Familiarises students with steel and timber materials technology, and the analysis and design of steel and timber structures. Students are confronted with a variety of creative structural projects in steel or timber for which codes of practice are employed to develop
professional engineering solutions. There are several large design projects, supported by weekly tutorial exercises, that explore detailed engineering requirements of structure, frame and element design. Students are also expected to use computer-aided design facilities and structural analysis applications for documentation of projects.

**Requisites:** PREREQ - KNE212 (KNT219), KNE210 (or KNT222) MEXCL - ACC355

**Staff:** TBA

**Teaching Pattern:** 2 lectures, 2 tutorials, 1 hr prac weekly, 13 weeks

**Assessment:** continuous assessment of project and tutorial work (50%), end-of-sem exam (50%)

**Required Texts:** Gorenc, Tinyou & Syam, *Steel Designer’s Manual*, 6th edn

**Australian Standards for Civil Engineering Students SAA HB 2.2**

**Recommended Texts:** Australia Institute of Steel Construction, *Load Capacity Tables*, SAA Loading Code Parts 1 & 2 (in HB 2.2)

**SAA Steel Structures Code, AS4100 (in HB 2.2)**

**Offered in Courses:** [ N3A ]

**Unit Delivery Information:**

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**KNE316 - Concrete Structures**

**Description:** Familiarises students with concrete materials technology, and the analysis and design of concrete structures. Students are confronted with a variety of creative structural projects in concrete for which codes of practice are employed to develop professional engineering solutions. There will be several large design projects, supported by weekly tutorial exercises, that explore detailed engineering requirements of structure, frame and element design. Students will also be expected to use computer-aided design facilities and structural analysis applications for documentation of projects.

**Requisites:** PREREQ - KNE212, KNE210 MEXCL - ACC355, ACC315

**Staff:** TBA

**Teaching Pattern:** 2 lectures, 2 tutorials, 1 hr prac weekly, 13 weeks

**Assessment:** continuous assessment of project and tutorial work (50%), end-of-sem exam (50%)

**Required Texts:** Warner, Rangan, Hall, Faulkes, *Concrete Structures*, Longman, 1998

**Australian Standards for Civil Engineering Students, SAA HB 2.2**

**Recommended Texts:** Cement and Concrete Association, *Concrete Design Handbook*

**SAA & C\&CA, Guide to Concrete Construction**

Ryan WG, Samarin A, *Australian Concrete Technology*, Longman

**Offered in Courses:** [ N3A ]

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**KNE331 - Advanced Circuits and Electronics**

**Description:** Review of single-phase and three-phase circuits, power computations, transients in RL, RC and RLC circuits, magnetic circuits, inductively coupled coils (transformers), two-port networks, Fourier series, semiconductor switches, rectification with diodes and thyristors, ac voltage controllers, DC to DC converters (choppers), DC supplies and DC to AC converter (inverters).

**Requisites:** PREREQ - KNE222 or KNT216

**Staff:** Dr M A Kashem

**Teaching Pattern:** 3 lectures, 1 tutorial, weekly, 13 weeks; 5x3-hr practicals

**Assessment:** 3-hr exam (60%), coursework (40%)


**Recommended Texts:** Circuit Analysis:


Power Electronics:


**Offered in Courses:** [ N3A ]

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**KNE332 - Digital Electronic Systems**

**Description:** Design of Boolean logic and finite state machines. Standard SSI, MSI and LSI components; implementation with different logic families, mainly TTL and MOS sticks; synchronous system design, ALU, memory, tri-state, and open-collector buses. Top-down
design of digital systems, controller design, micro-programming, hardware implementation of arithmetic and other algorithmic processes, and use of Digital CAD tools in modern VLSI design. Modelling of digital systems using hardware description language VHDL. Implementation of complex digital systems using synthesis tools; use of field-programmable gate arrays (FPGAs) to implement digital systems.

**Requisites:** PREREQ - KNE222 (or KNT216), KNE232 (or KNT229) MEXCL - AEA302, AEA303

**Staff:** Mr A Brocklesby

**Teaching Pattern:** 3 lectures, 1 tutorial, weekly, 13 weeks; 5x3-hr practicals

**Assessment:** 3-hr exam (70%), coursework (30%)


**Offered in Courses:** [ N3A ]

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#### KNE333 - Signals and Linear Systems


Network responses: poles and zeros. Transfer functions from frequency responses; impulse response, step response, convolution, graphical convolution. Time delay and linear phase requirements for distortionless transmission, dispersion.

Filter designs: Characteristic function, approximation techniques; standard filters – Butterworth, Chebyshev and Bessel.

Digital signal processing: sampling theorem, Nyquist, aliasing, reconstruction from samples; transmission bandwidth and binary transmission; DFT, windowing, FFT algorithms. Z-transform for solving difference equations, digital convolution, digital filters, FIR and IIR. Frequency response of digital filters.

State-space analysis: State-space equations, solutions in time and in frequency domains, relationship to transfer function, state-space realisation of a transfer function.

Introduction to stochastic signals: stationarity and ergodicity, probability density function (pdf), sums of random variables, central limit theorem, Gaussian distribution, thermal noise, power spectral density, noise in networks, correlation function, PSD and ACF. Spectrum of random binary data, binary detection and Gaussian noise.

**Requisites:** PREREQ - KNE222 (or KNT216), KME271 (or KNT227)

**Staff:** Dr Bernardo A. Leon de la Barra

**Teaching Pattern:** 3 lectures, 1 tutorial, weekly, (13 wks); 5x3-hr practicals

**Assessment:** 3-hr exam (70%), coursework and test (30%)


**Offered in Courses:** [ N3A ]

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#### KNE334 - Communication Systems 1

**Description:** Transmission media transmission lines as distributed circuits, partial DEs and travelling waves; lossless and distortionless lines, attenuation, propagation constant, phase and group velocity. Calculations of sending and receiving end quantities; constants of transmission lines; mismatch and reflections, reflection diagrams, SWR, Smith Chart, measurement techniques; low-loss lines, resonant lines, reactive stubs, Q factors. Matching with quarter-wave transformers, 1- and 2-stub tuners. Power lines.

**Modulation techniques:** Why modulate? AM and its derivatives (DSB/SC, SSB, QAM, VSB), modulation index and depth of modulation, sidebands, transmission bandwidths, transmission and demodulation, coherence in local oscillators, pilot carriers, crosstalk, envelope detection. Angle modulation, FM and PM, spectrum of sinusoidally modulated FM, transmission bandwidth; receiver structures, image frequency, IRR and selectivity examples.

**Requisites:** PREREQ - KME271 (or KNT227), KNE222 (or KNT216)

**Staff:** DJH Lewis (Unit coordinator)

**Teaching Pattern:** 3 lectures, 1 tutorial, weekly, (13 wks); 6x3-hr practicals

**Assessment:** 3-hr exam (70%), coursework (30%)


**Offered in Courses:** [ N3A ]

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#### KNE335 - Electrical Design

**Description:** Adds to the techniques and knowledge gained in KNE211 *Engineering Design and Project Management* and covers selected topics in the areas of communication, control, digital, electronic and power engineering. Students are shown the methods of operational planning and control, and the impact of quality systems on design and manufacturing processes. The latter includes the application of engineering standards, tolerance problems and reliability.
KNE336 - Control Systems Engineering


**Requisites:** PREREQ - KME271 (or KNT227)

**Staff:** Assoc Prof M Negnevitsky (Coordinator), Dr Bernardo A. León de la Barra

**Teaching Pattern:** 3 lectures, 1 tutorial, weekly, 13 weeks, 5x3-hr practicals

**Assessment:** 3-hr exam (60%), coursework (40%)

**Required Texts:**

**Offered in Courses:** [ N3A ]

**Unit Delivery Information:**

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KNE342 - Electrical Machines and Power Systems

**Description:** AC circuits; per unit quantities; magnetism and magnetic materials; energy conversion; transformers; DC machines; induction machines; synchronous machines; generation of electrical energy, power transmission and distribution; three-phase faults; power system protection.

**Requisites:** PREREQ - KNE122 or KNT115

**Staff:** Dr M A Kashem

**Teaching Pattern:** 3 lectures, 1 tutorial, weekly, 13 weeks, 5x3-hr practicals

**Assessment:** 3-hr exam (60%), coursework (40%)

**Recommended Texts:**

**Offered in Courses:** [ N3A ]

**Unit Delivery Information:**

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KNE351 - Fluid Mechanics 1

**Description:** Extends the treatment of ideal fluid flow to two dimensions, and the treatment of open channels to the gradually varied flow case. A general treatment of flow about immersed bodies is introduced at an elementary level. The basic theory of incompressible flow turbomachinery is covered. Topics include: kinematics and dynamics of 2-dimensional idea fluid flow, velocity potential and stream functions; flow nets; addition of ideal flow patterns; flow about immersed bodies; introduction to boundary layers; friction drag on plates; drag measurement from wake traversing; gradually varied flow in open channels; hydraulic jumps; channel controls and backwater curves; energy transfer in turbomachines; dimensional analysis of turbomachine performance; elementary design and performance analysis of pumps and turbines for incompressible flow.

**Requisites:** PREREQ - KNE213 (or KNT210), KME271 (or KNT227)

**Staff:** Dr S Carter (Coordinator)

**Teaching Pattern:** 3 lectures, 1 tutorial, 1.4-hr practicals weekly, 13 weeks

**Assessment:** final exam (80%), lab (20%)

**Offered in Courses:** [ N3A ]

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KNE352 - Dynamic Systems

Description: Selected topics from: Kinematics of 3-dimensional systems including rotation about a fixed point, rotating and translating axes; mass moments and products of inertia; kinematics of rigid bodies and 3 dimensions; Euler equations; gyroscopes; energy methods including virtual work, generalised coordinates and Lagrange’s equations; vibration of single degree systems with impulse excitation; multiple degree of freedom systems with point masses; eigenvalues and eigenvectors; matrix iteration; branched systems. Rotor and engine balancing.

Requisites: PREREQ - KNE212 MEXCL - ACM301

Staff: Dr M P Kirkpatrick

Teaching Pattern: 3 lectures, 1 tutorial, weekly, 13 weeks 4x3-hr practicals

Assessment: 3-hr exam (70%), coursework (30%)


Offered in Courses: [ N3A ]

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KNE353 - Manufacturing, Maintenance and Quality

Description: Develops the fundamentals of machining, manufacturing processes, modern statistical quality control techniques, control charts and specification limits. Several measuring techniques and gauging are discussed. Studies cover (a) Statistical Quality Control -- review of statistical methods; quality control functions; process control techniques; quality accreditation; (b) Engineering Metrology -- length standards, gauging, specific methods and instruments; screw threads and gear measurements; (c) Manufacturing Processes -- mechanics of cutting models; analysis of turning operations; (d) Group Technology; (e) Flexible Manufacturing Systems -- constituents, layout, applications, case study; (f) Industrial Maintenance Methods and Practice -- case studies.

Requisites: MEXCL - ACM302, ACM316

Staff: Dr V Karri

Teaching Pattern: 3 lectures, 1 tutorial, 1.5-hr practicals weekly, 13 weeks

Assessment: exam (80%), assignment/project (20%)

Offered in Courses: [ N3A ]

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KNE354 - Thermal Engineering I

Description: Considers the basic principles and applications of energy use and transfer from both thermodynamic and heat/mass transfer perspectives. Topics selected from: (a) Combustion and fuels theory, (b) Energy conversion and usage levels, (c) energy quality, (d) Analysis of industrial engineering plant, (e) Conduction - shape factors, critical insulation thickness, fins, transient conduction, (f) Convection - Nusselt and Stanton numbers, dimensional analysis, laminar boundary layer, turbulent flow, mixing length, Reynolds analogy, Reynolds number, Prandtl number, natural convection, (g) Heat exchanger design, and (h) radiation intensity, absorptivity and emissivity, black and grey surfaces, reciprocity theorem, shape factors.

Requisites: PREREQ - KNE213, KME271 MEXCL - ACM350

Staff: Prof M R Davis, Dr J Sargison

Teaching Pattern: 3 lectures, 1 tutorial weekly, 3 hrs prac x 5 (13 wks)

Assessment: Two 2-hr exams (80%), assignments (20%)


Offered in Courses: [ N3A ]

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KNE355 - Design for Manufacture

Description: Mechanical design skills are developed through a series of design project assignments. The projects are intended to expose students to key areas of the mechanical design process, including: structural design, mechanism design, design for manufacture, mechanical power system design, design for flow and thermal systems. The final project will be directed at developing creative, conceptual and holistic abilities in design.

Requisites: PREREQ - KNE211 (or KNT214), KNE213 (or KNT210), KNE210 (or KNT222), KNE112 (OR KNT112)

Staff: Dr Yasir Al Abdeli

Teaching Pattern: 5 hrs weekly, total 65 hrs

Assessment: continuous assessment of project work

Offered in Courses: [ N3A ]

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KNE364 - Mechatronic Systems 1

Description: Introduce students to mechatronic systems and the engineering methods used in their design and development. Expose students to different types of systems, explore design and implementation strategies, and develop skills in integrating mechanical, electronic and computer requirements and in analysis and evaluation of systems. The unit will focus on the specific components required to build systems.

Requisites: PREREQ - KNE214
Staff: Dr T Gale, Dr B León de la Barra, Mr J McCulloch
Teaching Pattern: 3 lectures, 1 tutorial weekly, (13 wks); 5x3-hr practicals
Assessment: 3-hr exam (50%), coursework (50%)
Offered in Courses: [ N3A ]

KNE405 - Municipal Engineering for Surveyors

Special Note: restricted to Surveying students

Description: Provides an introduction to aspects of municipal engineering likely to involve participation of surveyors. Studies cover: (a) Fluid flow -- estimation and measurement of flow in pipes and channels and over weirs; simple pumping systems; flow through orifices; (b) Hydrology -- the hydrologic cycle, precipitation and run-off; water supply, sewerage and drainage; and (c) Engineering properties of soils -- soil properties, compaction of soil, consolidation, flow of water in soils, total and effective use of soil as engineering material.

Requisites: PREREQ - *KYA171 COREQ - KGG405
Staff: tba
Teaching Pattern: 3 lectures, 1 tutorial weekly (13 wks)
Assessment: exam (70%), assignments (30%)
Recommended Texts: Budhu M, Soil Mechanics and Foundations, Wiley
Offered in Courses: [ N3H ]

KNE411 - Hydraulic Engineering

Description: Closed conduit flow -- velocity distribution and friction factors; pipe networks, surge towers, water hammer. Surface waves, shoaling, breaking, wind generation. Open channel flow -- estuarine bores, hydraulic jumps, critical flow, backwater analysis, flood and surge waves. Weirs, spillways, flood propagation. Turbulent diffusion processes. Sediment transport. Engineering Hydrology -- the hydrologic cycle; elements of meteorology; precipitation and forecasting; evaporation from water surfaces; infiltration; unit hydrographs and the rational runoff equation; flood flows, flood routing, retardation basin design, water supply and treatment.

Requisites: PREREQ - KNE351 MEXCL - ACC431, ACC446
Staff: Prof MR Davis (Coordinator), Mr C McGeorge
Teaching Pattern: 3x1-hr lectures, 1-hr tutorial weekly (13 wks), 5x3-hr lab
Assessment: lab and coursework (40%), final 3-hr exam (60%)
Recommended Texts: Chadwick A, Hydraulics in civil and Environmental Engineering, 3rd edn, E& amp;FN Spoon
Wanielista M, Kersten R & Eaglim R, Hydrology, Wiley
Robertson JA, Cassidy JJ & Chaudry MH, Hydraulic Engineering, Wiley
Offered in Courses: [ N3A ] [ N4A ]

KNE412 - Stress Analysis


Requisites: PREREQ - KME271, (or KNT227), KNE312 PREREQ - Alternatives to the above pre-requisites: KNT227
Staff: Dr D Holloway
Teaching Pattern: 3x1-hr lectures, 1-hr tutorial, 4x3-hr lab/practical sessions
Assessment: lab and coursework (20%), final 3-hr exam (80%)
### Required Texts:
- or

### Offered in Courses:
- [ N3A ] [ N4A ]

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#### KNE413 - Geotechnical Engineering 2

**Description:** Shear strength and the stress history of soils. Stability of slopes; pressures exerted by soil masses; Retaining walls including cantilever, sheetpile, reinforced earth and diaphragm walls; Braced excavations; bearing capacity of foundations; settlement of foundations; piled foundations; an introduction to critical state soil mechanics.

**Requisites:** PREREQ - KNE312, KNE313 MEXCL - ACC434

**Staff:** Mr BF Cousins (Coordinator)

**Teaching Pattern:** 3x1-hr lectures, 1-hr tutorial weekly (13 wks), 6x3-hr lab

**Assessment:** lab (10%), assignments (15%), 3-hr exam (75%)


**Recommended Texts:** Craig RF, *Soil Mechanics*, Chapman Hall

### Offered in Courses:
- [ N3A ] [ N4A ]

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#### KNE414 - Construction and Asset Management

**Description:** Introduces civil engineering students to the design and management of large projects and the management of existing infrastructure assets such as bridges and dams to ensure their future viability.

**Requisites:** PREREQ - KNE301

**Staff:** Prof F Bullen

**Teaching Pattern:** 3x1-hr lectures, 1-hr tutorial weekly (13 wks)

**Assessment:** 3-hr exam (50%), assignments (50%)

**Recommended Texts:** Lloyd BE, *The Organisation of Engineering Work*, Macmillan, 1979

### Offered in Courses:
- [ N3A ] [ N4A ]

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#### KNE415 - Civil Engineering Design 1

**Description:** Covers design of industrial buildings including portal frame loads and cnxn details, standardised cnxns. Plastic design of steel frames -- upper and lower bound methods. Code requirements, stability and deflections for portal frame design. Crane gantry and rail design. Basic commercial building configurations, loads. Wind models, wind analyses and dynamics of tall buildings. Serviceability, creep and shrinkage effects in tall buildings.

**Requisites:** PREREQ – KNE312, KNE315, KNE316 MEXCL - ACC454

**Staff:** TBA

**Teaching Pattern:** 78 hrs design office work

**Assessment:** continuous assessment of project work

**Required Texts:** Gorenc, Tinyou & Syam, *Steel Designers Manual*, 6th edn
- *Australian Standards for Civil Engineering Students*, SAA HB2.2.

**Recommended Texts:** Australian Institute of Steel Construction, *Load Capacity Tables*
- Cement and Concrete Association, *Concrete Design Handbook*
- SAA & C & amp;CA, *Guide to Concrete Construction.*

### Offered in Courses:
- [ N3A ] [ N4A ]

### Unit Delivery Information:

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KNE416 - Civil and Environmental Engineering Project

Description: Each student is assigned an individual supervisor from the academic staff of the school and is required to undertake a project which may involve research and development work, engineering design, literature survey, experimental work, theoretical work, computational studies, simulation and implementation. Pass students will work in pairs but will be required to submit individual project reports. Honours students will be assigned individual research and development projects. Honours students will start work on their thesis in the first semester. All students will be expected to attend talks in semester 1 which will help them in their research. Such talks will include, for example, using the library databases. The typed and bound thesis is to be submitted on a date determined by the Head of School.

Requisites: PREREQ - KNE312, KNE313, KNE315, KNE316 MEXCL - ACC447

Staff: Dr E Melerski (Coordinator)

Teaching Pattern: 70 hrs project work including oral presentations

Assessment: individual project report or thesis and the presentation of seminars

Offered in Courses: [ N3A ] [ N4A ]

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KNE417 - Civil Engineering Design 2


Requisites: PREREQ - KNE301, KNE313, KNE316, KNE351 MEXCL - ACC454

Staff: TBA

Teaching Pattern: 78 hrs design office work

Assessment: continuous assessment of project work

Australian Standards for Civil Engineering Students, SAA HB 2.2

Recommended Texts: AUSTRROADS, Bridge Design Code, 1992
Wilie B & Streeter V, Hydraulic Transients, McGraw-Hill
Tomlinson, Foundation Design and Construction, Longman

Offered in Courses: [ N3A ] [ N4A ]

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KNE418 - Civil Engineering Practice

Description: For details of this unit, please contact the School of Engineering

Requisites: PREREQ - KNE411, KNE412, KNE413, KNE470

Staff: Mr BF Cousins (Coordinator)

Teaching Pattern: 3x1-hr lectures, 1-hr tutorial weekly (13 wks), 6x3-hr lab

Assessment: 3-hr exam (50%), assingments (50%)

Required Texts: tba

Offered in Courses: [ N3A ] [ N4A ]

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KNE419 - Civil Engineering Honours

Description: Students undertake an in-depth study on a project related to Civil Engineering and prepare a bound thesis on that topic. The study may consist of various aspects os design, analysis, literature review, laboratory-based experimental work or field work, theoretical or computational studies, simulation or implementation. A significant element of research or development work is expected. Students will also attend a series of specialised lectures and workshops on information retrieval skills, seminar presentation, and thesis writing and preparation.

Requisites: PREREQ - completion of BE yr 3 with sufficient merit

Staff: Dr D Holloway (Coordinator)

Assessment: thesis presentation and average weighted marks of BE years 3 and 4.

Offered in Courses: [ N4A ]

Unit Delivery Information:

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**KNE422 - Computer Architecture**

**Description:** Topics include: Instruction set design, computer arithmetic, controller and datapath design, memory systems, input/output systems, interrupts and exceptions, pipelining, performance and cost analysis, computer architecture history, and a survey of advanced architectures. There will be a computer design project. The practical part includes implementation of a major subset of the MIPS architecture to the gate level.

**Requisites:** PREREQ - KNE232 (or KNT229) and KNE332

**Staff:** Mr A Brocklesby (Coordinator)

**Teaching Pattern:** 3x1-hr lectures, 1-hr tutorial weekly (13 wks), 4x3-hr lab

**Assessment:** tba


**Offered in Courses:** [ N3A ] [ N4A ]

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**KNE423 - Computer Systems Engineering Project**

**Description:** Pass students are required to undertake a project which may involve research and development work, engineering design, literature survey, experimental work, theoretical work, computational studies, simulation and implementation. Students will work in small groups but may be required to submit individual project reports and presentations. Honours students will be assigned an individual supervisor from the academic staff and are required to complete the individual research and development projects started in Semester 1 as specified under KNE429. All students will be expected to attend talks in semester 1 which will help them in their research. Such talks will include, for example, using the library databases. The typed and bound thesis is to be submitted on a date determined by the Head of School.

**Requisites:** PREREQ - KNE335 and other units defined by project area as determined by HoS

**Staff:** tba

**Assessment:** individual project report or thesis and the presentation of seminars

**Offered in Courses:** [ N3A ] [ N4A ]

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**KNE424 - Image Processing and Computer Vision**

**Description:** Introduces the tools and techniques used in modern image processing, and provides the basis for the design of industrial and commercial image processing systems. Studies cover the human visual system, digital TV and video standards, the fundamentals of 2-dimensional signal processing, 2-D image transform techniques, video coding and compression systems JPEG/MPEG, multi-media internet signal processing, image enhancement techniques, edge detection, object recognition, robot vision and fractals.

**Requisites:** PREREQ - KMA150 or KMA156 or KNT150

**Staff:** Dr T Gale (Coordinator)

**Teaching Pattern:** 3x1-hr lectures, 1-hr tutorial weekly (13 wks), 5x3-hr lab

**Assessment:** 3-hr exam (70%), lab (10%), coursework and test (20%)


**Recommended Texts:** Ballard DH & Brown CM, *Computer Vision*, Prentice-Hall, 1982


**Offered in Courses:** [ N3A ] [ N4A ]

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**KNE425 - Computer Systems Engineering Design**

**Description:** Is a project in computer systems engineering, which may involve research and development work, engineering design, literature survey, experimental or theoretical work, computational studies, simulation and implementation. The project work may also include studying the methods of operational planning and control, and the impact of quality systems on design and manufacturing processes. The latter includes the application of engineering standards, tolerance problems and reliability.

**Requisites:** PREREQ - KXA253, KNE332, units defined by project area as determined by HoS

**Staff:** tba

**Teaching Pattern:** 1-hr lecture, 1-hr tutorial, 3-hr practical weekly (13 wks)

**Assessment:** coursework (100%)

**Offered in Courses:** [ N3A ] [ N4A ]
KNE429 - Computer Systems Engineering Honours

Description: Students will be assigned individual supervisors and undertake a full year, individual in-depth study on a project related to Computer Systems Engineering and prepare a bound thesis on that topic. The study may consist of various aspects of design, analysis, literature review, laboratory-based experimental work or field work, theoretical or computational studies, simulation or implementation. A significant element of research or development work is expected. Students will also attend a series of specialised lectures and workshops on information retrieval skills, seminar presentation, and thesis writing and preparation.

Requisites: PREREQ - completion of BE year-3 with sufficient merit COREQ - KNE423

Staff: tba

Assessment: thesis presentation and average weight marks of BE years 3 and 4

Offered in Courses: [ N4A ]

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KNE431 - Communication Systems 2


Requisites: PREREQ - KYA275, (KNT275), KNE333, KNE334, KNE336

Staff: Dr DHJ Lewis (Coordinator)

Teaching Pattern: 3 lectures, 1 tutorial weekly (13 wks), 6x3-hr lab sessions

Assessment: 3-hr exam (70%), coursework and test (30%)

Recommended Texts: Kraus JD, Electromagnetics, 4th edn, McGraw-Hill, 1992

Schwartz M, Information Transmission, Modulation and Noise, 3rd edn or later, McGraw-Hill

Offered in Courses: [ N3A ] [ N4A ]

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KNE432 - Digital Communication Systems


Requisites: PREREQ - KNE333, KNE334 MEXCL - AEA432

Staff: tba

Teaching Pattern: 3x1-hr lectures, 1-hr tutorial weekly (13 wks), 4x3-hr lab sessions

Assessment: 3-hr exam (70%), coursework and test (30%)


Senior JM, Optical Fibre Communications, Prentice Hall, 1985


Stremler FG, Introduction to Communication Systems, Wesley, 1982

Offered in Courses: [ N3A ] [ N4A ]

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KNE433 - Electronic Systems

Description: Gives methods of circuit analysis and design for use in the general instrumentation area and for interfacing analog and digital
systems. Examines performance limitations including the effects of noise and finite bandwidth on systems. Studies cover microelectronics, amplifiers (discrete and integrated circuit), general feedback theory and compensation techniques, oscillator, pulse and function generators, analog multipliers, and D/A and A/D converters. Development of analog and digital filter systems. IIR and FIR filter systems.

**Requisites:** PREREQ - KNE331, KNE333 MEXCL - AEA407  
**Staff:** Mr A Brocklesby (Coordinator)  
**Teaching Pattern:** 3x1-hr lectures, 1-hr tutorial weekly (13 wks), 5x3-hr lab  
**Assessment:** 3-hr exam (70%), coursework (30%)  
**Required Texts:** Sedra AS & Smith KC, *Microelectronic Circuits*, 3rd edn, HRW International

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**KNE434 - Computer and Data Networks**

**Description:** Introduces Local Area Networks (LANs) and similar systems carrying data between computers. The OSI model, international standards, data link protocols. Circuit, packet and message switching networks. Network topologies, polling and random access strategies. IIEEE802.X LANs. Token passing bus and token ring networks, CD/CSMA and Ethernet systems TCP/IP. LAN operating systems, problems of network security and network management. Measurement of telecommunications traffic and the applications of queueing theory to the analysis of network throughput and response time, with examples of network planning, design and performance simulation. Metropolitan area networks (MANs), Wide area networks (WANs) and integrated services digital networks (ISDN) and associated protocols such as X.25.

**Requisites:** PREREQ - KMA150 or KMA156 or KNT150 MEXCL - AEA412, KCA354  
**Staff:** (TBA)  
**Teaching Pattern:** 3x1-hr lectures, 1-hr tutorial weekly (13 wks), 5x3-hr lab  
**Assessment:** 3-hr exam (70%), coursework (30%)  

**Offered in Courses:** [ N3A ] [ N4A ]

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**KNE435 - Electronics and Communication Engineering Project**

**Description:** Pass students are required to undertake a project which may involve research and development work, engineering design, literature survey, experimental work, theoretical work, computational studies, simulation and implementation. Students will work in small groups but may be required to submit individual project reports and presentations Honours students will be assigned an individual supervisor from the academic staff and are required to complete the individual research and development projects started in Semester 1 as specified under KNE439. All students will be expected to attend talks in semester 1 which will help them in their research. Such talks will include, for example, using the library databases. The typed and bound thesis is to be submitted on a date determined by the Head of School.

**Requisites:** PREREQ - KNE335 and other units defined by project area as determined by HoS MEXCL - AEA453  
**Staff:** tba  
**Assessment:** individual project report or thesis and the presentation of seminars.  
**Offered in Courses:** [ N3A ] [ N4A ]

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**KNE436 - Electronics and Communication Engineering Design**

**Description:** Is a project in electronics or communications engineering, which may involve research and development work, engineering design, literature survey, experimental or theoretical work, computational studies, simulation and implementation. Students are shown the methods of operational planning and control, and the impact of quality systems on design and manufacturing processes. The latter includes the application of engineering standards, tolerance problems and reliability.

**Requisites:** PREREQ - KNE335 and other units defined by project area as determined by HoS  
**Staff:** tba  
**Teaching Pattern:** 1-hr lecture, 1-hr tutorial, 3-hr practical weekly (13 wks)  
**Assessment:** coursework (100%)  
**Recommended Texts:** Horowitz P & Hill W, *The Art of Electronics*, CUP

**Offered in Courses:** [ N3A ] [ N4A ]

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**KNE439 - Electronics and Communications Engineering Honours**

**Description:** Students will be assigned individual supervisors and undertake a full year, individual in-depth study on a project related to

KNE441 - Intelligent Systems

Description: The aim of this unit is to acquaint students with intelligent systems and provide them with a working knowledge for building these systems. The unit is intended for all engineering and science students. The unit gives introduction to the expert systems, knowledge representation, dealing with uncertainty and expert system tools. Students are given a comprehensive background in building rule-based expert systems. The unit also presents fuzzy set theory, considers how to build fuzzy systems and illustrates the theory through examples. And finally the unit gives an introduction to artificial neural networks and genetic algorithms, and considers hybrid intelligent systems, knowledge engineering and data mining.

Staff: Dr M Negnevitsky

Teaching Pattern: 3x1-hr lectures, 1-hr tutorial weekly (13 wks), 5x3-hr lab

Assessment: 3-hr final exam (65%), project (20%), assignments (15%)


Offered in Courses: [ N3A ] [ N4A ]

KNE441 - Intelligent Systems

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KNE443 - Power System Operation and Control

Description: The aim of this unit is to instill confidence and understanding of those concepts of power system analysis that are likely to be encountered in the study and practice of electrical power engineering. The approach is to develop the thinking process of the student in reaching a sound understanding of a broad range of topics in the power-system area of electrical engineering. Calculation of unbalanced fault conditions, methods of symmetrical components, the admittance model and network calculations, the impedance model and network calculations, Thévenin's theorem and load flow solutions, the Gauss-Seidel method, the Newton-Raphson method, power flow studies in system design and operation, DAPPER application for load flow analysis, fault calculation using the bus impedance matrix, transient stability, the equal-area criterion for transient stability, economic operation of power systems, unit commitment, state estimation of power systems, reliability analysis of power systems.

Staff: Dr M Negnevitsky (Coordinator)

Teaching Pattern: 3x1-hr lectures, 1-hr tutorial weekly (13 wks), 4x3-hr lab

Assessment: 3-hr final exam (70%), coursework (30%)


Offered in Courses: [ N3A ] [ N4A ]

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KNE444 - Process Control Engineering

Description: Basic materials in state-space analysis including state space equations, eigenvalues of an nxn matrix, Computing of exp(At). Transfer matrix, Controllability, Observability, Principle of duality, Second methods of Lyapunov, Lyapunov's main stability theorem, Lyapunov stability analysis of linear time-invariant systems, Control system design via pole placement, Design of state observers, Quadratic optimal control systems. Introduction to adaptive control of linear systems with uncertain dynamics including the selection of Lyapunov functions, adaptive law design, stability analysis and robustness analysis. Introduction to sliding mode control of nonlinear systems with uncertain dynamics, which covers the definition of sliding surfaces, sliding mode controller design based on the upper and the lower bounds of system uncertainties, stability analysis and robustness analysis. The structure and operation of fuzzy controllers, Sugeno type fuzzy processing, PI-like fuzzy controllers, PID-like fuzzy controllers, stability and performance problems.

Staff: Dr Bernardo A. León de la Barra

Teaching Pattern: 3x1-hr lectures, 1-hr tutorial weekly (13 wks), 5x3-hr lab

Assessment: 3-hr final exam (60%), coursework (40%)

KNE444 - Electrical Power Engineering Project

Description: Pass students are required to undertake a project which may involve research and development work, engineering design, literature survey, experimental work, theoretical work, computational studies, simulation and implementation. Students usually work in small groups but may be required to submit individual project reports and presentations. Honours students will be assigned an individual supervisor from the academic staff and are required to complete the individual research and development projects started in Semester 1 as specified under KNE449. All students are expected to attend talks in semester 1 to assist them in their research, including, for example, the use of library databases. The typed and bound thesis is to be submitted on a date determined by the Head of School.

Requisites: PREREQ - KNE355 and other units defined by project area as determined by HoS

Staff: tba

Teaching Pattern: 65 hrs project work

Assessment: individual project report or thesis and the presentation of seminars

Offered in Courses: [ N3A ] [ N4A ]

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KNE445 - Electrical Power Design

Description: It is a design project in electrical power engineering, which may involve research and development work, engineering design, literature survey, experimental or theoretical work, computational studies, simulation and implementation. Students may be shown methods of operational planning and control, and the impact of quality systems on design and manufacturing processes. The latter includes the application of engineering standards, tolerance problems and reliability.

Requisites: PREREQ - KNE335, KNE342 and other units defined by project area as determined by HoS

Staff: Dr M A Kashem (Coordinator)

Teaching Pattern: some lectures and tutorials at the start of the unit; then students work in small groups.

Assessment: coursework (100%)

Required Texts: tba

Recommended Texts: tba

Offered in Courses: [ N3A ] [ N4A ]

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KNE446 - Electrical Power Engineering Honours

Description: Students will be assigned individual supervisors and undertake a full year, individual in-depth study on a project related to Electrical Power Engineering and prepare a bound thesis on that topic. The study may consist of various aspects of design, analysis, literature review, laboratory-based experimental work or field work, theoretical or computational studies, simulation or implementation. A significant element of research or development work is expected. Students will also attend a series of specialised lectures and workshops on information retrieval skills, seminar presentation, and thesis writing and preparation.

Requisites: PREREQ - completion of BE year 3 with sufficient merit COREQ - KNE445

Staff: tba

Assessment: thesis presentation and average weighted marks of BE year 3 and 4

Offered in Courses: [ N4A ]

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KNE451 - Fluid Mechanics 2

Description: Selected topics from: (a) Inviscid, incompressible flow -- complex potential, conformal mapping, wing theory; (b) Viscous incompressible flow -- Navier-Stokes equations, creep flow, hydrodynamic lubrication, boundary layer equations, approximate solutions for laminar boundary layers, (c) Turbulent flow - nature of turbulence, Reynolds stresses, approaches to modelling turbulence, turbulent boundary layers and free shear layers, fully developed turbulent flow in pipes and ducts, turbulent jet flow, drag on submerged objects, vortex shedding; (d) Introduction to computational fluid dynamics - discretisation, numerical methods, grids, errors; (e) Applied aerodynamics.
Requisites: PREREQ - KNE351
Staff: Dr J Sargison, Dr M Kirkpatrick
Teaching Pattern: 3x1-hr lectures, 1-hr tutorial weekly (13 wks), 6x3-hr lab
Assessment: final exam (70%), lab (10%), assignments (10%), mid term test (10%)
Offered in Courses: [ N3A ] [ N4A ]

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KNE453 - Advanced Manufacturing
Description: Covers the following topics: (a) Operations Research -- linear programming: general linear programming problem; transportation problem and network models; dynamic programming. (b) Manufacturing Processes -- mechanics of cutting models for twist drills and end mills. (c) Economics of manufacturing -- Break even analysis, depreciation methods and industrial case studies. (d) Unconventional machining processes theory and modelling techniques. (e) Gear manufacture, thread manufacturing and tracer controlled machine tools (e) Powder metallurgy, sintering and compacting.
Requisites: PREREQ - KNE353 MEXCL - ACM457
Staff: Assoc Prof V Karri
Teaching Pattern: 3x1-hr lectures, 1-hr tutorial weekly (13 wks), 6x3-hr lab
Assessment: exam (80%), assignment/project (20%)
Offered in Courses: [ N3A ] [ N4A ]

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KNE454 - Thermal Engineering 2
Description: Psychrometry including air conditioning systems. Refrigeration cycles and working fluids. Vapour compression and heat pump systems. Heating / ventilation and air-conditioning design - heat load calculations, choice of system, pipe and duct sizing, CFD analysis, natural ventilation. Elementary gas dynamics and introduction to compressible flow turbomachinery.
Requisites: PREREQ - KNE354 MEXCL - ACM460
Staff: Dr J Sargison, Dr M P Kirkpatrick
Teaching Pattern: 3x1-hr lectures, 1-hr tutorial weekly (13 wks), 6x3-hr lab
Assessment: exam (60%), lab (10%), assignments (10%), major project (20%)
Offered in Courses: [ N3A ] [ N4A ]

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KNE455 - Mechanical Engineering Project
Description: Pass students are required to undertake a project which may involve research and development work, engineering design, literature survey, experimental work, theoretical work, computational studies, simulation and implementation. Students will work in small groups but may be required to submit individual project reports and presentations Honours students will be assigned an individual supervisor from the academic staff and are required to complete the individual research and development projects started in Semester 1 as specified under KNE459. All students will be expected to attend talks in semester 1 which will help them in their research. Such talks will include, for example, using the library databases. The typed and bound thesis is to be submitted on a date determined by the Head of School.
Requisites: PREREQ - KNE355 and other units defined by project area as determined by HoS
Staff: Assoc Prof V Karri (Coordinator)
Assessment: individual project report or thesis and the presentation of seminars
Offered in Courses: [ N3A ] [ N4A ]

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KNE459 - Mechanical Engineering Honours
Description: Students will be assigned individual supervisors and undertake a full year, individual in-depth study on a project related to Mechanical Engineering and prepare a bound thesis on that topic. The study may consist of various aspects of design, analysis, literature review, laboratory-based experimental work or field work, theoretical or computational studies, simulation or implementation. A significant element of research or development work is expected. Students will also attend a series of specialised lectures and workshops on information retrieval skills, seminar presentation, and thesis writing and preparation.
Requisites: PREREQ - completion of BE year 3 with sufficient merit
Staff: tba
Assessment: thesis presentation and average weighted marks of BE years 3 and 4
Offered in Courses: [ N4A ]

Unit Delivery Information:
KNE462 - Advanced Dynamics and Control

**Description:** Topics are selected from: transducers for physical parameter sensing; hydraulic, pneumatic and electrical actuators; physical element dynamic transfer functions using D-operator, system transfer functions, frequency response, transient response, open and closed loop response; dynamic system stability; normal modes of vibration, damping; experimental modal analysis' modes of vibration of distributed systems; generalised parameters; noise generation and propagation; noise control; properties of absorbing materials, enclosed spaces; ducts and silencers; human response to noise.

**Requisites:** PREREQ - KNE352 MEXCL - ACM305, ACM302

**Staff:** Prof MR Davis

**Teaching Pattern:** 3x1-hr lectures, 1-hr tutorial weekly (13 wks), 6x3-hr lab

**Assessment:** final exam (80%), lab and coursework (20%)

**Recommended Texts:** Rao SS, *Mechanical vibrations*, 3rd edn, Addison Wesley, 1995

**Offered in Courses:** [ N3A ] [ N4A ]

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KNE464 - Mechatronic Systems 2

**Description:** Investigate advanced mechatronic systems and the engineering methods used in their design and development. Expose students to specific systems and to advanced design and implementation strategies. Develop advanced skills in integrating mechanical, electronic and computer requirements and in analysis and evaluation of systems

**Requisites:** PREREQ - KNE364

**Staff:** Dr TJ Gale, Dr B León de la Barra

**Teaching Pattern:** 3x1-hr lectures, 1-hr tutorial weekly (13 wks), 6 x 3-hr labs

**Assessment:** 2 hr exam (40%), coursework (60%)

**Recommended Texts:** Shetty & Kolk, *Mechatronic Systems Design*, PWS Publ

**Offered in Courses:** [ N3A ] [ N4A ]

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KNE465 - Mechatronics Engineering Project

**Description:** Pass students are required to undertake a project which may involve research and development work, engineering design, literature survey, experimental work, theoretical work, computational studies, simulation and implementation. Students will work in small groups but may be required to submit individual project reports and presentations Honours students will be assigned an individual supervisor from the academic staff and are required to complete the individual research and development projects started in Semester 1 as specified under KNE469. All students will be expected to attend talks in semester 1 which will help them in their research. Such talks will include, for example, using the library databases. The typed and bound thesis is to be submitted on a date determined by the Head of School.

**Requisites:** PREREQ - KNE364, KNE355

**Staff:** Dr TJ Gale

**Assessment:** individual project report or thesis and the presentation of seminars

**Offered in Courses:** [ N3A ] [ N4A ]

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KNE466 - Robotics

**Description:** Introduces the fundamentals of robotics, including kinematic and dynamic theory of industrial robotic arms. Exposure to robot usage practice and the programming of industrial robots. Exploration of types and applications of non-industrial robots. Investigation of robot vision, tactile sensing and the application of artificial intelligence to robotics.

**Requisites:** PREREQ - KNE352

**Staff:** Dr TJ Gale, Assoc Prof V Karri

**Teaching Pattern:** 3 lectures, 1 tutorial, 2 hrs practicals weekly plus 2 field days.

**Assessment:** assignments (15%), class Quiz (5%) design project report and presentation (20%), final exam (60%)

**Recommended Texts:** Robert J, *Fundamentals of Robotics*, Prentice Hall

**Offered in Courses:** [ N3A ] [ N4A ]

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### KNE466 - Mechatronics Engineering Honours

**Description:** Students will be assigned individual supervisors and undertake a full year, individual in-depth study on a project related to Mechatronics Engineering and prepare a bound thesis on that topic. The study may consist of various aspects of design, analysis, literature review, laboratory-based experimental work or field work, theoretical or computational studies, simulation or implementation. A significant element of research or development work is expected. Students will also attend a series of specialised lectures and workshops on information retrieval skills, seminar presentation, and thesis writing and preparation.

**Requisites:** PREREQ - completion of BE year 3 with sufficient merit COREQ - KNE465

**Staff:** tba

**Assessment:** thesis presentation and average weighted marks of BE years 3 and 4

**Offered in Courses:** [ N4A ]

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### KNE470 - Environmental Engineering

**Description:** The engineering profession places great importance on practising according to a sustainability ethic. The unit introduces environmental and sustainability topics from an engineering viewpoint; shows how the traditional design process can be extended to include these issues; examines the principal environmental engineering design areas, including air pollution control, wastewater and sewage treatment, and contaminated site remediation; and introduces the theory of contaminant transport in air, water, and groundwater.

**Requisites:** PREREQ - KNE351 or equiv

**Staff:** Dr S Carter (Coordinator)

**Teaching Pattern:** 3x1-hr lectures, 1-hr tutorial weekly (13 wks) site visit

**Assessment:** 3-hr exam (50%), coursework (50%)

**Offered in Courses:** [ N3A ] [ N4A ]

#### Unit Delivery Information:

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### KNE472 - Environmental Engineering 2

**Description:** Following on from KNE470 Environmental Engineering, this unit focuses on the design areas of environmental engineering. Please contact the School of Engineering for details.

**Requisites:** PREREQ - KNE470 MEXCL - ACC466

**Staff:** tba

**Teaching Pattern:** 3x1-hr lectures, 1-hr tutorial weekly (13 wks) 13 hrs lab and site visits

**Assessment:** 2-hr exam (50%), assignments (30%), lab and site visits (20%)

**Offered in Courses:** [ N3A ] [ N4A ]

#### Unit Delivery Information:

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### KNE480 - Engineering Applications

**Special Note:** The unit may form part of the final year of studies of any of the School's engineering disciplines. The unit may only be taken with permission of the Degree Coordinator and the Head of School.

**Description:** The unit involves case studies of projects in the relevant engineering disciplines at the professional level. In consultation with a lecturer in the appropriate discipline, a student will select a topic of study within his area of expertise. The topic will be researched in order to identify existing projects/exemplars or projects of potential for investigation. A study of an existing project might involve a critical analysis of the operation of an existing facility including cost-benefit analysis, productivity, best practice or appropriate technology, life cycle analysis, and environmental or sociological impact. Occupational, health and safety aspects must be considered. For a developmental project, a design or prototype would be expected together with consideration of the predicted or measured performance together with the other factors mentioned above. Students must prepare an investigation program including time-lines and progress reports at the discretion of the supervisor. A substantial, professional standard report will form the major part of the assessment.

**Requisites:** PREREQ - Completion of year 3 of the Bachelor of Engineering degree

**Staff:** tba

**Teaching Pattern:** 6 self study (13 weeks), 5 equivalent field work days

**Assessment:** Project planning 10%, Progress report 20%, Major reports 70%

**Offered in Courses:** [ N3A ] [ N4A ]

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KNE481 - Advanced Civil Engineering Applications

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KNE483 - Advanced Electrical Engineering Applications

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KNE484 - Advanced Power Engineering Applications

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KNE485 - Advanced Mechanical Engineering Applications

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KNE988/89 - Doctor of Philosophy

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KNT112 - Engineering Mechanics

Special Note: room F71 (AMC)

Description: Develops the ability to predict the effects of force and motion on frames and mechanisms; to present the concepts of the statics of rigid bodies and to develop techniques for the analysis of simple structures and frames; to outline the principles of linear and curvilinear motion of particles and rigid bodies and to relate their subsequent motion to the causal forces.

Staff: Mr A Pal

Teaching Pattern: (13 wks)

Assessment: continuous assessment and 2-hr exam


Offered in Courses: [ N3A ]

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KNT114 - Experimental Design and Analysis

Description: For details of this unit, please contact the School of Engineering.

Teaching Pattern: (13 wks)

Offered in Courses: [ N3A ]

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KNT115 - Electrical Fundamentals

Special Note: room F67 (AMC)

Description: Provides students with a foundation in electrical theory upon which studies of electrical power generation, electrical power distribution and electronics may be built. The unit also provides students with an opportunity to become familiar with the safe and efficient use of measuring instruments.

Staff: Mr D Butler

Teaching Pattern: (13 wks each sem)
Assessment: continuous assessment (50%), exams (50%)

Required Texts: Johnson, Hilburn, Johnson & Scott, Basic Electric Circuit Analysis, 5th edn, Prentice Hall.

Offered in Courses: [ N3A ]

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KNT121 - Computer Aided Drafting

Special Note: room J137 (UniTas) or G60 (AMC)

Description: Introduces students to the principles of engineering design and develops basic graphics skills needed for engineering practice, including 2-D Computer Aided Drafting.

Staff: Mr J O'May

Teaching Pattern: (13 wks)

Assessment: continuous assessment and 3-hr exam


Offered in Courses: [ N3A ]

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KNT122 - Engineering Graphics and Design B

Special Note: room J137 (UniTas or G60 (AMC)

Description: Continues and builds on KNT121.

Requisites: PREREQ - KNT121

Staff: Mr J O'May

Teaching Pattern: (13 wks)

Assessment: continuous assessment and 3 hr exam


Offered in Courses: [ N3A ]

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KNT125 - Mathematical Methods

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KNT126 - Calculus & Linear Algebra

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KNT127 - Materials Technology 1A

Special Note: room G28 (AMC). On completion of KNT127 students are awarded an XX result (result shown in another unit), the final result for this unit is awarded on completion KNT128. Students are required to enrol concurrently in KNT127 and KNT128.

Description: Covers materials and related chemistry to provide a rational basis for materials selections. The unit also develops a professional engineering approach to the acquisition, presentation and application of knowledge, including professional behaviour.

Requisites: COREQ - KNT128

Staff: Mr A Belle

Teaching Pattern: (13 wks each sem)

Assessment: continuous assessment and 2-hr exam each sem

Required Texts: Callister WD, Materials Science and Engineering, John Wiley and Sons, 1991

Offered in Courses: [ N3A ]

Unit Delivery Information:

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KNT127 - Materials Technology 1B

Special Note: room G28 (AMC). On completion of KNT127 students are awarded an XX result (result shown in another unit), the final result for this unit is awarded on completion KNT128. Students are required to enrol concurrently in KNT127 and KNT128.

Description: Covers materials and related chemistry to provide a rational basis for materials selections. The unit also develops a professional engineering approach to the acquisition, presentation and application of knowledge, including professional behaviour.

Requisites: COREQ - KNT127

Staff: Mr A Belle

Teaching Pattern: (13 wks each sem)

Assessment: continuous assessment and 2-hr exam each sem

Required Texts: Callister WD, Materials Science and Engineering, John Wiley and Sons, 1991

Offered in Courses: [ N3A ]

Unit Delivery Information:

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KNT129 - Engineering Profession and Industry A

Special Note: room F65 (AMC). On completion of KNT129 students are awarded an XX result (result shown in another unit), the final result for this unit is awarded on completion KNT130. Students are required to enrol concurrently in KNT129 and KNT130.

Description: Gives students an insight into how their profession fits into industry and society. The unit also incorporates report writing and presentations.

Requisites: COREQ - KNT130

Staff: Mr G Smith

Teaching Pattern: (13 wks)

Assessment: continuous assessment (100%)


Offered in Courses: [ N3A ]

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KNT130 - Engineering Profession and Industry B

Special Note: room F65 (AMC). On completion of KNT129 students are awarded an XX result (result shown in another unit), the final result for this unit is awarded on completion KNT130. Students are required to enrol concurrently in KNT129 and KNT130.

Description: Gives students an insight into how their profession fits into industry and society. The unit also incorporates report writing and presentations.

Requisites: COREQ - KNT129

Staff: Mr G Smith

Teaching Pattern: (13 wks)

Assessment: continuous assessment (100%)


Offered in Courses: [ N3A ]

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KNT150 - Calculus and Applications 1

Special Note: restricted to Engineering students

Description: Covers the same material as KMA171 and KMA172 but is conducted as part of the Bachelor of Engineering.

Requisites: PREREQ: *MT841 MEXCL - KMA150, KMA152, KMA154, KMA156, KMA157, KMA171, KMA172

Staff: Australian Maritime College

Teaching Pattern: 3 lectures, 1 tutorial weekly

Assessment: 3-hr exam (70%), regular written work (30%)

Hill R, Elementary Linear Algebra (with applications), ISBN 0030103479

Offered in Courses: [ N3A ]
KNT210 - Thermal and Fluid Engineering

Special Note: room G63 (AMC)

Description: Provides an understanding of how the laws of thermodynamics are applied to practical engineering cycles. Studies include positive displacement gas compressors; air standard cycles; Rankine cycle with superheat; vapour compression refrigerators and heat pumps; combustion psychrometry and heat transfer. The unit also provides a knowledge and understanding of thermofluid phenomena via flow visualisation, theory and exercises addressing the continuity, force momentum and steady flow energy equations for incompressible and compressible fluid flows.

Requisites: PREREQ - KNT150

Staff: Dr L Goldsworthy, Mr P Sahoo

Teaching Pattern: 13 wks

Assessment: continuous (50%), 3-hr exam (50%)

Offered in Courses: [ N3A ]

KNT214 - Engineering Design

Special Note: room F71 (AMC)

Description: Provides students with an understanding of the overall philosophy, factors, considerations and techniques involved in the design of Engineering systems and components. Studies include, the Engineer and design, design concepts and considerations, selection of materials, manufacturing processes, design of components, failure and standard components. Students also complete an Engineering Design Project.

Requisites: PREREQ - KNT112, KNT121 and KNT115

Staff: Mr A Pal

Teaching Pattern: 4 hrs lectures/tutorial weekly (13 wks), 18 hrs investigative study

Assessment: continuous, 3-hr final exam

Offered in Courses: [ N3A ]

KNT216 - Electronic Engineering

Special Note: room F67 (AMC)

Description: Provides an understanding of solid state and digital devices, their applications and specifications, within the context of electronics systems. Topics covered include semiconductor devices; integrated circuits such as ideal and practical operational amplifiers, voltage regulators, IC applications and common circuits; digital techniques; electronic fault diagnosis using electronic test equipment and CRO and interpretation circuit diagrams and maintenance manuals; solid state applications; electronics intercommunications; microprocessors and microcontrollers. A practical program covering voltage regulation, testing and measurement of solid state circuits, digital logic circuits, digital to analogue and vice versa, electronics intercommunications techniques is also included.

Requisites: PREREQ - KNT150, KNT115

Staff: Mr D Butler

Teaching Pattern: 13 wks

Assessment: continuous (50%), 3-hr exam (50%)

Offered in Courses: [ N3A ]

KNT219 - Strength of Materials

Special Note: room F69 (AMC)

Description: Enables students to analyse stresses and strains in structural components subjected to various loading situations. Students are also able to analyse experimental stress analysis data output from strain gauge rosettes under static loading conditions and to understand the underlying modes of failure (strength, serviceability and stability) in structural members.

Requisites: PREREQ - KNT112

Staff: Dr N Lawrence

Teaching Pattern: 13 wks ea sem

Assessment: continuous (50%), 3-hr exam (50%)

Offered in Courses: [ N3A ]

Unit Delivery Information:

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KNT222 - Materials for Engineering Design

Description: The application of materials technology to the selection and behaviour of materials for engineering uses. Studies include structural materials, welding processes and structural adhesives, concrete and composite materials, selection techniques using performance indices and computerised selection programs, failure mechanisms, and corrosion.

Requisites: PREREQ - KNT116

Teaching Pattern: 3 lectures, tutorial, 1-hr practical weekly (13 wks)
Assessment: continuous assessment (50%) 3-hr exam (50%)

Offered in Courses: [ N3A ]

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KNT227 - Calculus of Several Variables

Special Note: restricted to Engineering students

Description: We commence with a development of the basic ideas of year one mathematics in the area of vector algebra and the solutions of ordinary differential equations to second order.

Attention is given to Laplace transforms and their operational theorems, transforms of derivatives, solution of ordinary differential equations with constant coefficients, and solutions of systems of ordinary differential equations with constant coefficients. Special functions such as the Heaviside and Dirac functions, impulse response and convolution are also applied to ordinary differential equations.

The basic partial differential equations of heat conduction, wave propagation and potential theory that we discuss are associated with engineering applications related to heat and fluid flow. The separation of variables technique is employed. Boundary-value problems, eigenvalues and eigenfunctions are discussed in detail.

The calculus of several variables section is split into two sections: vector differential calculus, involving gradient, divergence, curl, scalar potential and vector integral calculus involving multiple integrals, surface integrals, methods, relationships. Applications to moments of inertia, hydrodynamic and electromagnetic fields

Requisites: PREREQ - KNT126 OR KMA172 OR KNT150 MEXCL - KMA271, KMA254

Staff: from the Australian Maritime College

Teaching Pattern: 3 lectures, 1 tutorial weekly
Assessment: exam (70%); continuous assessment (30%)


Offered in Courses: [ N3A ]

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KNT229 - Microprocessor Systems and Data Acquisition

Special Note: room F73 (AMC)

Description: Contact the School of Engineering for details of this unit.

Teaching Pattern: 13 wks
Assessment: continuous

Offered in Courses: [ N3A ]

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KNT253 - Manufacturing Technology

Description: The unit aims to introduce students to modern production techniques currently used in the manufacturing industry, with particular reference to manufacturing processes and metal cutting theory. Students are also introduced to the concept of quality and measurements, and in particular the importance of engineering metrology and statistical methods in the manufacturing industry.

On completion, students should be able to apply metal cutting theory to typical manufacturing processes, use engineering metrology techniques to assess the functionality of machining operations, and apply statistical quality control principles to improve the quality of product and comment on product attributes based on quality assessment.

Staff: TBA

Teaching Pattern: 3 lectures, 1 tutorial per week (13 weeks), supplemented by practical sessions and site visits (18 hrs)
Assessment: Exam (80%), coursework/assignment/project (20%)

Recommended Texts: REFERENCE TEXTS:

KNT275 - Physics for Engineers

Special Note: Restricted to Engineering students

Description: The unit provide the background in physics needed for further study of electrical engineering in later years of the Engineering course. Topics include a selection from second order systems and oscillations, the theory of waves and wave phenomena, atomic physics, semiconductor materials and devices, and electromagnetism.

Requisites: PREREQ - KMA150 or KMA156 PREREQ - KNE112 or KNT112

Staff: TBA

Teaching Pattern: 3 lectures and 1 tutorial per week (13 weeks), 18 hours practical work.

Assessment: Examination (80%), courseework/assignments/laboratory (20%)


KPA152 - Natural Vegetation of Tasmania

Special Note: offered subject to sufficient student enrolment. Students wishing to pursue a degree course in life sciences are advised to enrol in KPA150. Summer School enrolment only with permission of Head of School.

Description: An understanding of the biodiversity of natural vegetation communities and the processes that shape them is essential for appropriate land management, whether it is sustainable forest production or natural vegetation and wilderness management and eco-tourism. The unit provides an opportunity for students with no formal background in biology to become familiar with the form, structure and reproduction of plants; it introduces them to the diversity (mosses, ferns, conifers and flowering plants) of the Tasmanian flora. Special emphasis is placed on the important characteristics of the main families of flowering plants, with students learning how to identify plants and understand their important role in contributing to the main community types found throughout Tasmania. A suitable grade in this unit may provide the prerequisite for the third-year unit KPA375, Field Botany, which is a more extensive treatment of the ecology and biodiversity of plants in Tasmania.

Requisites: MEXCL - KPA150, KPA151, KPA210, KPA161, KPZ163, KPA164

Staff: Mr PJ Dalton (Coordinator), Dr MJ Hovenden, Assoc Prof B Potts, Dr GJ Jordan

Teaching Pattern: 19 lectures, 26 hrs lab, field excursion (East Coast of Tasmania)


A set of Course Notes.

KPA161 - Biology of Plants

Description: Introduces Botany and covers topics including: the structure and origin of flowering plants; sexual reproduction in flowering plants; the physiology of flowering plants; the fine structure of plant cells; and a systematic survey of land plants (mosses, ferns, conifers and flowering plants), with emphasis on life-histories and evolutionary trends.

Requisites: MEXCL - KPA150, KPA151, KPZ120, KPA100, KAP116

Staff: Dr A Koutoulis, Dr J Weller, Mr PJ Dalton (Coordinator)

Teaching Pattern: 3 lectures and 3-hr practical weekly (13 wks), some lectures and/or practicals may be taught as tutorials

Assessment: 3-hr exam (60%), semester work (40%)

Required Texts: a laboratory manual


Offered in Courses: [ R3J ] [ S3G ] [ S3T ]

KPA204 - Plant Genetics and Molecular Biology

Description: Plant Genetics & Molecular Biology is offered as a core second year unit for BBiotech students only. The unit starts with a review of genetics, develops the themes of classical genetics, linkage and recombination, cytogenetics, quantitative genetics and systematics using a modern molecular approach. The other third of the course focusses on molecular genetics and integrates genetic, molecular and genomic approaches to studying plant development, function and genetic variation. The theoretical component is illustrated with practical examples of how genetics is an integral part of biological studies: Biogeography; Systematics and Evolution; Ecology; Breeding;
Developmental Biology and Biotechnology.

**Requisites:** PREREQ - KPA150 (or equivalent) MEXCL - KPA205  
**Staff:** Dr RJE Wiltshire (Unit Coordinator), Dr RE Vaillancourt, Dr JL Weller, Dr D Steane  
**Teaching Pattern:** 2 lectures weekly, 3 hrs practical weekly, tutorials by arrangement as required.  
**Assessment:** internal assessment (40%); examination (2-hour) (60%)  
**Required Texts:** Griffiths, AJF (2005), *Introduction to Genetic Analysis*, 8th edition  

**Offered in Courses:**  [S3V]  

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**KPA209 - Plant Development and Physiology**  
**Description:** Plant Development and Physiology is offered as a recommended unit for BBioTech students interested in specialising in plant science. The unit explores the interaction of plants with the environment, organ, tissue and cellular levels. We examine the processes of photosynthesis, respiration, transpiration, mineral uptake and translocation, and adaptations that enable plants to occupy diverse environments. We also examine the processes controlling plant development (germination, reproductive phase change, dormancy and senescence). The practical component is a combination of experimental work and observation of plant structure.  
**Requisites:** PREREQ - KPA150 (or equivalent) MEXCL - KPA205  
**Staff:** Dr RJE Wiltshire (Unit Coordinator), Dr MJ Hovenden  
**Teaching Pattern:** 2 lectures weekly, 3 hrs practical weekly, tutorials by arrangement as required.  
**Assessment:** internal assessment (40%); examination (2-hour) (60%)  
 or  

**Offered in Courses:**  [S3V]  

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**KPA210 - Ecology of Tasmania**  
**Special Note:** this unit complements KPA205. It is highly recommended that students take both units.  
**Description:** Examines the patterns in natural vegetation communities and the processes that shape them, both at present and in the past. The unit focuses on Tasmania but sets this in a global perspective. An understanding of the variety of plant communities and the forces shaping them is essential for appropriate land management, whether it be maintenance of natural vegetation for wilderness management and ecotourism or sustainable forest production.  
**Requisites:** PREREQ - KPA150 or (KPA151 and KZA150) MEXCL - KPA200  
**Staff:** Mr PJ Dalton, Dr MJ Hovenden, Dr RJE Wiltshire (Coordinator)  
**Teaching Pattern:** 2 lectures weekly (13 wks), 10x3-hr practicals, a weekend excursion  
**Assessment:** theory exams (60%), practical assessment (40%)  

**Offered in Courses:**  [S3G] [S3G] [S3G] [S3T]  

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**KPA214 - Plants in Action**  
**Special Note:** this unit is a prerequisite for third-year units in the School of Plant Science, and the complementary unit KPA210 is highly recommended;  
**Description:** Plants in Action is a core unit for BSc students interested in specialising in plant science. The unit explores the interaction of plants with the environment at the organism, organ, tissue and cellular levels. We examine the processes of photosynthesis, respiration, transpiration, mineral uptake and translocation, and adaptations that enable plants to occupy diverse environments. We also examine the processes controlling plant development (germination, reproductive phase change, dormancy and senescence). The practical component is a combination of experimental work and observation of plant structure, including an excursion to examine plant adaptations in different vegetation types.  
**Requisites:** PREREQ - KPA150 (or equivalent) MEXCL - KPA205, KPA209 COREQ - KPA215  
**Staff:** Dr RJE Wiltshire (Unit Coordinator), Dr MJ Hovenden  
**Teaching Pattern:** 2 lectures and 3 hrs practical weekly (13 wks)  
**Assessment:** see KPA215  
 or  

Offered in Courses: [ S3G ] [ S3T ] [ S3Y ] [ S3I ]

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**KPA215 - Genetics & Evolution**

**Special Note:** this unit is a prerequisite for third-year units in the School of Plant Science, and the complementary unit KPA210 is highly recommended;

**Description:** Genetics & Evolution is offered as a core second year unit for BSc students interested in majoring in Botany (Plant Science). The unit starts with a review of genetics, develops the themes of classical genetics and integrates the modern molecular approach. The unit examines the bases and techniques used to classify the living world, and examines the major themes in plant evolution, concentrating on the major plant groups dominating the Australian flora. The practical component will be a mix of lab-based experiments, excursions, and exercises to familiarise students with the native plants of Tasmania.

**Requisites:** PREREQ - KPA150 (or equivalent) MEXCL - KPA205, KPA204 COREQ - KPA214

**Staff:** Dr RJE Wiltshire (Unit Coordinator), Dr RE Vaillancourt, Dr JL Weller, Dr D Steane, Dr GJ Jordan

**Teaching Pattern:** 2 lectures weekly, 3 hrs practical weekly, tutorials by arrangement as required

**Assessment:** theory exams (60%), practical assessment (40%)

**Required Texts:** Griffiths, AJF (2005), Introduction to Genetic Analysis, 8th edition


Offered in Courses: [ S3G ] [ S3T ] [ S3Y ] [ S3I ]

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**KPA220/320 - Plant Biodiversity**

**Description:** Explores how the remarkable richness of plant life arose, particularly in the Australian flora. The unit describes the diversity of plant groups, including fungi, lichens, bryophytes, ferns, conifers and flowering plants; studies the processes leading to the evolutionary radiation of plants and those leading to current distribution; and also explores the implications that these have for ecology on both local and global scales.

**Requisites:** PREREQ - KPA150 or (KPA151 and KZA150) MEXCL - KPA374

**Staff:** Dr GJ Jordan (Coordinator), Mr PJ Dalton

**Teaching Pattern:** 2 lectures weekly (13 wks), 12x3-hr practicals, a full-day excursion

**Assessment:** theory exams (60%), practical assessment (40%)

Offered in Courses: [ S3G ] [ S3G ] [ S3G ] [ S3G ] [ S3T ] [ S3Y ]

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**KPA372 - Aquatic Botany**

**Description:** Provides instruction in the biodiversity and phylogeny of algal groups and allied protists, physico-chemical limnology and oceanography, phytoplankton ecology, micropaleontology, seaweeds, harmful algal blooms and aquatic food webs. Particular reference is made to studies in Australian, Antarctic and Southern Ocean waters. Applied physiological research and implications for environmental monitoring and aquaculture are emphasised.

**Requisites:** PREREQ - *KPA200 or equiv as arranged with School MEXCL - KPA346

**Staff:** Prof G Hallegraeff, Assoc Prof A McMinn

**Teaching Pattern:** 26 lectures/tutorials, 13x3-hr practical sessions; Microscopy, full-day Derwent River cruise, a seaweed excursion, and a demonstration of electron microscopes will be a major part of the practicals

**Assessment:** assignment (25%), end-of-sem written exam (50%), practical exam (25%)

**Recommended Texts:** Lee RE, Phycology, 3rd edn, ISBN 0521638836

Offered in Courses: [ S3G ] [ S3G ] [ S3G ] [ S3G ] [ S3T ] [ S3Y ]

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**KPA373 - Cell Biology**

**Description:** Examines a range of cell biological processes currently being researched in laboratories across the world. Topics include: the cytoskeleton, the eukaryote flagellum, cell motility, molecular motors, mitosis, cell division, cell cycle control, spatial organisation, plant cell development, organellogenesis, plant sexual reproduction, plant tissue culture and gene transfer systems. Students will: (i) be provided with information concerning current approaches to these research areas; and (ii) gain practical experience with some current biotechnology techniques. This unit is designed to provide students with a general understanding of cell biology and will include discussions on future directions.

**Requisites:** PREREQ - *KPA200 or KPA205 or (KPA150 and *CBA250); alternative prereqs may be accepted after consultation with the
KPA375 - Field Botany

Description: Students are exposed to the diversity of plants found in environments that range from near sea level to alpine, from rich basalt soils to ancient weathered quartzite, and from sites ravaged by clearfelling and burning to 4,000-year-old cool, temperate rainforest, all in close proximity to the Mt Field National Park and Southwest World Heritage Area. This unit is essential for students interested in botany, ecology and land management of both wilderness and production forestry areas.

Requisites: PREREQ - KPA205 (KPA210 and KPA220 also strongly recommended) MEXCL - KPA304

Staff: Prof JB Reid, Dr RJE Wiltshire (Coordinator), Mr PJ Dalton

Teaching Pattern: 13-22 Feb, 2006; informal lectures through unit and 8 days of field work

Assessment: internal assessment by field test, reports and group plant collection

Offered in Courses: [ S3G ] [ S3G ] [ S3G ] [ S3T ]

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KPA376 - Genetics

Description: Provides an overview of the ways in which classical and molecular genetics are used to study plant development. The unit includes discussion of the regulation of gene expression, mutant analysis, gene cloning, and genomics, and will introduce key techniques in plant molecular biology such as plant transformation and the use of reporter genes. It also aims to provide a broad understanding of the control of plant development from the molecular to the whole plant level, through discussion of specific topics such as hormone production and physiology, responses to the environment, and developmental patterning in flowers and leaves. The practical work takes the form of research projects, where students work closely with active research staff on a topic of current interest. Projects are available to suit individual interests, based either in the glasshouse, or in the laboratory using state-of-the-art techniques in spectrometry and molecular biology.

Requisites: PREREQ - *KPA200 or (*KPZ101 or *KPZ160 and *CBA211); alt prereq may be accepted after consultation with lecturer MEXCL - KPA336

Staff: Prof JB Reid, Dr J Weller

Teaching Pattern: 26 lectures, 13x3-hr practical sessions

Assessment: 2-hr exam (50%), research project and practical exercises (50%)

Offered in Courses: [ S3G ] [ S3G ] [ S3Y ] [ S3I ]

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KPA377 - Molecular Ecology and Evolution

Description: Provides theoretical and practical experience on the use of gentic and molecular tools to study ecology, evolution and natural history. The first part of the lecture series will introduce modern laboratory techniques and describe the nature of the genetic data provided by each method. The second part and largest lecture series will cover specific examples and topics where molecular markers and ecological genetic tools have been used, such as: spatial distribution of clones; paternity and maternity analysis (fingerprinting); gene flow; speciation and hybridisation; phylogeny and conservation genetics. The practicals will provide training for students interested in research and the application of molecular methods. One practical component compares quantitative results with molecular ones.

Requisites: PREREQ - KPA205 (alternative may be accepted after consultation with lecturer)

Staff: Dr R Vaillancourt, Dr B Potts

Teaching Pattern: 26 lectures, 39 hrs practical/tutorial

Assessment: 2-hr exam (60%), reports and others (40%)

Required Texts: Avise JC, 2004 Molecular Markers, Natural History and Evolution, Chapman Hall, NY,

Offered in Courses: [ S3G ] [ S3G ] [ S3Y ] [ S3I ]

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KPA378 - Plant Science Research

Special Note: enrolment depends on availability of a suitable project, supervisor and resources

Description: Involves a semester long research project, supervised by a member of the Plant Science staff. It will involve 5-6 hours per
week spent planning and completing an individual research project. The aim of the unit is to give students some experience in individual research in an area of their own choosing. They are encouraged to speak to the course coordinator or individual members of staff before the start of semester. Students can expect that staff will have some suggestions for projects, so that they do not need to have well developed ideas before beginning discussions. Students can undertake this unit in either semester, but it must be completed within that semester.

**Requisites:** PREREQ - KPA205, and be part of a major in Plant Science, or part of another degree course as approved by Head of School (KPA210 and KPA220 also strongly recommended)

**Staff:** Assoc Prof GM Hallegraeff, Dr JJ Ross (Coordinator)

**Assessment:** research report submitted at end of sem 60%; research performance, 40%

**Offered in Courses:** ( S3G )

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### KPA379 - Plant Ecology

**Description:** Provides an understanding of the processes shaping plant communities and populations. Students develop practical skills in the analysis of vegetation, the elucidation of environmental controls of species distribution and abundance and the population ecological approaches to studying disturbance, rare plants and environmental change. The unit involves the study of ecophysiology of individual plants, the dynamics of plant populations and interactions within plant communities. The practicals provide field-based skills in the collection of ecological data and laboratory based instruction in data analysis and interpretation.

**Requisites:** PREREQ - KPA205 (KPA210 also strongly recommended) COREQ - KPA375

**Staff:** Dr NS Davidson, Dr MJ Hovenden (Coordinator)

**Teaching Pattern:** 26 lectures, 12x3-hr practical sessions (5 in the field), 1x8-hr field trip

**Assessment:** 2-hr exam (60%), internal assessment (40%)

**Offered in Courses:** ( S3G ) ( S3T ) ( S3Y )

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### KPA400/401 - Botany 4

**Description:** Is designed to provide the opportunity to develop knowledge and skills in plant science research beyond that experienced in an undergraduate degree course. Students are assessed in the following and are required: (a) to carry out an intensive research project on an approved topic under a supervisor approved by the Board of Studies in Science, and to submit the findings in a thesis. Three copies of the research thesis (typed on A4 paper and bound) shall be submitted about nine and a half months from the date of commencing study. The normal starting date is in February; but alternative starting dates, such as mid-year, will be considered; (b) to undertake a literature review in a prescribed topic of plant science; (c) to present a seminar which describes the aims and result of the student’s research work; and (d) to write a research proposal within the framework of currently accepted guidelines for research application. At the discretion of the Head of School, students may also undertake additional coursework.

**Requisites:** PREREQ - a science degree with a Plant Science major. Special cases will be considered on their individual merits.

**Staff:** Mr P Dalton (Coordinator)

**Offered in Courses:** ( S4E ) ( S6X )

### KPA402/403 - Biotechnology Honours in Plant Science

**Description:** Is designed to provide the opportunity to develop knowledge and skills in research oriented towards biotechnology, beyond that experienced in an undergraduate degree course. Students are assessed in the following and are required: (a) to carry out an intensive research project on an approved topic under a supervisor approved by the Faculty, and to submit the findings in a thesis. Three copies of the research thesis (typed on A4 paper and bound) shall be submitted about nine and a half months (19 months if part-time) from the date of commencing study. The normal starting date is in February; but alternative starting dates, such as mid-year, will be considered; (b) to undertake a literature review in a prescribed topic of plant science; (c) to present a seminar which describes the aims and result of the student's research work; and (d) to write a research proposal within the framework of currently accepted guidelines for research application. At the discretion of the Head of School, students may also undertake additional coursework. The School will provide specific details on assessment procedure and criteria used.

**Requisites:** PREREQ - A biotechnology degree with an appropriate Plant Science major. Alternative prerequisites will be considered on their merits

**Staff:** Mr P Dalton, Plant Science Honours co-ordinator

**Assessment:** See unit description

**Offered in Courses:** ( S4V )

### KPA404 - Biotechnology Honours in Plant Science (F/T)

**Description:** For details see KPA402/403

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KPA405 - Biotechnology Honours in Plant Science (P/T)

Description: For details see KPA402/403

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KPA406 - Biotechnology Honours in Plant Science (P/T)

Description: For details see KPA402/403

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KPA407 - Botany 4 (F/T)

Description: For details see KPA400/401

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KPA408 - Botany 4 (P/T)

Description: For details see KPA400/401

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KPA409 - Botany 4 (P/T)

Description: For details see KPA400/401

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KPA410/411 - Genetics 4

Description: Is designed to provide the opportunity to develop knowledge and skills in research oriented towards genetics and/or molecular studies, beyond that experienced in an undergraduate degree course. Students are assessed in the following and are required: (a) to carry out an intensive research project on an approved topic under a supervisor approved by the Board of Studies in Science, and to submit the findings in a thesis. Three copies of the research thesis (typed on A4 paper and bound) shall be submitted about nine and a half months from the date of commencing study. The normal starting date is in February but alternative starting dates, such as mid-year, will be considered; (b) to undertake a literature review in a prescribed topic of plant science; (c) to present a seminar which describes the aims and result of the student’s research work; and (d) to write a research proposal within the framework of currently accepted guidelines for research application. At the discretion of the Head of School, students may also undertake additional coursework.

Requisites: PREREQ – a science degree with an appropriate major which has included genetically orientated units. Appropriate majors include botany, zoology or biochemistry. A solid background in chemistry, microbiology or mathematics is required. Alternative prerequisites will be considered on their merits

Staff: Mr P Dalton (Coordinator)

Offered in Courses: [ S4E ] [ S6X ]

KPA420 - Forest Science (Honours)

Description: Please contact the Faculty of Science, Engineering and Technology for details of this unit.

Offered in Courses: [ S4N ]

KPA421 - Forest Science (Honours)

Description: Please contact the Faculty of Science, Engineering and Technology for details of this unit.

Offered in Courses: [ S4N ]

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KPA422 - Forest Science (Honours) F/T

Description: For details see KPA420/421

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Description: For details see KPA420/421

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KPA424 - Forest Science (Honours) P/T

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KPA430 - Genetics 4 F/T

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KPA431 - Genetics 4 P/T

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KPA432 - Genetics 4 P/T

Description: For details see KPA410/411

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KPA450/451 - Marine, Freshwater and Antarctic Biology (Honours)

Description: Students who have completed a BSc and have satisfied the course prerequisites will be permitted to enrol in honours in Marine, Freshwater and Antarctic Biology provided (a) they have achieved an adequate standard, normally at least 33.33% of credits in Group 3 units, and (b) there are a suitable project and a supervisor available.

The honours year includes: (a) Directed studies and attendance at seminars given mainly by scientists and administrators from outside the University, eg. CSIRO Divisions of Fisheries Research and Oceanography, the Antarctic Division, Inland Fisheries Commission, interstate and international visitors; (b) an evaluation of literature in a prescribed field of study; (c) a research project of about 9 months duration; and (d) a presentation of a seminar and a research proposal.

(Microbiology students enrol in KLA455 or 456; Plant Science students in KPA450 or 451; and Zoology students in KZA450 or 451).

Staff: Mr P Dalton (Coordinator)

KPA452 - Marine, Freshwater and Antarctic Biology (Honours) F/T

Description: For details see KPA450/451

Unit Delivery Information:

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KPA453 - Marine, Freshwater and Antarctic Biology (Honours) P/T

Description: For details see KPA450/451

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KPA454 - Marine, Freshwater and Antarctic Biology (Honours) P/T

Description: For details see KPA450/451

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KPA460/461 - Forest Ecology (Honours)

**Description:** Students who have completed a BSc and have satisfied the course prerequisites will be permitted to enrol in honours in Forest Ecology provided: (a) they have achieved an adequate standard, normally at least 50% of credits in Group 3 units, and (b) there are a suitable project and a supervisor available.

The honours year includes: (a) a research project of nine months duration, normally be carried out in the School of Plant Science, but after consultation with the course coordinator may be carried out in other appropriate schools such as Zoology, Agricultural Science, Geography and Environmental Studies or Mathematics; (b) a review of literature on a prescribed topic; (c) a grant proposal; (d) a presentation of a seminar; and (e) other activities as directed by the head of school, such as attendance at seminars given by research scientists working in the field (e.g. CSIRO Forestry and Forest Products and the Ecological Society of Australia or the CRCSPF).

**Staff:** Mr P Dalton (Coordinator)

**KPA462 - Forest Ecology (Honours) F/T**

**Description:** For details see KPA460/461

**Unit Delivery Information:**

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**KPA463 - Forest Ecology (Honours) P/T**

**Description:** For details see KPA460/461

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**KPA464 - Forest Ecology (Honours) P/T**

**Description:** For details see KPA460/461

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**KPA500/501 - Graduate Diploma in Science with Honours, specialising in Botany**

**Description:** Has the same objectives as KPA400/401. Full time/part time 'umbrella' code.

**Staff:** Mr P Dalton (Coordinator)

**Offered in Courses:** [S6X]

**Unit Delivery Information:**

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**KPA502 - Graduate Diploma in Science with Honours, specialising in Botany F/T**

**Description:** For details see KPA500/501

**Unit Delivery Information:**

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**KPA503 - Graduate Diploma in Science with Honours, specialising in Botany P/T**

**Description:** For details see KPA500/501

**Unit Delivery Information:**

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**KPA504 - Graduate Diploma in Science with Honours, specialising in Botany P/T**

**Description:** For details see KPA500/501

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**KPA505 - Graduate Diploma in Science with Honours, specialising in Genetics**

**Description:** Has the same objectives as KPA410/411. Full time 'umbrella' code.

**Offered in Courses:** [S6X]

**Unit Delivery Information:**

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KPA512 - Graduate Diploma in Science with Honours, specialising in Genetics F/T

Description: For details see KPA510

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KPA520/521 - Graduate Diploma in Science with Honours, specialising in Forest Processes

Special Note: for those enrolling in the Graduate Diploma in Science with Honours (Forest Ecology) the unit has the same objectives as KPA460/461

Description: Aims at training or retraining technical/research workers for the forest industry. The topics available cover a range of disciplines including: tree breeding and genetics, tissue culture, insect or animal ecology, tree physiology and ecology, soil or tree nutrition, and modelling.

The unit can be tailored to suit the requirements of each applicant, but generally comprises the following components: course work (15%), a literature review (25%), research thesis (50%), and seminar (10%). The unit may be taken on a part-time or full-time basis.

Requisites: PREREQ - a science degree or equiv with at least passes in units appropriate to the proposed research topic. Special cases may be considered on their individual merits

Staff: Mr P Dalton (Coordinator)

KPA522 - Graduate Diploma in Science with Honours, specialising in Forest Processes F/T

Description: For details see KPA520/521

Unit Delivery Information:

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KPA523 - Graduate Diploma in Science with Honours, specialising in Forest Processes P/T

Description: For details see KPA520/521

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KPA524 - Graduate Diploma in Science with Honours, specialising in Forest Processes P/T

Description: For details see KPA520/521

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KPA802 - Master of Applied Science, Project

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KPA803 - Master of Applied Science, Project

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KPA804/05 - Master of Applied Science, Thesis

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KPA806 - Master of Applied Science, Thesis

Description:

Unit Delivery Information:
### KPZ002 - Life Science Supplementary Unit (Unit not offered in 2006)

**Special Note:** This unit is specifically intended for mature-aged students returning to study and students who have not previously studied the life sciences.

**Description:** The Life Sciences Supplementary Program is offered by the Schools of Plant Science and Zoology on the Hobart campus, usually in February, and comprises four 3 hour tutorials (12 contact hours) over a two-week period. The unit provides both conceptual and practical knowledge. Specific theoretical topics covered include: basic chemistry of life; osmosis; diffusion and active transport; the cell concept; and the classification of living organisms. Practical skills will focus on correct use of microscopes; estimating the size of microscopic objects; observing and drawing from slides; and other hands-on practical experience. This program will provide guidance as to the standards required during first year studies in life sciences.

To be eligible for entry to the Life Sciences Supplementary Program students must have been offered a place in a course at the University and have enrolled or are considering enrolment in a first year plant science and/or zoology unit. Students enrolled in any course at the University may complete the program. There are no year 12 prerequisites to study the program.

The program is not examined, therefore the grade of unit not examined (XE) will be awarded to all enrolled students. For further details, contact Dr Sue Jones from the School of Zoology or Dr Anthony Koutoulis from the School of Plant Science on email S.M.Jones and Anthony.Koutoulis.

Alternatively, the Schools of Plant Science and Zoology can be contacted on (03) 6226 2603 or (03) 6226 2613 respectively.

**Staff:** Dr A Koutoulis, Dr S Jones

**Teaching Pattern:** 4x3-hr tutorials (12 contact hrs), usually in Feb

**Offered in Courses:** [SOF]

### KPZ005 - Life Science Foundation Unit

**Special Note:** This unit is specifically intended for mature-aged students returning to study and students who have not previously studied the life sciences.

**Description:** The Life Sciences Foundation Unit is offered jointly by the Schools of Plant Science and Zoology on the Hobart campus, usually in February, and comprises 9 x 3 hour tutorials (27 contact hours) over five days, with a supplementary online component. The unit provides both conceptual and practical knowledge of introductory biological science for students. Theoretical topics include: basic chemistry of life; osmosis; diffusion and active transport; the cell concept; an introduction to genetics and evolution, and the classification of living organisms. Generic skills in academic writing (report and essay format) and computer literacy (word processing, data handling) will be gained. Practical skills include the correct use of microscopes; estimating the size of microscopic objects; dissection skills; observation and drawing from slides; and other hands-on practical experience. This program will provide guidance to the standards required during first year studies in life sciences, especially study and examination techniques.

The Life Sciences Foundation Unit is available to students who have been offered a place in a course at the University and have enrolled or are considering enrolment in a first year Plant Science and/or Zoology unit. All students wishing to take the Life Sciences Foundation Unit will be enrolled for the unit under an Associate Degree in Science. There are no year 12 prerequisites to study the program.

The program will be examined by internal assessment of theoretical and practical components. The grades awarded include: Pass (50-59%), Credit (60-69%), Distinction (70-79%) and High Distinction (80+%). Students who fail the course are advised not to enrol in first year studies in life sciences.

For further details, contact Dr Sue Jones from the School of Zoology or Dr Rob Wiltshire from the School of Plant Science or email S.M.Jones@utas.edu.au or Rob.Wiltshire@utas.edu.au. Alternatively, the Schools of Plant Science and Zoology can be contacted on (03) 6226 2603 or (03) 6226 2613 respectively.

**Staff:** Dr RJE Wiltshire, Dr S Jones

**Teaching Pattern:** 9 x 3-hr tutorials (27 contact hrs) over 5 days, Feb 20-24, 2006.

**Assessment:** Internal Assessment

**Required Texts:** Campbell and Reece - Biology 6th or 7th Edn.

**Unit Manual.**

**Offered in Courses:** [S2G]

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KPZ163 - Ecology

Description: A series of lectures and associated practicals introduces fundamental concepts in animal and plant ecology, and in animal behaviour and experimental design. A strong emphasis is placed on developing skills in practical ecology and scientific writing. Students are expected to participate in some group activities.

Requisites: COREQ - The School provides special notes MEXCL - KPA151, KZA150, KZA101, KZA105, KPZ101, KPZ160, KPZ161, KPZ165

Staff: Assoc Prof M Hindell, Assoc Prof SM Jones (Coordinator), Assoc Prof AMM Richardson, Dr E Wapstra, members of the School of Plant Science

Teaching Pattern: 3 lectures and 3-hr practical weekly (13 wks), some practicals taught as tutorials

Assessment: 3-hr exam (50%), 1,000-word essay (20%), practical assessment (30%)

Required Texts: Zoology 1 Practical Manual

Offered in Courses: [ S3A ] [ S3V ] [ OCS ]

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KPZ164 - Cell Biology, Genetics and Evolution

Description: A series of lectures and associated practicals introduce fundamental concepts in cell biology, algal biology, genetics, molecular biology and evolution.

Requisites: MEXCL - KPA150, KZA150, KPZ101, KPZ160, KPA120

Staff: Dr RJE Wiltshire, Assoc Prof GM Hallegraeff, Mr P Dalton (Coordinator) and School of Zoology staff

Teaching Pattern: 3 lectures and 3-hr lab session weekly; some lectures and/or practicals may be taught in tutorial mode

Assessment: 3-hr exam (60%), semester work (40%)

Required Texts: Campbell NA, Biology, 6th edn ISBN 0805319573

Offered in Courses: [ S3A ] [ S3B ] [ S3G ] [ S3T ] [ S3V ] [ S3Y ] [ R3I ]

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KQA102 - Ecology of Aquatic Sustainability

Description: The unit provides an introduction to aquatic animal population biology and the ecological theory and assessment of environmental impact in aquatic environments. Processes influencing the population biology of aquatic animals are examined, the methods by which the parameters of growth, recruitment and mortality are estimated, and the effects of human exploitation of wild aquatic populations (using fisheries case studies). The alternative of sustainable aquaculture is then examined. Key ecological and environmental issues associated with intensive aquaculture in aquatic environments are presented. Provides an introduction to methods for describing and analysing the response of aquatic communities to environmental disturbance, and guidelines for the design of environmental impact studies in aquatic systems.

Staff: Dr C Bolch (Coordinator), Dr N Moltschaniwskyj

Teaching Pattern: 2-hr lecture, 3-hr practical weekly (13 wks)

Assessment: end-of-sem theory exam (50%), practical reports and assignment (50%)

Offered in Courses: [ S2C ] [ S3K ] [ S3T ] [ S3G ] [ S3W ] [ S3Z ] [ S3I ]

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KQA103 - Intensive Crustacean & Zooplankton Culture

Description: Provides an overview of crustacean and zooplankton culture in Australia and South East Asia. The unit covers theoretical and practical aspects of aquaculture practices for commercially important crustaceans including marine and freshwater prawns, freshwater crayfish and mud crabs as well as those with significant aquaculture potential such as rock lobsters. Zooplankton such as brine shrimp (Artemia) and rotifers are important live feeds in the hatchery culture of many species and their biology and culture practices are also covered. Students develop an understanding of applied biology and culture techniques for each species and gain an appreciation of current trends and important industry issues such as the effects of prawn farm effluent on the environment.

Staff: Ms L. Ward

Teaching Pattern: 2x1-hr lectures, 3-hr practical weekly (13 wks)

Assessment: Theory exams (50%), continuous assessment (50%)

Offered in Courses: [ S3K ] [ S3G ] [ S3W ] [ S6K ] [ S7C ]

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KQA104 - Crustacean & Zooplankton Culture

Description: Has the same broad objectives as KQA103

Staff: Ms L. Ward
Units Coded K – Faculty of Science, Engineering & Technology

Teaching Pattern: 2x1-hr lectures, 3-hr practical weekly (13 wks)
Assessment: Theory exams (50%), continuous assessment (50%)
Offered in Courses: [ S2C ]

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KQA110 - Aquatic Zoology

Description: Provides a general introduction to the biology of aquatic animals, and investigates phylogenetic associations, morphology and aspects of physiology, nutrition and reproduction of aquatic invertebrates and vertebrates.

Staff: Prof C Carter (Coordinator), Ms L. Ward (lecturer)

Teaching Pattern: 2-hr lecture, 3-hr practical weekly (13 wks)

Assessment: practical reports (15%), tests (10%), assignments (15%), 3-hr exam (60%)

Required Texts: Offered in Courses: [ S2C ] [ S3K ] [ S3G ] [ S3T ] [ S3W ] [ S3Z ] [ S3I ]

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KQA121 - Ecology of Aquatic Ecosystems

Description: This unit develops students' understanding and practice of the scientific method in relation to learning the foundations of aquatic ecology including: biota and communities, physical properties of water and water bodies, primary and secondary production and biogeochemical cycling.

Staff: Dr C Burke (Coordinator), Dr M Porter

Teaching Pattern: 2x1-hr lectures weekly (13 wks) 11x3-hr lab sessions and 2x3-hr field trips

Assessment: practical reports (30%), essay (15%), 3-hr exam (55%)

Required Texts: Barnes RSK & Mann KH (eds), Fundamentals of Aquatic Ecology, ISBN 0632029838

Offered in Courses: [ S2C ] [ S3K ] [ S3G ] [ S3T ] [ S3W ] [ S3Z ]

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KQA124 - Introduction to Aquaculture

Description: Introduces students to all aspects of aquaculture. The lectures focus upon water quality and resources, types of aquaculture around the world, general management of aquaculture with specific focus on the rearing of salmonids. The practical aspects of the unit focus on the scientific principles underlying aquaculture and the development of skills that can be applied when working on fish farms these include, water quality testing and management, occupational health and safety issues, and plant management. Theoretical aspects of basic aquatic animal metabolism, site selection, water quality management, farm production and health management are also introduced. Students develop practical and animal handling/management skills as well as skills in critiquing literature and report writing.

Staff: Dr M Porter (Coordinator)

Teaching Pattern: 2-hr lecture, 3-hr practical weekly (13 wks)

Assessment: practical reports (40%), practical and theory tests (10%), final theory exam (50%)


Offered in Courses: [ S2B ] [ S3K ] [ S3G ] [ S3W ] [ S3Z ]

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KQA201 - Intensive Algal Culture

Description: Introduces the diversity and phylogeny of the algae and their ecological and economic significance. The underlying principles of algal growth and their physiological response to light, temperature and nutrients are examined, and students are taught the theory and practice of growing algae in test tubes through to hatchery production scales. The nutritional value of microalgae for marine bivalve larvae and the impact of harmful algae on human health and aquaculture are reviewed. Skills acquired in this unit are directly employable in hatcheries and nurseries within the aquaculture industry.

Staff: Dr C Bolch (Coordinator)

Teaching Pattern: 2x1-hr lectures, 3-hr practical weekly (13 wks)

Assessment: final theory exam (50%), mid-sem practical exam (20%), practical reports (30%)

Offered in Courses: [ S3K ] [ S3G ] [ S3W ] [ S6K ] [ S7C ]

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KQA204 - Scientific Analysis and Presentation for Aquaculture

**Special Note:** generally restricted to Aquaculture students; other students may enrol with permission of HoS Aquaculture

**Description:** Builds upon earlier units that teach statistics. The emphasis in this unit is on the conceptual understanding of statistical analyses commonly used by biologists. This is developed in the context of identifying clear biological hypotheses and the presentation and interpretation of the data, using statistics as a tool to help explore datasets. Students should be able to clearly analyse, interpret and present data in the context of the biology.

**Requisites:** PREREQ - KMA153

**Staff:** Dr N Moltschaniwskyj

**Teaching Pattern:** 2x1-hr lectures, 2-hr practical weekly (13 wks)

**Assessment:** internal assessment (50%), final theory exam (50%)


**Offered in Courses:** [ S3K ] [ S3G ] [ S3T ] [ S3Z ] [ S3I ]

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KQA207 - General Microbiology

**Description:** Is an introduction to microbial groups with special emphasis on their roles in disease and aquatic ecology. Microbial form and function (nutrition, metabolism and interrelationships) are discussed in the context of aquaculture and human health. Examples of microbial diseases of aquatic animals are considered.

**Requisites:** PREREQ - (S3T: 25% from Schedule A) MEXCL - CXA241

**Staff:** Dr C Burke (Coordinator)

**Teaching Pattern:** 2x1-hr lectures, 3-hr practical/tutorial weekly (12 wks)

**Assessment:** practical reports (20%), completed practical schedule (5%), laboratory diary (5%) 1,500-word essay (10%), semester test (10%), online test (5%), final 3-hr theory exam (45%)

**Required Texts:** Madigan MT & Martinko JM, *Biology of Microorganisms, 11th edn, 2006*

**Offered in Courses:** [ S2C ] [ S3I ] [ S3K ] [ S3G ] [ S3T ] [ S3Z ] [ S3W ] [ S3J ]

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KQA214 - Technology for Aquaculture

**Description:** Introduces students to important concepts in aquaculturual engineering and technology involving the application, construction and operation of farm components. Trips to farming facilities in the State are used to demonstrate the varieties of technologies used. This unit complements the husbandry Intensive Culture and Aquaculture Policy and Operations units.

**Staff:** Dr M Powell (Coordinator)

**Teaching Pattern:** 2-hr lecture, 3-hr practical equiv weekly (13 wks)

**Assessment:** Theory exam (50%) continuous assessment (50%)


**Offered in Courses:** [ S2C ] [ S3K ] [ S3G ] [ S3T ] [ S3Z ] [ S3W ] [ S6K ] [ S7C ]

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KQA218 - Applied and Environmental Microbiology

**Description:** Students learn how to carry out the scientific process within the context of microbial ecology and physiology. Using the basic concepts learnt in General Microbiology, the central theme of the unit is to understand how microbes grow in real-life situations as diverse as food and aquatic ecosystems.

**Requisites:** PREREQ - KQA207 or CXA241 or similar

**Staff:** Dr C Burke (Coordinator)

**Teaching Pattern:** 1-hr lecture, 2-hr tutorial weekly, 3-hr practical (13 wks)

**Assessment:** practical reports (15%), project (20%), sem test (10%), final 3-hr theory exam (55%)

**Required Texts:** Madigan MT & Martinko JM, *Biology of Microorganisms, 11th edn, 2006*

**Offered in Courses:** [ S3I ] [ S3K ] [ S3T ] [ S3G ] [ S3W ] [ S3Z ]

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KQA220 - Applied Algology

**Description:** Introduces the diversity and phylogeny of the algae and their ecological and economic significance. The underlying principles
of algal growth and their physiological response to light, temperature and nutrients are examined, and students are taught the theory and practice of growing algae in test tubes through to hatchery production scales. The nutritional value of microalgae for marine bivalve larvae and the impact of harmful algae on human health and aquaculture are reviewed. Skills acquired in this unit are directly employable in hatcheries and nurseries within the aquaculture industry.

Staff: Dr C Bolch (Coordinator)

Teaching Pattern: 2x1-hr lectures, 3-hr practical weekly (13 wks)

Assessment: final theory exam (50%), mid-sem practical exam (20%), practical reports (30%)

Offered in Courses: [S2C]

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KQA241 - Finfish Culture

Description: Provides students with a global and national perspective of finfish aquaculture; a detailed understanding of methods used in the aquaculture of selected commercial Australian and overseas finfish species; practical experience of key aspects of finfish aquaculture including fish spawning, larval rearing, grow-out and assessment of product quality. Salmonids, marine fishes, native Australian fishes and polyculture are discussed in relation to intensive and extensive aquaculture practice.

Staff: Dr J Purser (Coordinator), Dr M Porter

Teaching Pattern: 2h lecture, 3 hr practical weekly (13 wks)

Assessment: final theory exam (40%), in-course assessment (60%)

Offered in Courses: [S2C]

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KQA242 - Molluscan Culture

Description: Provides an overview of molluscan aquaculture, particularly in Tasmania and Australia. The unit focuses on the life cycles, applied biology, and hatchery and farm technology and techniques for a range of molluscan species: oysters, mussels, abalone, scallops, giant clams and pearl oysters. Emphasis is placed on the environmental requirements, reproduction, feeding, larval rearing and grow-out systems.

Requisites: PREREQ - KQA110 COREQ - KQA214

Staff: Dr N Moltschaniwskyj (Coordinator), Dr C Bolch, Dr C Burke

Teaching Pattern: 2x1-hr lectures, 3-hr practical weekly (13 wks)

Assessment: final exam (50%), internal assessment (50%)


Offered in Courses: [S2C]

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KQA270 - Aquaculture Professional Development

Description: Aquaculture Professional Development provides professional training and experience in a range of aquaculture facilities. Students must spend at least 2 weeks (10 days) during the first year of the Aquaculture diploma course carrying out work experience to fulfil the requirements of the diploma. They may work on farms, in laboratories, in government departments or in factories engaged in aquacultural activities. Activities such as participation in scientific expeditions or attending vocational training courses (diving, first aid, coxswain's ticket, etc) may also be considered after prior approval by the unit coordinator. The choice of several venues will broaden perspectives and experience of at least one commercial operation is essential. On successful completion of this unit, students should be capable of: (a) appreciating the daily routine on an aquaculture installation; (b) discussing culture and management problems associated with the aquaculture enterprises or institutions visited; (c) comprehending management procedures; and (d) putting aquaculture and scientific theory into practice. The unit also includes assessments based on a work experience seminar and written reports. Work placement is approved and reporting is monitored by the School work experience coordinator.

Staff: Dr John Purser Coordinator, Ms J Daniel

Teaching Pattern: 3 hrs tutorials weekly, 10 days field work

Assessment: professional placement for 10 days min, continuous assessment (diary, seminar, reports) 100%

Offered in Courses: [S2C]

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KQA271 - Fish Health Management

Description: Provides students with information on fish diseases in aquaculture. The focus of the unit is on fish health management, including disease prevention and treatment on fish farms. Emphasis is placed on practical components of the unit, including treatment calculations.

Requisites: MEXCL - KQA321
Staff: Dr B Nowak
Teaching Pattern: 2 hrs lectures, 1 hr tutorial, 2 hrs practicals weekly
Assessment: continuing assessment (50%), final exam (50%)

Offered in Courses: [ S2C ]

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KQA272 - Intensive Molluscan Culture

Description: Provides an overview of molluscan aquaculture, particularly in Tasmania and Australia. The unit familiarises students with the life cycles, applied biology, and hatchery and farm technology and techniques for a range of molluscan species; oysters, mussels, abalone, scallops, giant clams and pearl oysters. Emphasis will be placed on reproduction, feeding, larval rearing and grow-out systems. By the end of the unit students will be familiar with the basic life history and biology of molluscan species common in the industry, growout techniques for oysters, mussels, abalone and scallops, reproductive biology, broodstock condition and larval biology, and the use of triploidy animals in the industry

Requisites: PREREQ - KQA110
Staff: Dr N Moltschaniwskyj (Coordinator), Dr C Bolch, Dr C Burke
Teaching Pattern: 2 hrs lectures, 3 hrs practicals weekly
Assessment: lab reports (25%), practical test (15%), mid-sem test (10%), final exam (50%)


Offered in Courses: [ S3G ] [ S3K ] [ S3W ] [ S6K ] [ S7C ]

Unit Delivery Information:

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KQA302 - Scientific Analysis and Presentation for Aquaculture

Special Note: generally restricted to Aquaculture students; other students may enrol with permission of HoS Aquaculture; see also KQA204

Description: Students are taught the general principles of scientific writing for scientific reports, papers or theses. The theory and practice of statistics over a range of topics from t-tests, ANOVA, power analysis, correlation, and regression are covered. Emphasis is placed on an understanding of the concepts of statistical procedures, biological interpretation of the output and presentation of the results. An introduction to experimental design, word processing, spreadsheets and a statistical package is included.

Requisites: PREREQ - KMA153
Staff: Dr N Moltschaniwskyj (Coordinator)
Teaching Pattern: 2x1-hr lectures, 2-hr practical weekly (13 wks)
Assessment: final theory exam (50%), internal assessment (50%)

Recommended Texts: Fowler, Practical Statistics for Field Biology, 2nd edn, ISBN 0471982962

Offered in Courses: [ S6K ] [ S4E ] [ S7C ] [ M4E ]

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KQA319 - Nutrition of Aquatic Organisms

Description: Provides students with a detailed understanding of aquatic nutrition and the relationships to farming practice, feed formulation and the physiology and biochemistry of aquatic organisms. Feeding, growth and nutrition of aquatic organisms, the production of commercial aquaculture feeds, methods of analysis and practical experience of conducting nutrition experiments are integral parts of this unit.

Staff: Prof C Carter (Coordinator)
Teaching Pattern: 2-hr lecture, 3-hr practical weekly (13 wks)
Assessment: Continuous assessment (50%); end of semester theory exam (50%)


Offered in Courses: [ S3K ] [ S3G ] [ S3W ] [ S6K ] [ S7C ] [ S3I ]

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KQA320 - Intensive Finfish Culture

Description: Provides students with a global and national perspective of finfish aquaculture; a detailed understanding of methods used in the
aquaculture of selected commercial Australian and overseas finfish species; practical experience of key aspects of finfish aquaculture including fish spawning, larval rearing, grow-out and assessment of product quality. Salmonids, marine fishes, native Australian fishes and polyculture are discussed in relation to intensive and extensive aquaculture practice.

Staff: Dr J Purser (Coordinator), Dr M Porter

Teaching Pattern: 2-hr lecture, 3-hr practical weekly (13 wks)

Assessment: final theory exam (40%), in-course assessment (60%)

Offered in Courses: [ S3K ] [ S3G ] [ S3W ] [ S6K ] [ S7C ]

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KQA321 - Aquatic Animal Health

Description: Provides students with detailed understanding of animal health issues. Disease diagnosis and treatment are discussed with the main emphasis placed on health management. Host environment and pathogen relationships are examined. The unit covers immunology of aquatic animals. Problem solving exercises provide case histories for a variety of species.

Staff: Dr B Nowak (Coordinator)

Teaching Pattern: 13x2-hr lectures, 13x1-hr tutorials, 13x2-hr practicals

Assessment: final 3-hr theory exam (60%), continuous assessment (40%)

Offered in Courses: [ S3K ] [ S3G ] [ S3W ] [ S6K ] [ S7C ] [ S3Z ] [ S3I ]

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KQA322 - Aquaculture Policy and Operations A

Description: Integrates knowledge of aquaculture derived from other units with new concepts of government policy, operational costing of production, farm management, environmental impact assessment, animal ethics and sanitary regulations. The unit provides students with an appreciation and understanding of regulatory and commercial aspects of production.

Requisites: COREQ - KQA323

Staff: Dr J Purser (Coordinator), Dr M Powell, Dr B Nowak, Dr C Burke and guest lecturers

Teaching Pattern: 2 hrs lectures, 3 hrs tutorial weekly

Assessment: sem 1: continuous assessment (50%), project (50%); grade will be carried into KQA323

Offered in Courses: [ S3K ] [ S3W ]

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KQA323 - Aquaculture Policy and Operations B

Description: Integrates knowledge of aquaculture derived from other units with new concepts of government policy, operational costing of production, farm management, environmental impact assessment, animal ethics and sanitary regulations. The unit provides students with an appreciation and understanding of regulatory and commercial aspects of production.

Requisites: PREREQ - KQA322

Staff: Dr J Purser (Coordinator), Dr M Powell, Dr B Nowak, Dr C Burke and guest lecturers

Teaching Pattern: 2 hrs lectures, 3 hrs tutorial weekly

Assessment: Assessment from Part A ( KQA322 ) will be carried forward to KQA323. Sem 2: continuous assessment (20%), project (80%)

Offered in Courses: [ S3K ] [ S3W ]

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KQA325 - Aquaculture Biotechnology

Description: Covers specialist technological fields of toxicology, pharmacokinetics and biotechnology, with their molecular applications in aquaculture. The focus of the unit is on developing technologies and their relevance and significance to aquaculture, consequently its content will be reviewed regularly in the light of technological developments. The unit examines the technical, theoretical and ethical issues associated with biotechnology with a specific focus on application to aquatic species.

Staff: Dr M Powell (Coordinator), Dr B Nowak

Teaching Pattern: 2-hr lecture, 3-hr practical weekly (13 wks)

Assessment: practical components (20%), sem tests (20%), assignments (20%), final theory exam (40%)


Offered in Courses: [ S3K ] [ S3G ]

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KQA330 - Physiology of Aquatic Organisms

Description: Exposes students to a detailed examination of the physiology of aquatic organisms, with an emphasis on fish and crustaceans. Development, growth, respiration, osmoregulation and excretion, reproduction, endocrinology and sensory physiology are discussed in relation to the effects of natural and artificial environmental changes on physiological processes.

Staff: Dr B Nowak (Coordinator)

Teaching Pattern: 2-hr lecture, 3-hr practical weekly (13 wks)

Assessment: theory exam (50%), continuous assessment (50%)

Recommended Texts: Withers PC, Comparative Animal Physiology, ISBN 0030128471

Offered in Courses: [ S3K ] [ S3G ] [ S3W ] [ S6K ] [ S7C ] [ S3Z ] [ S3I ]

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KQA350 - Practicum (GradDip)

Special Note: Although a University staff member may be involved in arranging the work experience position for the student and would liaise directly with the manager of the facility to help overcome any problems which might occur, there would not usually be any on-site supervision by a University staff member.

Description: Students must spend at least 2 weeks (10 days) during the Aquaculture graduate diploma course carrying out work experience to fulfil the requirements of the graduate diploma. They may work on farms, in laboratories, in government departments or in factories engaged in aquacultural activities. Activities such as participation in scientific expeditions or attending vocational training courses (diving, first aid, coxswain's ticket, etc) may also be considered after prior approval by the unit coordinator. The choice of several venues will broaden perspectives and experience of at least one commercial operation is essential. On successful completion of this unit, students should be capable of: (a) appreciating the daily routine on an aquaculture installation; (b) discussing culture and management problems associated with the aquaculture enterprises or institutions visited; (c) comprehending management procedures; and (d) putting aquaculture and scientific theory into practice.

Staff: Dr J Purser (Coordinator); Mrs J Daniel

Teaching Pattern: Minimum of 38h weekly for 2 wks at an aquaculture facility

Assessment: Completion of 2 weeks work experience and the associated paperwork -- assessed on a pass/fail basis. Feedback from the manager of the facility in relation to the student's performance will be taken into account.

Offered in Courses: [ S6K ]

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KQA370 - Aquaculture Professional Development

Special Note: offered from 2006

Description: Aquaculture Professional Development provides professional training and experience in a range of aquaculture facilities. Students must spend at least 8 weeks (40 days) during their first 2.5 years of the Aquaculture Degree course carrying out work experience to fulfil the requirements of the Degree. They must spend not less than two weeks on commercial farms. They may work on farms, in laboratories, in government departments or in factories engaged in aquacultural activities. Activities such as participation in scientific expeditions or attending vocational training courses (diving, first aid, coxswain's ticket, etc) may also be considered after prior approval by the unit coordinator. The choice of several venues will broaden perspectives and experience of at least one commercial operation is essential. On successful completion of this unit, students should be capable of: (a) appreciating the daily routine on an aquaculture installation; (b) discussing culture and management problems associated with the aquaculture enterprises or institutions visited; (c) comprehending management procedures; and (d) putting aquaculture and scientific theory into practice. The unit also includes assessments based on a work experience seminar and written reports. Work placement is approved and reporting is monitored by the School work experience coordinator.

Staff: Dr J Purser (Coordinator), Mrs J Daniel

Teaching Pattern: 3 hrs tutorials weekly, 40 days field work

Assessment: professional placement for 40 days, continuous assessment (diary, seminar, reports) 100%

Offered in Courses: [ S3K ]

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KQA401/403 - Aquaculture Honours

Special Note: (midyear entry see KQA409, KQA411)

Description: The Honours course in Aquaculture is designed to provide training in skills, methods and knowledge of aquaculture and aquatic biology, and science in general beyond those obtained in an undergraduate degree program, and to prepare students for further research and learning. The course has been designed with 4 objectives: 1. To enable students to develop their science communication skills.
By the end of the course, a student should be capable of writing a scientific report or paper to a standard acceptable to a scientific journal, and of delivering a paper at a meeting of an a scientific society. 2. To provide students with experience of relevant field and laboratory procedures/techniques so that they possess sufficient technical skills to permit them to conduct an in-depth study of some specialised aspect of aquaculture. 3. To ensure that students are able to locate published information within a prescribed field of aquacultural knowledge, and are able to evaluate and summarise that information in order to identify key issues, trace historical developments and produce generalisations. 4. To provide students with the opportunity to conduct a scientific investigation and, in particular, to train them to plan and conduct a program of study within constraints imposed by time, money and technical resources, and develop an understanding of scientific approaches to problem solving.

**Requisites:** PREREQ - bachelor degree with appropriate background approved by faculty, generally with credit or better in the final 3 sem

**Staff:** Dr C Bolch (Coordinator), Dr C Burke, Dr N Moltschaniwskyj, Dr B Nowak, Dr M Powell, Dr J Purser, Prof C Carter, Dr M Porter, Ms L. Ward

**Teaching Pattern:** equiv 1 hr weekly group discussions, consultations with supervisor, field and lab based research

**Assessment:** literature review (8.3%), grant proposal (8.3%), seminar (25%), research thesis (58.4%)

**Offered in Courses:** [ S4M ] [ S4E ]

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**KQA409 - Aquaculture Honours (F/T)**

**Special Note:** Midyear entry only (semester one entry see KQA401, KQA403)

**Description:** See KQA401/403

**Staff:** Dr C Bolch (Coordinator), Dr C Burke, Dr N Moltschaniwskyj, Dr B Nowak, Dr M Powell, Dr J Purser, Prof C Carter, Dr M Porter, Ms L. Ward

**Teaching Pattern:** equiv 1 hr weekly group discussions, consultations with supervisor, field and lab based research

**Assessment:** literature review (8.3%), grant proposal (8.3%), seminar (25%), research thesis (58.4%)

**Unit Delivery Information:**

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**KQA410 - Aquaculture Honours (P/T)**

**Special Note:** Midyear entry only (semester one entry see KQA401, KQA403)

**Description:** See KQA401/403

**Unit Delivery Information:**

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**KQA411 - Aquaculture Honours (P/T)**

**Special Note:** Midyear entry only (semester one entry see KQA401, KQA403)

**Description:** See KQA401/403

**Staff:** Dr C Bolch (Coordinator), Dr C Burke, Dr N Moltschaniwskyj, Dr B Nowak, Dr M Powell, Dr J Purser, Prof C Carter, Dr M Porter, Ms L. Ward

**Teaching Pattern:** equiv 1 hr weekly group discussions, consultations with supervisor, field and lab based research

**Assessment:** literature review (8.3%), grant proposal (8.3%), seminar (25%), research thesis (58.4%)

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**KQA412/13 - Bachelor of Environmental Science Honours in Aquaculture**

**Special Note:**Sem 1 entry

**Description:** The unit will develop knowledge and skills in research oriented towards environmental science. Research training will be provided through workshops, seminars and completion of a research project in an appropriate area of environmental science. Students will be required to further develop their communication skills and understanding of environmental science through the review of a current environmental issue, the analysis and interpretation of research results, and communication of their research in a seminar and thesis.

**Staff:** Dr A Seen (Coordinator), Dr C Bolch, Dr C Burke, Dr N Moltschaniwskyj, Dr B Nowak, Dr M Powell, Dr J Purser, Prof C Carter, Dr M Porter, Ms L. Ward

**Teaching Pattern:** equiv 1 hr weekly group discussions, consultations with supervisor, field and lab based research

**Assessment:** Desktop study of a current environmental issue: 12.5%; Research proposal: 12.5%; Research seminar: 15%; Research thesis, including literature review: 60%

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**KQA414 - Bachelor of Environmental Science Honours in Aquaculture**

**Special Note:** Midyear entry

**Description:** The unit will develop knowledge and skills in research oriented towards environmental science. Research training will be provided through workshops, seminars and completion of a research project in an appropriate area of environmental science. Students will be required to further develop their communication skills and understanding of environmental science through the review of a current environmental issue, the analysis and interpretation of research results, and communication of their research in a seminar and thesis.

**Staff:** Dr A Seen (Coordinator), Dr C Bolch, Dr C Burke, Dr N Moltschaniwskyj, Dr B Nowak, Dr M Powell, Dr J Purser, Prof C Carter, Dr M Porter, Ms L. Ward
Teaching Pattern: equiv 1 hr weekly group discussions, consultations with supervisor, field and lab based research

Assessment: Desktop study of a current environmental issue: 12.5%; Research proposal: 12.5%; Research seminar: 15%; Research thesis, including literature review: 60%

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KQA415 - Bachelor of Environmental Science Honours in Aquaculture

Description: The unit will develop knowledge and skills in research oriented towards environmental science. Research training will be provided through workshops, seminars and completion of a research project in an appropriate area of environmental science. Students will be required to further develop their communication skills and understanding of environmental science through the review of a current environmental issue, the analysis and interpretation of research results, and communication of their research in a seminar and thesis.

Staff: Dr A Seen (Coordinator), Dr C Bolch, Dr C Burke, Dr N Moltchaniwskyj, Dr B Nowak, Dr M Powell, Dr J Purser, Prof C Carter, Dr M Porter, Ms L. Ward

Teaching Pattern: equiv 1 hr weekly group discussions, consultations with supervisor, field and lab based research

Assessment: Desktop study of a current environmental issue: 12.5%; Research proposal: 12.5%; Research seminar: 15%; Research thesis, including literature review: 60%

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KQA416 - Bachelor of Environmental Science Honours in Aquaculture

Special Note: Midyear entry

Description: The unit will develop knowledge and skills in research oriented towards environmental science. Research training will be provided through workshops, seminars and completion of a research project in an appropriate area of environmental science. Students will be required to further develop their communication skills and understanding of environmental science through the review of a current environmental issue, the analysis and interpretation of research results, and communication of their research in a seminar and thesis.

Staff: Dr A Seen (Coordinator), Dr C Bolch, Dr C Burke, Dr N Moltchaniwskyj, Dr B Nowak, Dr M Powell, Dr J Purser, Prof C Carter, Dr M Porter, Ms L. Ward

Teaching Pattern: equiv 1 hr weekly group discussions, consultations with supervisor, field and lab based research

Assessment: Desktop study of a current environmental issue: 12.5%; Research proposal: 12.5%; Research seminar: 15%; Research thesis, including literature review: 60%

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KQA720 - Nutrition of Aquaculture Animals

Special Note: Attendance at practical sessions is dependent on assessment option selected. Students must attend the field trip. Attendance at lectures and tutorials is non-compulsory.

Description: The unit is designed to provide students with a detailed understanding of aquaculture nutrition and covers the relationships between farming practice and the nutritional physiology and biochemistry of farmed aquatic animals, commercial feeds and their formulation, the importance of correct nutritional requirements and the use of different feed ingredients. Feeding, growth and nutrition of aquatic animals; the production of commercial aquaculture feeds; methods of analysis and critical assessment of nutrition experiments are integral parts of the unit.

Staff: Prof C. Carter (unit coordinator)

Teaching Pattern: 2 hour lectures, 1 hour tutorial, 2-3 hour practical (weekly, 13 weeks)

Assessment: Desk-top study (25%); Literature Review on Practical Assignments (25%); End of semester exam (50%)


Offered in Courses: C7H

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KQA721 - Physiology of Aquaculture Animals

Special Note: Attendance at practical sessions is dependent on assessment option selected. Attendance at lectures and tutorials is non-compulsory.

Description: This unit exposes students to a detailed examination of the physiology of aquatic organisms, with an emphasis on fish and crustaceans. Development, growth, respiration, osmoregulation and excretion, reproduction, endocrinology and sensory physiology are discussed in relation to the effects of natural and artificial environment changes on physiological processes.

Staff: Dr B. Nowak (unit coordinator)

Teaching Pattern: 13 2-hour lecture blocks, 3-hour practical sessions
Assessment: Desk-top study (25%); Literature review (25%); End of semester exam (50%)


KQA721 - Aquatic Animal Health

Description: This unit provides students with understanding of animal health issues. Disease diagnosis and treatment are discussed with the main emphasis placed on health management. Host, environment and pathogen relationships are examined. The unit covers immunology of aquatic animals. Problem-solving exercises provide case histories for a variety of species.

Staff: Dr B. Nowak (unit coordinator)

Teaching Pattern: 2-hour lectures, 1-hour tutorial, 2-hour practical (weekly, 13 weeks)

Assessment: Final 3 hour theory exam (60%); continuous assessment (40%)

Offered in Courses: [ C7H ]

Unit Delivery Information:

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KQA817 - Literature Review

Description: The student reviews a specific topic of interest which has been approved by the coordinator and staff members. The review is to be written as a scientific review incorporating material from the literature.

Requisites: COREQ - coursework as in the Graduate Diploma program

Staff: Dr C. Bolch (Coordinator)

Teaching Pattern: minimum of 6 wks library study and writing, with at least 5 hrs weekly staff contact

Assessment: written review, assessed by three staff members (60%), seminar assessed by staff members (40%)

Offered in Courses: [ S7C ]

Unit Delivery Information:

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KQA818 - Research Dissertation Part A

Special Note: this unit is taken with KQA819

Description: Requires the student to undertake a research project under the supervision of at least one staff member from the School of Aquaculture although programs may be undertaken in conjunction with other Schools. The project is generally undertaken on-campus although permission may be given for off-campus programs. The research is submitted in the form of a dissertation, and as a conference poster.

Requisites: PREREQ - Graduate Diploma in Aquaculture from this University to a level approved by the Faculty COREQ - KQA819

Staff: Dr C. Bolch (Coordinator)

Teaching Pattern: individual research projects divided into approximately 50% and 100% of time in semesters 1 and 2 respectively. Weekly meetings with supervisor

Assessment: dissertation assessed by 3 examiners including at least one staff member and an external assessor (80%), poster, assessed by three staff members (20%)

Offered in Courses: [ S7C ]

Unit Delivery Information:

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KQA819 - Research Dissertation Part A

Description: See KQA818 for fuller details.

Staff: Dr C. Bolch (Coordinator)
**KQA820 - Specialist Practical Skills**

**Special Note:** this unit is taken with KQA821. Although a University staff member may be involved in arranging the work experience position for the student, and would liaise directly with the manager of the facility to help overcome any problems which might occur, there would not usually be any on-site supervision by a University staff member.

**Description:** The student spends 8 weeks (40 days) carrying out work experience. They may work on farms, in laboratories, in government departments or in factories engaged in aquacultural activities. Activities such as participation in scientific expeditions or attending vocational training courses (diving, first aid, coxswain's ticket, etc) may also be considered after prior approval by the unit coordinator. The choice of several venues will broaden perspectives and experience of at least one commercial operation is essential. On successful completion of this unit, students should be capable of: (a) appreciating the daily routine on an aquaculture installation; (b) discussing culture and management problems associated with the aquaculture enterprises or institutions visited; (c) comprehending management procedures; and (d) putting aquaculture and scientific theory into practice.

**Requisites:** PREREQ - Graduate Diploma in Aquaculture from this University to a level approved by the Faculty  
COREQ - KQA821

**Staff:** Dr J Purser (Coordinator), Ms J Daniel

**Teaching Pattern:** Minimum of 38 hrs weekly for 8 weeks at an aquaculturel facility; at least 2 of the 8 wks should be spent on a farm if the preference is for lab-based work

**Assessment:** Completion of 8 weeks work experience and the associated paperwork assessed on a pass/fail basis. Feedback, from the manager of the facility in relation to the student's performance will be taken into account.

**Offered in Courses:** [ S7C ]

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**KQA821 - Specialist Practical Skills (Part B)**

**Description:** See KQA820 for full details.

**Staff:** Dr J. Purser (Coordinator)

**Offered in Courses:** [ S7C ]

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**KRA001 - Chemistry Foundation Unit**

**Description:** The Chemistry Bridging Program is an online unit. The unit runs over a seven-week period in January/February of each year, including a laboratory session, in week 2 of Semester 1 only for those students who subsequently enrol in first year Chemistry. The overall aim of the unit is to provide a strong working knowledge and competency in general chemistry to a level appropriate for further studies in chemistry. There are no entrance pre-requisites to study the Chemistry Bridging Program. The program is available to university and non-university students even if you do not intend to enrol in a university course.

The unit is examined. The grades to be awarded include Pass (50-59%), Credit (60-69%), Distinction (70-79%) and High Distinction (80+%). Failing grades will also be awarded.

Students who successfully complete the Chemistry Bridging Unit with a grade of Pass or better and who have satisfied one of the following - -pass in *MT730* or *MT841* or *KMA003* or HSC equivalent or TCE score of 80 or above -- will be eligible for enrolment in first year chemistry units at the University. In addition, students who successfully complete the unit will qualify for entry into any other units or degree programs which have *CH856* or equivalent as a prerequisite.

For further details, contact Secretary@chem.utas.edu.au

**Staff:** Dr BV O'Grady

**Teaching Pattern:** 6 wks online study (120 hrs)

**Assessment:** assignments (25%), lab, exam (75%)


**Offered in Courses:** [ SOF ]

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**KRA101 - Chemistry 1A**

**Description:** Together with Chemistry 1B, this is a core unit for the Chemistry major, and for Environmental Science, Science, Medical Laboratory Science and Aquaculture students, providing them with the fundamental knowledge and concepts in inorganic and physical chemistry. Inorganic Chemistry covers atomic structure, bonding theories, the systematic chemistry of s- and p- block elements and introduces the coordination chemistry of the transition metals, including the significance of coordination compounds in biology and the environment. Physical Chemistry in this unit involves a study of the behaviour of gases, the solubility of gases and inorganic and organic compounds, chemical and solution equilibria, colligative properties, acids, bases and buffers.
Requisites: PREREQ - CH856 or (KJC161 and KJC162 or KRA161 and KRA162)
Staff: Dr TW Lewis (Coordinator), Dr AJ Seen
Teaching Pattern: 3 hrs lectures, 1 hr tutorial weekly (13 wks) 3 hrs practical weekly (8 wks)
Assessment: 2 x 1-hr mid-sem tests (10% each), 3-hr and 2-hr end-of-sem exams (60%), lab work (20%)


Laboratory Manual and Diary, UTas


Offered in Courses: [ S3G ] [ OCS ]

Unit Delivery Information:

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**KRA102 - Chemistry 1B**

**Description:** Together with Chemistry 1A, this is a core unit for the Chemistry major, and for Environmental Science, Science, Medical Laboratory Science and Aquaculture students, providing them with the fundamental knowledge and concepts in organic and physical chemistry. Organic Chemistry covers the preparation, properties and reactions of the major classes of organic compounds, highlights their biological applications and includes an introduction to proteins, lipids and carbohydrates. Physical Chemistry involves a study of thermochemistry, calorimetry, thermodynamics, oxidation and reduction, batteries, corrosion and kinetics.

**Requisites:** PREREQ - CH856 or (KJC161 and KJC162 or KRA161 and KRA162)

**Staff:** Dr TW Lewis (Coordinator), Assoc Prof DC McWilliam

**Teaching Pattern:** 3 hrs lectures, 1 hr tutorial weekly (13 wks), 3 hrs practical weekly (8 wks)

**Assessment:** 2 x 1-hr mid-sem tests (10% each), 3-hr and 2-hr end-of-sem exams (60%), lab work (20%)


Laboratory Manual and Diary, UTas


**Offered in Courses:** [ E3J ] [ M3G ] [ S3K ] [ S3T ] [ M3H ] [ S3G ] [ S3Z ] [ S3I ]

**Unit Delivery Information:**

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**KRA113 - Chemistry 1A**

**Description:** Together with Chemistry 1B, this unit is a required prerequisite for those students intending to major in Chemistry and for those intending to proceed to second-year chemistry. It provides students with fundamental knowledge and concepts in inorganic, physical, analytical, and organic chemistry, with applications in both the physical and biological sciences. Topics include bonding and structure, equilibrium and acid-base chemistry, chemical kinetics, and the chemistry of organic functional groups. Laboratory sessions are designed to increase students' manipulative skills and, where possible, to reinforce the lecture program.

**Requisites:** PREREQ - * CH856 or ( KJC161 + KJC162) or [ KRA001 + (* MT730 or * MT841 or KMA003 or HSC equiv or TCE score of 80 or above)] MEXCL - all other first year chemistry units

**Staff:** Dr MG Gardiner (Coordinator)

**Teaching Pattern:** 3x1-hr lectures, 1-hr tutorial weekly (13 wks), weekly assignments and 3-hr lab (8 wks)

**Assessment:** 1-hr mid-sem test (10%); 3-hr end-of-sem exam (60%); lab work (20%), assignments (10%)

**Required Texts:** Lecture Notes, UTas School of Chemistry


Laboratory Manual and Diary, UTas, School of Chemistry


Molecular models for organic & inorganic chemistry, ISBN 0534491057

Harris DC, Quantitative Chemical Analysis, 6th edn, ISBN 0716744643

Aylward G & Finlay T, SI Chemical Data, 5th edn, ISBN 0470800445

**Offered in Courses:** [ S3G ] [ S3T ] [ S3V ] [ S3Y ] [ S3I ]

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**KRA114 - Chemistry 1B**

**Description:** Together with Chemistry 1A, this unit is a required prerequisite for those students intending to major in Chemistry and for those intending to proceed to second-year chemistry. It provides students with fundamental knowledge and concepts in inorganic, physical, analytical, and organic chemistry, with applications in both the physical and biological sciences. Topics include thermodynamics, coordination chemistry, separation techniques, the chemistry of organic functional groups and an introduction to lipids, carbohydrates and proteins. Laboratory sessions are designed to increase students' manipulative skills and, where possible, to reinforce the lecture program.
Requisites: PREREQ - * CH856 or ( KJC161 + KJC162) or [ KRA001 + (* MT730 or * MT841 or KMA003 or HSC equiv or TCE score of 80 or above]) MEXCL - all other first year chemistry units

Staff: Dr MG Gardiner (Coordinator)

Teaching Pattern: 3x1-hr lectures, 1-hr tutorial weekly (13 wks), weekly assignments and 3-hr lab (8 wks)

Assessment: 1-hr mid-sem test (10%); 3-hr end-of-sem exam (60%); lab work (20%), assignments (10%)

Required Texts: Lecture Notes, UTas School of Chemistry
Laboratory Manual and Diary, UTas, School of Chemistry

Molecular models for organic & inorganic chemistry, ISBN 0534491057
Harris DC, Quantitative Chemical Analysis, 6th edn, ISBN 0716744643
Aylward G & Finlay T, SI Chemical Data, 5th edn, ISBN 0470800445

Offered in Courses: [ S3G ] [ S3T ] [ S3V ] [ S3Y ] [ S31 ]

Unit Delivery Information:

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KRA121 - Chemistry 1 (Applied Agriculture)

Special Note: restricted to BAppSc(Agr) and BAppSc(Hort) students; taught by School of Chemistry

Description: A self-paced program which provides a basic knowledge of chemistry and its applications, introducing the interactions occurring between atoms and molecules and their effect on solids, liquids and gases; the physical chemistry of solutions and the calculation of values such as equilibrium constants and pH in aqueous solutions; and elementary organic chemistry including synthesis and reactions of aliphatic and aromatic hydrocarbons, alcohols, acids and bases.

Requisites: MEXCL - all other year-1 chemistry units

Staff: Dr G Dicinoski (Coordinator)

Teaching Pattern: up to 4 hrs laboratory/tutorials weekly, plus self-paced learning modules (equiv to 26 lectures)

Assessment: 1-hr mid sem test (10%), 3-hr exam (40%), 9 wks lab (20%), assignments (30%)

Laboratory Manual and Diary, UTas, School of Chemistry

Unit Delivery Information:

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KRA123 - Chemistry 1A (Agricultural Science)

Description: Together with Chemistry 1B (Agricultural Science), this unit provides students with fundamental knowledge and concepts in inorganic, physical, analytical, and organic chemistry, with applications in both the physical and biological sciences. Topics include bonding and structure, equilibrium and acid-base chemistry, chemical kinetics, and the chemistry of organic functional groups. Laboratory sessions are designed to increase students' manipulative skills and, where possible, to reinforce the lecture program.

Requisites: PREREQ - CHM5C or CH856 or ( KJC161 + KJC162) or [ KRA001 + (* MT730 or * MT841 or KMA003 or HSC equiv or TCE score of 80 or above]) MEXCL - all other year-1 chemistry units

Staff: Dr MG Gardiner (Coordinator)

Teaching Pattern: 3x1-hr lectures, 1-hr tutorial weekly (13 wks), weekly assignments and 3-hr lab (8 wks)

Assessment: 1-hr mid-sem test (10%); 3-hr end-of-sem exam (60%); lab work (20%), assignments (10%)

Required Texts: Lecture Notes, UTas School of Chemistry
Laboratory Manual and Diary, UTas, School of Chemistry

Molecular models for organic & inorganic chemistry, ISBN 0534491057

Offered in Courses: [ S3A ]

Unit Delivery Information:

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KRA124 - Chemistry 1B (Agricultural Science)

Special Note: restricted to Agricultural Science students; taught by School of Chemistry in conjunction with KRA110 Chemistry 1A

Description: Together with Chemistry 1A (Agricultural Science), this unit provides students with fundamental knowledge and concepts in inorganic, physical, analytical, and organic chemistry, with applications in both the physical and biological sciences. Topics include thermodynamics, coordination chemistry, separation techniques, the chemistry of organic functional groups and an introduction to lipids,
carbohydrates and proteins. Laboratory sessions are designed to increase students' manipulative skills and, where possible, to reinforce the lecture program.

**Requisites:** PREREQ - * CH856 or ( KJC161 + KJC162) or [ KRA001 + (* MT730 or * MT841 or KMA003 or HSC equiv or TCE score of 80 or above)] MEXCL - all other first year chemistry units

**Staff:** Dr MG Gardiner (Coordinator)

**Teaching Pattern:** 3x1-hr lectures, 1-hr tutorial weekly (13 wks), weekly assignments and 3-hr lab (8 wks)

**Assessment:** 1-hr mid-sem test (10%); 3-hr end-of-sem exam (60%); lab work (20%), assignments (10%)

**Required Texts:** Lecture Notes, UTas School of Chemistry


Laboratory Manual and Diary, UTas, School of Chemistry


Molecular models for organic & inorganic chemistry, ISBN 0534491057


**Offered in Courses:** [ S3A ]

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**KRA145 - Chemistry Option (Medicine)**

**Special Note:** available to Medicine students; although not a prereq for the Medical course, provides an excellent preparation for it. Taught by the School of Chemistry in conjunction with KRA113 Chemistry IA

**Description:** This unit provides students with fundamental knowledge and concepts in inorganic, physical, analytical, and organic chemistry, with applications in both the physical and biological sciences. Topics include bonding and structure, equilibrium and acid-base chemistry, chemical kinetics, and the chemistry of organic functional groups. Laboratory sessions are designed to increase students' manipulative skills and, where possible, to reinforce the lecture program.

**Requisites:** PREREQ - * CH856 or ( KJC161 + KJC162) or [ KRA001 + (* MT730 or * MT841 or KMA003 or HSC equiv or TCE score of 80 or above)] MEXCL - all other first year chemistry units

**Staff:** Dr M G Gardiner (Coordinator)

**Teaching Pattern:** 3 lectures, 1 tutorial weekly (13 wks), weekly assignments, 3 hrs lab (8 wks)

**Assessment:** mid-sem test (10%), 3-hr end-of-sem exam (60%), lab work (20%), assignments (10%)

**Required Texts:** Lecture Notes, UTas School of Chemistry


Laboratory Manual and Diary, UTas, School of Chemistry


Molecular models for organic & inorganic chemistry, ISBN 0534491057


**Offered in Courses:** [ E3J ] [ S2B ] [ S3K ] [ S3T ] [ M3H ]

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**KRA161 - Chemistry for Life Sciences**

**Description:** For students with no previous knowledge of Chemistry who intend to study science, particularly the biological sciences (see also KRA162). The unit provides the background and fundamental knowledge in chemistry required for these areas and highlights applications in this area. It includes an introduction to the properties and structure of matter, physical and chemical changes, and simple bonding theory. Solution behaviour, concentration and related calculations are covered together with acids, bases and the pH scale. General reaction types, the properties of some common elements, the gas laws, nuclear chemistry and oxidation and reduction are also covered.

**Staff:** Assoc Prof DC McWilliam

**Teaching Pattern:** 2 hrs lectures, 1 hr tutorial, 2 hrs practical weekly (10 wks)

**Assessment:** 1-hr mid-sem text (10%), 3-hr end-of-sem exam (65%), lab work (15%), assignments (10%)


**Offered in Courses:** [ E3J ] [ S2B ] [ S3K ] [ S3T ] [ M3H ]

**Unit Delivery Information:**

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**KRA162 - Biological Chemistry**

**Description:** Extends the concepts established in KRA161, Chemistry for Life Sciences and applies them to biological systems, concentrating on biochemicals and their interconversions. The unit covers basic organic chemistry, pH and buffers, the main classes of
biochemicals, proteins, lipids, carbohydrates, DNA, and their synthesis and breakdown. Biological Chemistry also provides necessary background for Chemistry 1.

**Requisites:** PREREQ - KJC161 or KRA161 MEXCL - CXA125

**Staff:** Dr AJ Seen (Coordinator), Assoc Prof DC McWilliam, Dr TW Lewis

**Teaching Pattern:** 2 hrs lectures, 1 hr tutorial, 3 hrs practical weekly (8 wks)

**Assessment:** 1-hr mid-sem test (10%), 3-hr end-of-sem exam (60%), lab work (20%), assignments (10%)


KRA 162 Biological Chemistry Laboratory Manual (available from UniPrint)
KRA162 Biological Chemistry Laboratory Diary (available from UniPrint)

**Recommended Texts:** KRA162 Biological Chemistry Lecture Notes (available from UniPrint)

**Offered in Courses:** [ E3J ] [ S2B ] [ S3K ] [ S3T ] [ M3H ]

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### KRA163 - Chemistry A (Pharmacy)

**Description:** Together with Chemistry 1B (Pharmacy), this unit provides students with fundamental knowledge and concepts in inorganic, physical, analytical, and organic chemistry, with applications in both the physical and biological sciences. Topics include bonding and structure, equilibrium and acid-base chemistry, chemical kinetics, and the chemistry of organic functional groups. Laboratory sessions are designed to increase students' manipulative skills and, where possible, to reinforce the lecture program.

**Requisites:** PREREQ - * CH856 or ( KJC161 + KJC162) or [ KRA001 + (* MT730 or * MT841 or KMA003 or HSC equiv or TCE score of 80 or above)] MEXCL - all other year-1 chemistry units

**Staff:** Dr MG Gardiner (Coordinator)

**Teaching Pattern:** 3x1-hr lectures, 1-hr tutorial weekly (13 wks), weekly assignments and 3-hr lab (8 wks)

**Assessment:** 1-hr mid-sem test (10%); 3-hr end-of-sem exam (60%); lab work (20%), assignments (10%)

**Required Texts:** Lecture Notes, UTas School of Chemistry
Laboratory Manual and Diary, UTas, School of Chemistry

*Molecular models for organic & inorganic chemistry*, ISBN 0534491057

**Offered in Courses:** [ M3F ]

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### KRA164 - Chemistry B (Pharmacy)

**Description:** Together with Chemistry 1A (Pharmacy), this unit provides students with fundamental knowledge and concepts in inorganic, physical, analytical, and organic chemistry, with applications in both the physical and biological sciences. Topics include thermodynamics, coordination chemistry, separation techniques, the chemistry of organic functional groups and an introduction to lipids, carbohydrates and proteins. Laboratory sessions are designed to increase students' manipulative skills and, where possible, to reinforce the lecture program.

**Requisites:** PREREQ - * CH856 or ( KJC161 + KJC162) or [ KRA001 + (* MT730 or * MT841 or KMA003 or HSC equiv or TCE score of 80 or above)] MEXCL - all other first year chemistry units

**Staff:** Dr MG Gardiner (Coordinator)

**Teaching Pattern:** 3x1-hr lectures, 1-hr tutorial weekly (13 wks), weekly assignments and 3-hr lab (8 wks)

**Assessment:** 1-hr mid-sem test (10%); 3-hr end-of-sem exam (60%); lab work (20%), assignments (10%)

**Required Texts:** Lecture Notes, UTas School of Chemistry
Laboratory Manual and Diary, UTas, School of Chemistry

*Molecular models for organic & inorganic chemistry*, ISBN 0534491057

**Offered in Courses:** [ M3F ]

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KRA170 - Chemistry of Materials

Special Note: restricted to Engineering and Surveying students; taught by School of Chemistry

Description: Develops a basic knowledge of chemistry and chemical principles necessary for the understanding of the physical and chemical properties of materials. Topics include an introduction to chemical theory, bonding and intermolecular forces, water chemistry, metals, alloys, silicates, glasses, cements, equilibria, thermochemistry, electrochemistry, petroleum, surfactants, chemical explosives and polymer chemistry.

Requisites: PREREQ - TCE Applied Science --- Physical Sciences and * MT841 or HSC equiv MEXCL - all other first year chemistry units

Staff: Prof A J Canty (Coordinator)

Teaching Pattern: 3x1-hr lectures 1-hr tutorial weekly (13 wks), weekly assignments, 2-hr practical classes (6 wks)

Assessment: 3-hr end-of-sem exam (60%), lab (20%), assignments (10%), mid-sem test (10%)

Required Texts: Lecture Notes, UTas School of Chemistry
Laboratory Manual and Diary, UTas, School of Chemistry

Recommended Texts: Glanville JO, General Chemistry for Engineers, Prentice Hall, 2003

Offered in Courses: [ N3A ]

Unit Delivery Information:

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KRA201 - Analytical Chemistry

Description: Encompasses a theoretical and practical treatment of quantitative analytical chemistry. Methods for sampling, digestion of samples and separation of sample constituents are surveyed. Classical methods of analysis (gravimetric and titrimetric) are studied in detail throughout this unit. Students are introduced to instrumental methods of analysis through a study of selected techniques (ultraviolet-visible spectrometry, atomic absorption spectrometry, potentiometry, gas chromatography and liquid chromatography). The laboratory component provides experience in the analysis of real and relevant environmental samples.

Requisites: PREREQ - KJC103 or KRA103 or KRA110 MEXCL - KRA213

Staff: Dr AJ Seen (Coordinator), Assoc Prof DC McWilliam

Teaching Pattern: 3 hrs lectures/tutorial, 3 hrs practical weekly (11 wks)

Assessment: 1-hr mid-sem test (10%), practical (30%), 3-hr exam (60%)

Required Texts: Harris DC, Quantitative Chemical Analysis, 6th edn, Freeman, 2002

Offered in Courses: [ S3K ] [ S3Z ] [ S3I ]

Unit Delivery Information:

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KRA211 - Environmental Chemistry

Special Note: Students who would like to do this unit but have a timetable problem with either tutorials or laboratory work should consult the Head of School or unit coordinator.

Description: Develops an understanding of the chemical behaviour of important elements and compounds in the environment with an emphasis on marine and atmospheric chemistry. The chemistry of water is a recurrent theme as it emphasises the link between natural chemical systems and organisms. The unit is complemented by visits to selected government and commercial treatment plants and laboratories.

The unit not only meets the needs of chemists but has direct relevance to students with interests in earth sciences, life sciences and environmental studies.

Requisites: PREREQ - KRA110 or * KRA130 or KJC103

Staff: Dr TW Lewis (Coordinator)

Teaching Pattern: 3x1-hr lectures weekly, assignments, excursions

Assessment: 3-hr paper (75%), essays and reports (25%)

Required Texts: Lecture Notes, UTas School of Chemistry


Offered in Courses: [ S3G ] [ S3T ] [ S3Z ] [ S3Y ] [ S3I ]

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KRA213 - Analytical Chemistry

Special Note: Students who would like to do this unit but have a timetable problem with either tutorials or laboratory work should please consult the Head of School or unit coordinator. Summer School enrolment only with permission of Head of School.

Description: Provides a sound introduction to the principles and practice underlying quantitative analytical chemistry, including some important instrumental techniques. The emphasis is on the analysis of aqueous systems relevant to environmental, industrial and other applications including the application of spectroscopic methods (AA, UV/vis, fluorimetry) and electrochemistry (potentiometry, ion selective electrodes). The laboratory sessions complement lectures, provide practical experience in the analytical methods discussed and emphasise good laboratory practice especially in the area of chemical analysis and safety. Particular emphasis is placed on obtaining accurate results and on statistical analysis, specifically relating to data handling and the reporting of results. The unit not only meets the needs of chemists but has direct relevance to students with interests in earth sciences, life sciences, environmental studies and biotechnology,
**KRA215 - Chemistry for Life Sciences**

**Description:** Covers organic and inorganic aspects of chemistry, with particular emphasis on the interrelationship of chemistry with the life sciences. Lectures include aspects of spectroscopic techniques applicable to a wide range of chemical studies, followed by lectures in: stereochemistry; advanced functional group chemistry, particularly relating structure to properties; principles of bio-inorganic chemistry.

**Required Texts:**
- Laboratory Manual, UTas, School of Chemistry

**Offered in Courses:**
- [ S3G ] [ S3G ] [ S3G ] [ S3G ] [ S3T ] [ S3Y ] [ S3I ]

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**Special Note:** Students who would like to do this unit but have a timetable problem with either tutorials or laboratory work should consult the Head of School or unit coordinator.

**Requisites:**
- PREREQ - KRA110 or KRA130 or KRA115 or KRA120 or KRA160 or KJC103 MEXCL - KJC252

**Staff:** Dr AJ Blackman (Coordinator)

**Teaching Pattern:** 2x1-hr lectures weekly, 11 tutorials, 4-hr lab weekly (12 wks), assignments (6 wks)

**Assessment:** 3-hr paper (70%), lab assessments (25%), assignments (5%)

**Required Texts:**
- Lecture Notes, UTas, School of Chemistry
- *Laboratory Manual*, UTas, School of Chemistry

**Recommended Texts:**

**Offered in Courses:**
- [ S3G ] [ S3G ] [ S3G ] [ S3G ] [ S3T ] [ S3Y ] [ S3I ]

**KRA216 - Chemistry 2A**

**Description:** Builds on KRA110 and consolidates the theoretical and practical framework required by students who intend to major in chemistry or who need additional chemistry to support their studies in other science areas. Emphasis is placed on the application of modern techniques in the elucidation of chemical structure, the physical and chemical properties and synthesis of organic, inorganic and organometallic compounds (especially transition metal coordination complexes and organometallic chemistry of the main group), an introduction to solid state chemistry and the mechanisms of chemical reactions. The physical chemistry lectures provide some of the necessary theoretical background in kinetics, thermodynamics, photochemistry and electrochemistry required to understand the behaviour of chemical systems. The laboratory program reinforces concepts introduced in lectures and gives students experience in good laboratory practice.

**Requisites:**
- PREREQ - KRA110 or KJC103 or *KRA130 MEXCL - KRA215, KRA222, KRA262 COREQ - KRA217

**Staff:** Dr AJ Blackman (Coordinator)

**Teaching Pattern:** 2x1-hr lectures weekly (26 wks), 24x1-hr tutorials, 4-hr lab (24 wks), assignments (12 wks)

**Assessment:** end-of-sem exams -- sem 1, 1x3-hr paper (35%); sem 2 -- 1x3-hr paper (35%), lab assessment (25%); assignments and tests (5%)

**Required Texts:**
- Lecture Notes, UTas, School of Chemistry
- *Laboratory Manual*, UTas, School of Chemistry

**Recommended Texts:**

**Offered in Courses:**
- [ S3G ] [ S3I ]
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KRA217 - Chemistry 2B

**Special Note:** Students who would like to do this unit but have a timetable problem with either tutorials or laboratory work should consult the Head of School or unit coordinator. On completion of KRA216 students are awarded an XX result (result shown in another unit), the final result for this unit is awarded on completion KRA217. Students are required to enrol concurrently in KRA216 and KRA217.

**Description:** Builds on KRA110, and consolidates the theoretical and practical framework required by students who intend to major in chemistry or who need additional chemistry to support their studies in other science areas. Emphasis is placed on the application of modern techniques in the elucidation of chemical structure, the physical and chemical properties and synthesis of organic, inorganic and organometallic compounds (especially transition metal coordination complexes and organometallic chemistry of the main group), an introduction to solid state chemistry and the mechanisms of chemical reactions. The physical chemistry lectures provide some of the necessary theoretical background in kinetics, thermodynamics, photochemistry and electrochemistry required to understand the behaviour of chemical systems. The laboratory program reinforces concepts introduced in lectures and gives students experience in good laboratory practice.

**Requisites:** PREREQ - KRA110 or KJC103 or * KRA130 MEXCL - KRA215, KRA222, KRA262 COREQ - KRA216

**Staff:** Dr AJ Blackman (Coordinator)

**Teaching Pattern:** 2x1-hr lectures weekly (26 wks), 24x1-hr tutorials, 4-hr lab (24 wks), assignments (12 wks)

**Assessment:** end-of-sem exams -- sem 1, 1x3-hr paper (35%); sem 2 -- 1x3-hr paper (35%), lab assessment (25%); assignments and tests (5%)

**Required Texts:** Lecture Notes, UTas, School of Chemistry

Laboratory Manual, UTas, School of Chemistry


Shriver DR & Atkins PW, Inorganic Chemistry, ISBN 0716736241

Williamson KL, Macroscale and Microscale Organic Experiments, ISBN 0618197028

**Recommended Texts:** Atkins PW & de Paula J, Physical Chemistry, ISBN 0198792859


**Offered in Courses:** [ S3G ] [ S3I ]

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KRA222 - Organic Chemistry (Agricultural Science)

**Special Note:** restricted to Agricultural Science students; taught by School of Chemistry

**Description:** Covers organic aspects of chemistry, placing particular emphasis on the interrelationship of organic chemistry with the life sciences. Initial lectures include the fundamentals of spectroscopic techniques applicable to a wide range of chemical studies, followed by lectures in: stereochemistry; functional group chemistry, particularly relating structure to properties; and bio-organic chemistry. Laboratory sessions include experiments illustrating specific lecture topics, identification, and small scale preparation of organic compounds.

**Requisites:** PREREQ - KRA120 MEXCL - KRA210, KRA215, KRA262

**Staff:** Dr AJ Blackman (Coordinator)

**Teaching Pattern:** 31 lectures and 11 tutorials, 16 hrs lab, assignments (6 wks)

**Assessment:** 3-hr exam (75%), lab assessment (20%), assignments (5%)

**Required Texts:** Lecture Notes, UTas, School of Chemistry

Laboratory Manual, UTas, School of Chemistry

Bruice PY, Organic Chemistry, ISBN 0139083936

Shriver DR & Atkins PW, Inorganic Chemistry, ISBN 0139083936

**Recommended Texts:** Atkins PW & de Paula J, Physical Chemistry, ISBN 0198792859


Williamson KL, Macroscale and Microscale Organic Experiments, ISBN 0618197028

**Offered in Courses:** [ S3A ]

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KRA262 - Organic Chemistry (Pharmacy)

**Special Note:** restricted to Pharmacy students; taught by School of Chemistry

**Description:** Covers organic aspects of chemistry with particular emphasis on the interrelationships of organic chemistry with the life sciences. Initial lectures include the fundamental aspects of spectroscopic techniques applicable to a wide range of chemical studies, followed by lectures in: stereochemistry; functional group chemistry, particularly relating structure to properties; and bio-organic chemistry. Laboratory sessions include experiments illustrating specific lecture topics, identification, and small-scale preparation of organic compounds.

**Requisites:** PREREQ - KRA160 MEXCL - KRA210, KRA222, KRA215

**Staff:** Dr AJ Blackman (Coordinator)
Teaching Pattern: 31 lectures, 11 tutorials, 16 hrs lab, assignments (6 wks)
Assessment: 3-hr exam (75%), lab (20%), assignments (5%)
Required Texts: Lecture Notes, UTas, School of Chemistry
Laboratory Manual, UTas, School of Chemistry

**KRA300 - Environmental Monitoring and Remediation**

Special Note: Will be offered in 2007
Description: This unit aims to develop an understanding of the sources and fate of chemical contaminants in the environment and the skills required to undertake an environmental assessment, including formation of sampling plans, selection of monitoring techniques, application of ecotoxicology based guidelines, and preparation of chemical mass balances and inventories. An overview of the technologies used for minimising pollution, disposal and containment of chemical contaminants, and remediation of impacted sites will also be covered.
Requisites: PREREQ - KJC252 or KRA201 or KRA213
Staff: Dr Andrew Seen (coordinator), Dr Trevor Lewis, Assoc Prof Don McWilliam and Hobart based staff where appropriate.
Teaching Pattern: 3 hours of lectures per week
Assessment: Assignments 10%, Project Report 30% (preparation of an environmental management plan), Examination 3 hours 60%
Offered in Courses: [ S3Z ]

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**KRA303 - Instrumental Analytical Chemistry**

Special Note: Students who would like to do this unit but have a timetable problem with laboratory work should please consult the Head of School or unit coordinator.
Description: Concentrates on giving a sound foundation to the theory and application of modern instrumental techniques, explaining how these are applied to chemical analysis. Topics are selected from: chromatographic separation techniques -- ion chromatography, high performance liquid chromatography, solid phase extraction, capillary electrophoresis and gas chromatography; electroanalytical methods -- voltammetry and amperometry; spectroscopy -- atomic absorption/emission, flameless techniques and hyphenated methods; flow analysis -- flow injection, and online process stream analysis; and the application of quality assurance principles in an analytical laboratory.
Requisites: PREREQ - KRA213 or KRA210 or KJC252
Staff: Dr GW Dicinoski (Coordinator)
Teaching Pattern: 2x1-hr lectures weekly, 4-hr lab weekly (13 wks, including industry visit).)
Assessment: 3-hr paper (70%); lab (30%).
Required Texts: Lecture Notes, UTas, School of Chemistry
Laboratory Manual, UTas, School of Chemistry

Recommended Texts: Harris DC, *Quantitative Chemical Analysis*, ISBN 0716744643
Offered in Courses: [ S3G ] [ S3Z ] [ S3Y ]

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**KRA305 - Biosynthesis & Function of Natural Products**

Special Note: Students who would like to do this unit but have a timetable problem with laboratory work should consult the Head of School or unit coordinator.
Description: Highlights the chemistry of important naturally occurring organic and inorganic compounds from both the terrestrial and marine environment. The principles of biosynthesis of the major groups of secondary metabolites and the chemistry and properties of selected natural products (marine natural products and the alkaloids) are introduced. The role that these compounds play in the natural environment is emphasised (chemical ecology). Aspects of biological inorganic chemistry are included. The laboratory program is devoted to the testing for, and the isolation and identification of, natural products found in Tasmania. An excursion will illustrate collecting and testing in the field.
Requisites: PREREQ - KRA210 or KRA215 or KRA222
Staff: Dr AJ Blackman (Coordinator)
Teaching Pattern: 26x1-hr lectures, 4-hr lab weekly (10 wks), an excursion
Assessment: 3-hr end-of-semester exam (70%), lab assessment (30%)
Required Texts: Lecture Notes, UTas, School of Chemistry
Laboratory Manual, UTas, School of Chemistry

Mann J, *Chemical Aspects of Biosynthesis*, ISBN 0198556764
KRA306 - Instrumental Chemistry

Description: Concentrates on giving a sound foundation to the theory and application of modern instrumental techniques, explaining how these are applied to chemical analysis. Topics are selected from: chromatography, X-ray spectroscopy, atomic spectroscopy, electrochemistry and flow injection analysis.

Requisites: PREREQ - KJC252 or KRA201 or KRA213 MEXCL - KRA303

Staff: Dr Trevor Lewis (coordinator), Assoc Prof Don McWilliam, Dr Andrew Seen and Hobart based staff where appropriate.

Teaching Pattern: Lectures 3hrs per week, Practical 4 hrs per week

Assessment: Assignments 10% Practical Report 30% Examination 60%

Offered in Courses: [S3G] [S3V] [S3Y] [S3I]

KRA310 - Chemistry 3A Part 1

Special Note: Students who would like to do this unit but have a timetable problem with laboratory work should consult the Head of School or unit coordinator. On completion of KRA310 students are awarded an XX result (result shown in another unit), the final result for this unit is awarded on completion KRA311. Students are required to enrol concurrently in KRA310 and KRA311.

Description: A core unit in chemistry of interest to chemistry majors, especially those proceeding to higher degrees and to employment as professional chemists. Some basic computing skills are desirable but not essential for this unit, which provides students with a firm grasp of modern chemical theory and industrial chemistry, and covering selected areas of both physical and inorganic chemistry. Topics include surface chemistry, extractive metallurgy, pulp and paper chemistry; molecular thermodynamics; non-electrolyte mixtures and advanced inorganic chemistry topics, synthesis and structure determination, molecular spectroscopy, radionuclear chemistry, polymer chemistry, molecular symmetry and applications.

Requisites: PREREQ - KRA210 or KRA213 and KRA215 COREQ - KRA311

Staff: Dr MG Gardiner (Coordinator)

Teaching Pattern: 39x1-hr lectures, 13 tutorials, 117 hrs lab, assignments (sem 1 and 2 combined)

Assessment: 3-hr exam end-of-sem 1 (39%), 2-hr exam end-of-sem 2 (26%), lab assessment (30%), assignments (5%)

Required Texts: Lecture Notes, UTas School of Chemistry
Laboratory Manual, UTas, School of Chemistry

Atkins PW, Physical Chemistry, ISBN 0716728710
Atkins PW, The Elements of Physical Chemistry, ISBN 0198792905
Brown JM, Molecular Spectroscopy, ISBN 019855785X
Carter RL, Molecular Symmetry and Group Theory, ISBN 0471149551

Offered in Courses: [S3G] [S3I]

KRA311 - Chemistry 3A Part 2

Special Note: Students who would like to do this unit but have a timetable problem with laboratory work should consult the Head of School or unit coordinator. On completion of KRA310 students are awarded an XX result (result shown in another unit), the final result for this unit is awarded on completion KRA311. Students are required to enrol concurrently in KRA310 and KRA311.

Description: A core unit in chemistry of interest to chemistry majors, especially those proceeding to higher degrees and to employment as professional chemists. Some basic computing skills are desirable but not essential for this unit, which provides students with a firm grasp of modern chemical theory and industrial chemistry, and covering selected areas of both physical and inorganic chemistry. Topics include surface chemistry, extractive metallurgy, pulp and paper chemistry; molecular thermodynamics; non-electrolyte mixtures and advanced inorganic chemistry topics, synthesis and structure determination, molecular spectroscopy, radionuclear chemistry, polymer chemistry, molecular symmetry and applications.

Requisites: PREREQ - KRA210 or KRA213 and KRA215 COREQ - KRA310

Staff: Dr MG Gardiner (Coordinator)

Teaching Pattern: 39x1-hr lectures, 13 tutorials, 117 hrs lab, assignments (sem 1 and 2 combined)

Assessment: 3-hr exam end-of-sem 1 (39%), 2-hr exam end-of-sem 2 (26%), lab assessment (30%), assignments (5%)

Required Texts: Lecture Notes, UTas School of Chemistry
Laboratory Manual, UTas, School of Chemistry

Atkins PW, Physical Chemistry, ISBN 0716728710
Atkins PW, The Elements of Physical Chemistry, ISBN 0198792905
Brown JM, Molecular Spectroscopy, ISBN 019855785X
Carter RL, Molecular Symmetry and Group Theory, ISBN 0471149551

Offered in Courses: [ S3G ] [ S3I ]

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KRA312 - Chemistry 3B Part 1

Special Note: Students who would like to do this unit but have a timetable problem with laboratory work should consult the Head of School or unit coordinator. On completion of KRA312 students are awarded an XX result (result shown in another unit), the final result for this unit is awarded on completion KRA313. Students are required to enrol concurrently in KRA312 and KRA313.

Description: Rounds out students' basic training in organic and organometallic chemistry and emphasises the increasing interaction between inorganic and organic chemistry. Topics are selected from: advanced spectroscopy and its use in structure elucidation; the chemistry of reactive intermediates; organic synthesis; heterocyclic chemistry; organometallic chemistry; and aspects of homogeneous catalysis. This unit is of interest to chemistry majors and students studying biochemistry, microbiology and the biological sciences.

Requisites: PREREQ - KRA210 OR KRA213 and KRA215 COREQ - KRA313

Staff: Dr BF Yates (Coordinator)

Teaching Pattern: 39x1-hr lectures, 13 tutorials, 126 hrs lab (sem 1 and 2 combined)

Assessment: 2-hr exam end-of-sem 1 (26%), 3-hr exam end-of-sem 2 (39%), lab assessment (30%), assignments (5%)

Required Texts: Lecture Notes, UTas, School of Chemistry
Laboratory Manual, UTas, School of Chemistry


Recommended Texts: Williamson KL, Macroscale and Microscale Experiments, ISBN 0618197028


Offered in Courses: [ S3G ] [ S3Y ] [ S3I ]

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KRA313 - Chemistry 3B Part 2

Special Note: Students who would like to do this unit but have a timetable problem with laboratory work should consult the Head of School or unit coordinator. On completion of KRA312 students are awarded an XX result (result shown in another unit), the final result for this unit is awarded on completion KRA313. Students are required to enrol concurrently in KRA312 and KRA313.

Description: Rounds out students' basic training in organic and organometallic chemistry and emphasises the increasing interaction between inorganic and organic chemistry. Topics are selected from: advanced spectroscopy and its use in structure elucidation; the chemistry of reactive intermediates; organic synthesis; heterocyclic chemistry; organometallic chemistry; and aspects of homogeneous catalysis. This unit is of interest to chemistry majors and students studying biochemistry, microbiology and the biological sciences.

Requisites: PREREQ - KRA210 OR KRA213 and KRA215 COREQ - KRA312

Staff: Dr BF Yates (Coordinator)

Teaching Pattern: 39x1-hr lectures, 13 tutorials, 126 hrs lab (sem 1 and 2 combined)

Assessment: 2-hr exam end-of-sem 1 (26%), 3-hr exam end-of-sem 2 (39%), lab assessment (30%), assignments (5%)

Required Texts: Lecture Notes, UTas, School of Chemistry
Laboratory Manual, UTas, School of Chemistry


Recommended Texts: Williamson KL, Macroscale and Microscale Experiments, ISBN 0618197028


Offered in Courses: [ S3G ] [ S3Y ] [ S3I ]

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KRA400/401 - Chemistry (Honours)

Special Note: Honours may be commenced early in the year (February), or mid-year (July)

Description: Consists of advanced coursework and research in one or more of physical or inorganic or organic or analytical chemistry or an approved sub-field of chemistry. Approval may also be given for joint courses of study between chemistry and another discipline. Coursework covers advanced areas of chemistry, and the Head of School may prescribe further studies chosen from third-year units. The laboratory work consists principally of research under supervision as approved by the Head of School. The School produces a booklet each
year describing the projects available.
Requisites: PREREQ - Chemistry major (50% of third year chemistry)
Staff: Dr JA Smith (Coordinator)
Teaching Pattern: 4x11-hr courses in sem 1; full-year research project
Assessment: coursework exams (40%), research thesis and seminar (60%)
Recommended Texts: Beer PD, Gale PA & Smith DK, Supramolecular Chemistry, ISBN 0198504470
Grant GH & Richardson WG, Computational Chemistry, ISBN 019855740X
Offered in Courses: [ S4E ] [ S6X ]

KRA402/403 - Biotechnology Honours in Chemistry
Description: Is designed to provide the opportunity to develop knowledge and skills in chemical research oriented towards biotechnology. Starting dates are February and July. Students are assessed in the following and are required to: (a) to carry out an intensive research project approved by the Head of School, and to submit the findings in a thesis, (b) to undertake coursework in chemistry related to biotechnology applications; and (c) to present a seminar which describes the aims and result of the student's research work. The School will provide specific details on assessment procedure and criteria used.
Requisites: PREREQ - A biotechnology degree, including third year chemistry components that are suitable for research projects in chemistry applications in biotechnology. Alternative prerequisites will be considered on their merits
Staff: Dr J Smith, Chemistry Honours coordinator
Assessment: See unit description
Offered in Courses: [ S4V ]

KRA404 - Biotechnology Honours in Chemistry (F/T)
Description: For details see KRA402/403
Unit Delivery Information:

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<th>Weight</th>
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<th>Sem 2</th>
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KRA405 - Biotechnology Honours in Chemistry (P/T)
Description: For details see KRA402/403
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KRA406 - Biotechnology Honours in Chemistry (P/T)
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KRA407 - Chemistry (Honours) F/T
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KRA408 - Chemistry (Honours) P/T
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KRA409 - Chemistry (Honours) P/T
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KRA410/11 - Bachelor of Environmental Science Honours in Chemistry
Description: The unit will develop knowledge and skills in research oriented towards environmental science. Research training will be provided through workshops, seminars and completion of a research project in an appropriate area of environmental science. Students will be required to further develop their communication skills and understanding of environmental science through the review of a current environmental issue, the analysis and interpretation of research results, and communication of their research in a seminar and thesis.
Staff: tba
Assessment: Desktop study of a current environmental issue: 12.5%; Research proposal: 12.5%; Research seminar: 15%; Research thesis, including literature review: 60%

**KRA412 - Bachelor of Environmental Science Honours in Chemistry**

**Description:** The unit will develop knowledge and skills in research oriented towards environmental science. Research training will be provided through workshops, seminars and completion of a research project in an appropriate area of environmental science. Students will be required to further develop their communication skills and understanding of environmental science through the review of a current environmental issue, the analysis and interpretation of research results, and communication of their research in a seminar and thesis.

**Staff:** tba

**Assessment:** Desktop study of a current environmental issue: 12.5%; Research proposal: 12.5%; Research seminar: 15%; Research thesis, including literature review: 60%

**Unit Delivery Information:**

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**KRA413 - Bachelor of Environmental Science Honours in Chemistry**

**Description:** The unit will develop knowledge and skills in research oriented towards environmental science. Research training will be provided through workshops, seminars and completion of a research project in an appropriate area of environmental science. Students will be required to further develop their communication skills and understanding of environmental science through the review of a current environmental issue, the analysis and interpretation of research results, and communication of their research in a seminar and thesis.

**Staff:** tba

**Assessment:** Desktop study of a current environmental issue: 12.5%; Research proposal: 12.5%; Research seminar: 15%; Research thesis, including literature review: 60%

**Unit Delivery Information:**

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**KRA414 - Bachelor of Environmental Science Honours in Chemistry**

**Description:** The unit will develop knowledge and skills in research oriented towards environmental science. Research training will be provided through workshops, seminars and completion of a research project in an appropriate area of environmental science. Students will be required to further develop their communication skills and understanding of environmental science through the review of a current environmental issue, the analysis and interpretation of research results, and communication of their research in a seminar and thesis.

**Staff:** tba

**Assessment:** Desktop study of a current environmental issue: 12.5%; Research proposal: 12.5%; Research seminar: 15%; Research thesis, including literature review: 60%

**Unit Delivery Information:**

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**KRA500/501 - Graduate Diploma in Science with Honours, specialising in Chemistry**

**Description:** Has the same objectives as KRA400/401. Full time students enrol in KRA500, part time students in KRA501.

**Offered in Courses:** [ S6X ]

**Unit Delivery Information:**

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**KRA502 - Graduate Diploma in Science with Honours, specialising in Chemistry F/T**

**Description:** For details see KRA500/501

**Unit Delivery Information:**

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**KRA503 - Graduate Diploma in Science with Honours, specialising in Chemistry P/T**

**Description:** For details see KRA500/501

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**KRA504 - Graduate Diploma in Science with Honours, specialising in Chemistry P/T**

**Description:** For details see KRA500/501
### KRA504 - Graduate Diploma in Science, specialising in Chemistry

**Description:**

**Unit Delivery Information:**

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### KRA505/06 - Graduate Diploma in Science, specialising in Chemistry

**Description:**

**Unit Delivery Information:**

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### KRA507 - Graduate Diploma in Science, specialising in Chemistry

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### KRA508 - Graduate Diploma in Science, specialising in Chemistry

**Description:**

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### KRA509 - Graduate Diploma in Science, specialising in Chemistry

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### KRA580 - Project

**Description:** For details of this unit, contact the School of Chemistry.

**Offered in Courses:** [ S6D ]

**Unit Delivery Information:**

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### KRA583 - Honours unit

**Description:** Students enrolled in the Graduate Diploma in Science, specialising in Chemistry course who undertake units from Chemistry honours courses use this code if enrolling in an 6.12% unit.

**Offered in Courses:** [ S6D ]

**Unit Delivery Information:**

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### KRA586 - Honours unit

**Description:** Students enrolled in the Graduate Diploma in Science, specialising in Chemistry, course who undertake units from Chemistry honours courses use this code if enrolling in two 6.12% units or a single 12.5% unit.

**Offered in Courses:** [ S6D ]

**Unit Delivery Information:**

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### KRA589 - Honours unit

**Description:** Students enrolled in the Graduate Diploma in Science, specialising in Chemistry, course who undertake units from Chemistry honours courses use this code if enrolling in units with a total weight of 25%.

**Offered in Courses:** [ S6D ]

**Unit Delivery Information:**

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### KRA802 - Master of Applied Science, Project

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**Unit Delivery Information:**

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### KRA803 - Master of Applied Science, Project

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### KRA804/05 - Master of Applied Science, Thesis

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### KRA806 - Master of Applied Science, Thesis

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### KRA807 - Master of Applied Science, Thesis

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### KRA808 - Master of Applied Science, Thesis

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### KSA101 - Introduction to Antarctic Studies 1A

**Description:** Antarctic Studies 1A will provide an introduction to a broad range of Antarctic topics. This unit will give a background of history, international relations and cultural perceptions that can be studied by students from the Bachelor of Antarctic Studies or those wanting a general introduction to the Antarctic. The unit covers:

* Antarctic history, from the earliest awareness of the existence of the continent, through the so-called Heroic Age at the beginning of the 20th century to the present day
* an introduction to the development and maintenance of international co-operation that seeks to maintain Antarctica and the Southern Ocean as a 'pristine wilderness'
* because so much of what we know about Antarctica is through literature, art, film and music the last group of lectures will cover the influences these have on our perceptions.

**Staff:** Assoc Prof A. McMinn, Assoc Prof M. Haward, Dr J. Jabour, staff of other schools and external personnel.

**Teaching Pattern:** 3 hours lectures per week and 1 hour tutorial per week

**Assessment:** Major assignment 2000 words 25% - (Essay type assignment)

Examination 2 hours 50%

Tutorial participation 10%

Minor Assignment 15%

**Required Texts:** Unit reader to be produced

**Recommended Texts:** Antarctic Science, Walton

Worst Journey in the World, Apsley Cherry-Gerrard

**Offered in Courses:** [ S3Y ] [ S3G ] [ S3T ] [ S3Y ]
### KSA102 - Introduction to Antarctic Studies 1B

**Description:** This unit is designed to give students examples of the way science is used in the Antarctic and enable students in the Bachelor of Antarctic Studies to select specialised fields of study in years 2 and 3. It can also be studied by those with a good general science background. It covers:

- an understanding of Gondwana
- ice and climate studies
- the physical and chemical nature of the Southern Ocean
- terrestrial and marine environment of the Antarctic and sub Antarctic, including plants, animals, birds and fish.
- microorganisms of marine and lake environments
- the impact of humans on Antarctic, including energy use and the study of global climate change

**Staff:** Assoc Prof A. McMinn, Assoc Prof T. Trull, Assoc Prof N. Bindoff, Dr K. Michael, Dr G.Jackson, staff of other schools (Hindell, Zoology) and external personnel.

**Teaching Pattern:** 3 hours lectures per week, and 1 hour tutorial per week

**Assessment:**
- Major assignment 2000 words 25% - (Essay type assignment)
- Examination 2 hours 50%
- Tutorial participation 10%
- Minor Assignment 15%

**Required Texts:** Unit reader

**Recommended Texts:**
- Antarctic Science, Walton
- Biology of the Southern Ocean, Knox

**Offered in Courses:** [ S3Y ] [ S3G ] [ S3T ] [ S3Y ]

### KSA201/301 - Antarctic Tourism

**Special Note:** Accessed through computers in University Labs and the Libraries, and also at home. It will only be available to authorised users (enrolled students and teaching/examining staff) who will be issued with a personal identification name and password

**Description:** The goal of Antarctic Tourism is to give students a broad understanding of both the nature of the Antarctic as a destination and the regulatory regime managing the industry. It is presented as a case study of a high cost, niche tourist destination. The Antarctic is isolated, inhospitable and subject to uncertain jurisdiction. The Antarctic legal regime is specifically framed to deal with peaceful scientific endeavour, yet there are more tourists visiting the Antarctic than there are scientists working there. The unit explores this phenomenon through a series of 13 interactive lectures presented online via the WebCT platform. The lectures involve minimal face-to-face contact. The lectures will explore the region’s history, its values, the nature of the industry, the special characteristics of the 3-tiered management regime, the comprehensive environmental requirements and the potential conflicts this poses. In special circumstances permission may be granted to students not enrolled at the University of Tasmania to undertake this unit on a non-award basis, with the up-front course fee applicable.

**Requisites:** PREREQ - HGT101 and HGT102; or 25% at level 100 for BA and BCom students

**Staff:** Dr J Jabour

**Teaching Pattern:** equiv 3 contact hrs weekly

**Assessment:** exam (40%), 3,000-word (max) assignment (40%), continuous assessment (20%)

**Recommended Texts:** Bauer T, Tourism in the Antarctic, 2001

**Offered in Courses:** [ R3J ] [ S3T ] [ S3Y ]

### KSA205/305 - Introduction to Oceanography

**Special Note:** Offered subject to sufficient enrolments

**Description:** The purpose of the unit is to provide students with an introduction to the oceans, its various environments and how they function, including a history of oceanography and its early development; basic properties of the oceans and atmosphere; physical processes of the ocean including ocean currents and waves; geological aspects related to ocean basins, the seafloor and marine sediments; marine biological processes including ocean productivity, pelagic ecosystems; chemical processes in the ocean such as the carbon cycle; and climate, the ocean and global change.

**Requisites:** - Some requisites may differ unit to unit.
- KSA305: PREREQ - Successful completion of at least 50% of units from Schedules D and E of BAntStudies MEXCL - KSA205
- KSA205: PREREQ - Successful completion of at least 50% of units from Schedules A and B of BMarSc or at least 50% of units from Group 1 units of BSc MEXCL - KSA305

**Staff:** Prof Richard Coleman (unit coordinator), other University staff and external lecturers from marine institutes
**KSA306 - Advanced Oceanography**

**Description:** This unit provides a more advanced course in oceanography, focused on physical oceanography and chemical oceanography. The unit covers fundamentals of ocean processes, including large scale ocean circulation, wind driven circulation, vorticity and diagnostic calculations of ocean currents, air-sea fluxes, transport of properties and shallow water equations. The chemical oceanography aspects will include the various mechanisms involved in the carbon cycle and biological pump, distribution of chemical properties in the global ocean, thermodynamic principles, nutrient and carbon cycling, air-sea gas exchange models, primary production and export production models, sedimentary biogeochemical processes and biogeochemical tracers of circulation.

**Requisites:** PREREQ - KSA205 Introduction to Oceanography, or KSA305 Introduction to Oceanography

**Staff:** Prof Richard Coleman (unit coordinator), other University staff and external lecturers from marine institutes

**Teaching Pattern:** 26 lectures, 13 lab or tutorial classes

**Assessment:** 3-hr exam (70%), project and lab/tutorial reports (30%)
KSA508 - Graduate Diploma of Science (Antarctic and Southern Ocean Studies) P/T
Description: For details see KSA505/506
Unit Delivery Information:

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KSA509 - Graduate Diploma of Science (Antarctic and Southern Ocean Studies) P/T
Description: For details see KSA505/506
Unit Delivery Information:

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KSA950 - Doctor of Science

KXA153 - Computer Applications
Description: The use of Information and Communication Technologies (ICT) in society, and in professional life, is widespread. How they are used and what they can enable people to do are still evolving, and at a rapid rate. This presents both opportunities and challenges. These issues are introduced and discussed in this unit. Students also develop their general knowledge of, and skill in, using common applications that are immediately useful to them in their studies.
Staff: tba
Teaching Pattern: 3 hrs lectures, 1 hr tutorial weekly (13 weeks)
Assessment: tba
Offered in Courses: [ M3G ] [ S2B ] [ S3F ] [ S3G ] [ S3K ] [ S6J ] [ M3H ] [ S3Z ] [ S3Y ] [ S3I ]
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KXA251 - Algorithms and Metrics
Description: The primary focus of this unit is on standard algorithms (and data structures) for solving computing problems -- including storing, searching and sorting, and various graph problems -- and (analysis of) the corresponding run-time and space complexity. The unit starts with an introduction to programming in C (presupposing a knowledge of Java) and ends with some software engineering theory, including cost and schedule estimation and software metrics.
Requisites: PREREQ - KXA154
Staff: Dr M Cameron-Jones
Teaching Pattern: 3-hr lecture, 1-hr tutorial weekly (13 weeks)
Assessment: in-semester (30%), end-of-semester exam (70%)
Required Texts: tba
Recommended Texts: tba
Offered in Courses: [ N3A ] [ S3G ] [ S3F ] [ S6J ] [ S6D ] [ C3S ] [ OCS ] [ S31 ]
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KXA252 - Artificial Intelligence
Description: Introduces the basic principles of knowledge representation and search which underlie symbolic Artificial Intelligence and illustrates these principles by enabling students to represent and manipulate knowledge in small AI systems, using the Prolog computer language. The unit also describes the application of these principles in applied AI sub-fields, including expert systems, natural language understanding, machine learning, intelligent agents, computer vision and robotics. Students will examine the assumptions underlying the symbolic approach to AI and compare them with those of alternative approaches.
Requisites: PREREQ - KXA151
Staff: Dr R Williams
Teaching Pattern: 3-hr lecture, 1-hr tutorial weekly (13 wks)
Assessment: in-semester (30%), end-of-semester exam (70%)
Offered in Courses: [ S3F ] [ S6J ] [ OCS ] [ S3G ] [ S3I ]
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KXA253 - Software Design

Description: Provides a solid grounding in object-oriented software design methods and programming. Students are exposed to requirements extraction and Use Case analysis. They are taught how to decompose problems into object-oriented models, and then how to implement those models in an object-oriented manner. Students are introduced to relational and object databases theory including integration into the design and programming process. Intermediate java programming is covered, including construction of GUIs (Graphical User Interfaces). Students are also given an introduction to practical elements of the software construction process, including version control and build systems.

Requisites: PREREQ - KXA154
Staff: Mr M Hepburn

Teaching Pattern: 3 hrs lectures, 1 hr tutorial weekly (13 wks)

Assessment: in-semester (30%), end-of-sem exam (70%)


Offered in Courses: [ N3A ] [ S3G ] [ S3F ] [ S6J ] [ C3S ] [ OCS ] [ S3I ]

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KXA254 - Operating Systems

Description: The approach is based on theoretical issues and practical work. Lectures will review computer architecture, with an emphasis on new technologies and trends, and cover the following essential components of modern operating systems: process management, memory management, file management, and device management. Students will also study Unix shell programming which is essential for Unix system administration. Upon completion of this unit students should be able to demonstrate a practical understanding of operating system architecture and the functions of operating system components, explain the relationships between the operating system modules, and design and implement some operating system functions in commonly used operating systems environments. Students should also be able to understand how popular operating systems such as Microsoft Windows and UNIX were built.

Requisites: PREREQ - KXA151
Staff: Dr S Xu

Teaching Pattern: 3-hr lecture, 1-hr tutorial weekly (13 weeks)

Assessment: in-semester (30%), end-of-sem exam (70%)

Offered in Courses: [ S3F ] [ S6J ] [ N3A ] [ OCS ] [ S3I ]

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KXA262/362 - Computer Security

Description: Students of this unit examine the problems and tasks involved in maintaining secure computer systems together with the techniques available to help with these tasks. Computing techniques such as those built into operating systems for access control, the concepts of encryption, and some of the associated protocols are studied. These are then placed into the context of the overall operation of an organisation. This leads to an examination of secure methods of using private and public networks, business continuity planning, and application examples including the Internet and electronic commerce.

Requisites: PREREQ - KXA151 or KXA152
Staff: Mrs J Hartnett

Teaching Pattern: 3-hr lecture, 1-hr tutorial weekly or equiv (13 weeks)

Assessment: in-semester (30%), end-of-sem exam (70%)


Recommended Texts: Stoll Clifford, The Cuckoo's Egg out of print in Australia, purchase copy from the University Print Shop

Offered in Courses: [ S3F ] [ OCS ] [ S3I ]

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KXA281/381 - Advanced Web Development

Description: Extends the skills taught in Multimedia and Web Applications (KXA156) into the area of programming interactive web interfaces. Students learn how to program PHP, server side scripting, CGIs, Java Server pages and servlets as well as how to link their web sites to databases. Assignments require students to demonstrate practical ability in these areas.

Requisites: PREREQ - KXA151
Staff: Dr B Kang

Teaching Pattern: 3-hr lecture, 1-hr tutorial weekly (13 weeks)

Assessment: in-semester (40%), end-of-sem exam (60%)

Offered in Courses: [ S3F ] [ S6J ] [ OCS ] [ S3I ]
KXA351 - Software Engineering Project A

Description: Students undertake a significant project using skills acquired from completing previous computing units. The project is a team effort and part of the learning is through the development of the ability to work together on a substantial task. Students explore various management styles through their interaction with clients. All aspects of the development process are considered: requirements specification, systems analysis and design, implementation, documentation and testing. The team is taken through a systematic approach to producing a working version of release one of the final product (approximately one-third of the project).

Requisites: PREREQ - 2 x level 200 computing units

Staff: Ms N Clark

Teaching Pattern: 6 hour lecture on first day, 2-3 hour lectures (scheduled when necessary) and regular meetings with lecturer, client and team

Assessment: practical work and assignments (100%), a pass is required to proceed to Project B

Offered in Courses: [ C3X ] [ C3S ] [ N3A ] [ S3F ] [ S3G ] [ S6J ] [ OCS ] [ S3I ]

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KXA352 - Software Engineering Project B

Description: The work in this unit is to complete the remainder of the project started in KXA351 (approximately two-thirds of the project). Students must work as a self-driven team and undertake all aspects of the development process: requirements specification, systems analysis and design, implementation, documentation, testing and integration.

Requisites: PREREQ - KXA351

Staff: Ms N Clark

Teaching Pattern: 2-3 hour lectures (scheduled when necessary) and regular meetings with lecturer, client and team

Assessment: practical work and assignments (100%)

Offered in Courses: [ C3S ] [ S3F ] [ S3G ] [ N3A ] [ S6J ] [ OCS ] [ S3I ]

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KXA353 - Software Systems

Description: Provides both the theoretical basis and practical experiences of the contemporary concurrent and distributed systems. The three main strands of the unit are analysis techniques, concurrent programming practices and techniques for building distributed systems. Analysis techniques: formal methods for expressing and establishing the correctness and other properties of the sequential and concurrent systems. Concurrent systems: threads, threads synchronisation, and patterns for interference-free execution of concurrent threads; transactions. Distributed systems: client-server and other models of distributed systems, modern inter-object interaction paradigms -- RMI, Servlets and CORBA. Security issues arising from the distribution.

Requisites: PREREQ - KXA253 and KXA254 and (KXA252 or HPA291/391 or any university mathematics unit). This pre-requisite change will be enforced from 2006.

Staff: Dr V Malhotra

Teaching Pattern: 3 hrs lectures, 1-hr tutorial weekly (13 weeks)

Assessment: practical work and assignments (30%), 3-hrs end-of-sem exam (70%); students must separately achieve at least 40% credit in the practical/assignment and exam components; standard University assessment guidelines also apply.


Offered in Courses: [ S3G ] [ S3F ] [ S3G ] [ N3A ] [ N4A ] [ C3X ] [ OCS ] [ S3I ]

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KXA354 - Computer Graphics & Animation

Description: Looks at the creation and use of 2- and 3-dimensional graphical information and animations. The mathematical and algorithmic techniques used in generating computer graphics are covered as well as the programming methods to build the tools needed to implement them. Emphasis is placed on object-oriented programming techniques and Open GL.

Requisites: PREREQ - KXA251
Staff: Mr T Gray, Dr M Cameron-Jones

Teaching Pattern: 3-hr lecture, 1-hr tutorial weekly (13 weeks)

Assessment: in-semester (30%), end-of-sem exam (70%)


Offered in Courses: [ S3F ] [ S6J ] [ OCS ] [ S3I ]

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KXA355 - Mobile and Ubiquitous Computing

Description: Studies how ubiquitous communications are achieved: the technology and digital protocols used by mobile computing devices and how mobile communications fit into a traditional wired network structure such as the internet. The emphasis is on the current state of the industry, trends, standardisation and the integration of the many aspects of computing that come together in this field.

Requisites: PREREQ - KXA251 or KXA254

Staff: Dr D Rolf

Teaching Pattern: 3-hr lecture, 1-hr tutorial weekly (13 weeks)

Assessment: in-semester (30%), end-of-sem exam (70%)


Offered in Courses: [ S3F ] [ S6J ] [ OCS ] [ S3I ]

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KXA356 - Computer Networks

Description: Provides students with a broad understanding of computer networks and digital communications. Instructs students in the various ways data may be transmitted through various media, and in particular with the various methods for encoding data digitally for transmission. Informs students about procedures and protocols under which data communication is organised and managed, about the interfacing and control of data links and about the various standards which are widely accepted as a basis for data communications as well as the OSI architecture model and key industry architectures. Gives students practice in installing, operating, and managing networked computer systems. Introduction to local and wide area technologies and real protocols such as TCP/IP.

Requisites: PREREQ - KXA254

Staff: Dr D Rolf

Teaching Pattern: 2 hrs lecture, 2 hrs tutorials weekly (13 weeks)

Assessment: in-semester (50%), end-of-sem exam (50%)

Required Texts: Online material provided


Offered in Courses: [ S3F ] [ S6J ] [ OCS ] [ S3G ] [ S3I ]

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KXA357 - Programming Paradigms

Description: Applied techniques -- functional programming, applied type systems; objects, encapsulation and closures; control flow abstraction; data abstraction. Applied programming languages -- types in programming languages including parametric polymorphism, subtyping and dynamic typing. Intensional aspects -- analysis, optimisation and semantics.

Requisites: PREREQ - KXA251

Staff: Dr D Wright

Teaching Pattern: 3-hr lecture, 1-hr tutorial weekly (13 weeks)

Assessment: in-semester (30%), end-of-sem exam (70%)

Offered in Courses: [ S3F ] [ S6J ] [ OCS ] [ S3G ] [ S3I ]

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KXA358 - Human-Computer Interaction

Description: Looks at the development of multimedia and web-based applications with respect to principles of human-computer interface design. Lectures cover information design, interaction design, screen design and issues related to educational and commercial software and web sites. Human-computer interaction, user-centred design, usability issues and user evaluations are the basis of both lecture content and practical exercises. Students complete both paper-based and web-based design tasks as part of the practical requirement of this unit.

Requisites: PREREQ - KXA156 or KXA281

Staff: tba

Teaching Pattern: 3-hr lecture, 1-hr tutorial weekly (13 weeks)
Assessment: in-semester (30%), end-of-sem exam (70%)

Required Texts: tba

Offered in Courses: [ S3F ] [ S6J ] [ OCS ] [ S3G ] [ S3I ]

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KXA359 - Knowledge-Based Systems

Description: Introduces the principles underlying the development of expert or knowledge-based systems and provides students with the knowledge engineering skills needed to develop a medium-scale expert system, using an appropriate development tool. The unit covers backward-chaining, forward-chaining and object-oriented expert systems and introduces a range of manual and semi-automated knowledge acquisition methods. Reasoning techniques for handling uncertain knowledge are discussed and the unit examines a range of applications of knowledge-based systems.

Requisites: PREREQ - KXA252

Staff: Dr P Vamplew

Teaching Pattern: 3-hr lecture, 1-hr tutorial weekly (13 weeks)

Assessment: in-semester (30%), end-of-sem exam (70%)


Offered in Courses: [ S3F ] [ S6J ] [ OCS ] [ S3G ] [ S3I ]

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KXA434 - Special Topic 1

Special Note: For details of this unit, contact the Head of the School of Computing

Description: For details of this unit, contact the School of Computing.

Offered in Courses: [ S7T ]

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KXA435 - Special Topic 2

Special Note: For details of this unit, contact the Head of the School of Computing

Description: For details of this unit, contact the School of Computing.

Offered in Courses: [ S7T ]

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KXA436 - Special Topic 3

Description: For details of this unit, contact the School of Computing.

Offered in Courses: [ S7T ]

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KXA437 - Special Topic 4

Special Note: For details of this unit, contact the Head of the School of Computing

Description: For details of this unit, contact the School of Computing.

Offered in Courses: [ S7T ]

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KXA450 - Computing Honours

Special Note: Availability of units depends on resources and demand.

Description: Comprises the whole of the academic requirements for the Bachelor of Computing with Honours viz -- a coursework component (40%) and a thesis component (60%). Coursework is selected from a number of units on advanced topics such as advanced computer security; computation and functional programming; machine learning and data mining; multimedia and internet applications; advanced commercial programming; advanced mobile and ubiquitous computing; games programming, advanced networking, bioinformatics and Linux internals. To complete the thesis component, students undertake research work under the supervision of a member
of academic staff on a topic approved by the Head of School, and produce a thesis document that reports and discusses the findings from this research and also give a formal presentation of the work. Note that the grade of honours that can be obtained is subject to minimum performance stipulations in coursework units.

Staff: Dr P Vamplew, Mrs J Hartnett

Offered in Courses: [ S4D ] [ S4E ]

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KXA451 - Computing Honours (Part Time)

Special Note: Availability of units depends on resources and demand.

Description: Comprises one half of the academic requirements for the Bachelor of Computing with Honours viz -- a coursework component (40%) and a thesis component (60%). Coursework is selected from a number of units on advanced topics such as advanced computer security, computation and functional programming; machine learning and data mining; multimedia and internet applications; advanced commercial programming, advanced mobile and ubiquitous computing; games programming, advanced networking, bioinformatics and Linux internals. To complete the thesis component, students undertake research work under the supervision of a member of academic staff on a topic approved by the Head of School, and produce a thesis document that reports and discusses the findings from this research and also give a formal presentation of the work. Note that the grade of honours that can be obtained is subject to minimum performance stipulations in coursework units. To be permitted to enrol in Computing Honours part time, students have to demonstrate to the Head of School that such part-time enrolment is appropriate.

Staff: Dr P Vamplew, Mrs J Hartnett

Offered in Courses: [ S4D ] [ S4E ]

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KXA452 - Advanced Mobile & Ubiquitous Computing

Special Note: unit is weighted 12.5% for postgraduate courses

Description: Explores the technologies which will be used and the issues that must be faced when computer devices become more mobile and ubiquitous. Basic concepts of mobile computing and ubiquitous computing are introduced and means of maintaining location awareness, context awareness and personal identity discussed as well as the social issues involved. The unit examines the major communications technologies required for mobile computing, including cellular and satellite technologies, spread-spectrum radio and infra-red communications are explained. Other related technologies, such as liquid crystal display devices, input devices for mobile applications, energy-conservation and batteries, speech synthesis and recognition, handwriting recognition systems and games technologies are also discussed. The unit concludes by also analysing the factors, including fault tolerance, performance constraints, mobile addressing and user interface design, which need to be taken into account when developing software to run on mobile distributed systems and examines some issues in wearable computing.

Requisites: PREREQ - KXA355 desirable

Staff: Prof AHJ Sale

Teaching Pattern: two weeks intensive summer school 9am - 5pm x 10 days as advised by the lecturer

Assessment: research work and assignment

Offered in Courses: [ S4D ] [ S4E ] [ S6S ] [ S7T ]

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KXA453 - Advanced Computer Security

Special Note: unit is weighted 12.5% for postgraduate courses

Description: Provides a detailed exploration of the techniques available to protect computer systems against possible threats and to develop further understanding of some of the protection methods currently in use. Topics include security protocols, encryption and network security and operating system security models. Students have the opportunity to explore current issues in security and develop resources to enable them to keep abreast of these as they change.

Requisites: PREREQ - KXA262/362 desirable

Staff: Mrs J Hartnett

Teaching Pattern: lectures or seminars weekly as advised by the lecturer

Offered in Courses: [ S4D ] [ S4E ] [ S6S ] [ S7T ] [ S7S ]

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KXA455 - Advanced Web Data Management (Unit not offered in 2006)

Special Note: unit is weighted 12.5% for postgraduate courses

Description: Explores advanced issues in web data management such as web databases, web search and information retrieval. In particular, the unit introduces students to the concepts of distributed transaction management, web database, semi-structured data and XML-related
technologies, information retrieval, web search. Upon completing this unit, students will be able to develop web-based applications involving various information resources such as databases, xml and semi-structured data.

Staff: tba

Teaching Pattern: lectures or seminars weekly as advised by the lecturer

Offered in Courses:  [ S4D ] [ S4E ] [ S6S ] [ S7T ] [ S7S ]

KXA456 - Computation and Functional Programming

Special Note: unit is weighted 12.5% for postgraduate courses

Description: Aims to investigate the computational aspects of problems using purely functional programming techniques. The first seven weeks of the unit introduces a functional programming language in its application to various algorithmic problems. Students are then required to choose a topic of their own, to investigate that topic using functional techniques, and to formally report their findings. Classes will continue to meet after the seventh week of teaching but only for discussion of techniques needed by students in their project work.

Staff: Mr N Holmes

Teaching Pattern: 4-hrs lecture per week

Offered in Courses:  [ S4D ] [ S4E ] [ S6S ] [ S7T ] [ S7S ]

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KXA457 - Machine Learning and Data Mining

Special Note: unit is weighted 12.5% for postgraduate courses

Description: Introduces the key current ideas and techniques in machine learning in sufficient depth to enable students to apply them to practical (data mining) problems and to participate in research in the area. The major focus is on classifier learning and the evaluation of classifier learning techniques. The types of classifiers studied include decision trees, rule sets, instance-based, naive Bayesian, neural networks, and combined methods. Other topics include continuous value prediction and inductive logic programming.

Staff: Dr M Cameron-Jones

Teaching Pattern: lectures or seminars weekly as advised by the lecturer

Assessment:

Required Texts: tba

Recommended Texts: tba

Offered in Courses:  [ S4D ] [ S4E ] [ S6S ] [ S7T ] [ S7S ]

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KXA458 - Linux Internals

Special Note: unit is weighted 12.5% for postgraduate courses

Description: Traces the history of the Unix operating system and introduces students to the conceptual architecture of the traditional and modern Unix and the Linux kernels. Process and memory management within the Linux kernel are discussed in detail. File systems and devices drivers for Linux are also discussed. As a result of work covered in this unit, students will become familiar with a wide range of common Unix/Linux system calls and learn to use them effectively.

Requisites: PREREQ - KXA254 or KXA353 desirable

Staff: Dr V Malhotra

Teaching Pattern: 4 hours lecture per week for weeks 2-11

Assessment:  2 assignments (1 critical essay, 1 programming) (30% ea), exam (40%)

Offered in Courses:  [ N3A ] [ N4A ] [ S4D ] [ S4E ] [ S6S ] [ S7T ] [ S7S ] [ OCS ]

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KXA459 - Multimedia and Internet Applications

Special Note: unit is weighted 12.5% for postgraduate courses

Description: Aims to investigate the computational aspects of problems using purely functional programming techniques. The first seven weeks of the unit introduces a functional programming language in its application to various algorithmic problems. Students are then required to choose a topic of their own, to investigate that topic using functional techniques, and to formally report their findings. Classes will continue to meet after the seventh week but only for discussion of techniques needed by students in their project work.

Staff: Prof Y Choi

Teaching Pattern: lectures or seminars weekly as advised by the lecturer

Assessment: in-semester (100%)

Offered in Courses:  [ S4D ] [ S4E ] [ S6S ] [ S7T ] [ S7S ]

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KXA461 - Advanced Networking

Special Note: unit is weighted 12.5% for postgraduate courses

Description: Students look at the principles and available protocols, technologies and services for designing networks for small to medium sized enterprises. Theory is enhanced by a major case study and laboratory exercises which allow students to gain hands-on experience with current switching and routing technology.

Requisites: PREREQ - KXA356 desirable

Staff: Dr D Rolf

Teaching Pattern: 2 hrs lectures, 2 hours lab

Assessment: 2 assignments (50%), exam (50%)

Recommended Texts: web references supplied at each lecture

Offered in Courses: [ S4D ] [ S4E ] [ S6S ] [ S7T ] [ S7S ]

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KXA462 - Games Programming

Special Note: unit is weighted 12.5% for postgraduate courses

Description: Covers the technical programming issues relevant to creating interactive, real-time 3D games. The unit builds on the platform-independent 3-dimensional graphics techniques taught in KXA354, and covers the topics of scene graphs and advanced real-time graphics, object/character control and animation, collision detection, physics simulation and game AI.

Requisites: PREREQ - KXA354 desirable

Staff: Dr P Vamplew

Teaching Pattern: 3 hours of lectures per week

Assessment: 2 programming assignments (50%), end-of-sem exam (50%)

Recommended Texts: Watt and Policarro, 3D Games - Real-Time Rendering and Software Technology (volume 1), Addison-Wesley
Eberly, 3D Games Engine Design, Morgan Kaufmann
Bourg, Physics for Game Developers, O'Reilly

Offered in Courses: [ S4D ] [ S4E ] [ S6S ] [ S7T ] [ S7S ]

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KXA463 - Intelligent Software Agents

Special Note: unit is weighted 12.5% for postgraduate courses

Description: Covers the principles involved in the design and implementation of intelligent software agents. The unit discusses current research being undertaken to develop agent systems for use in the internet environment. It builds on artificial intelligence concepts introduced in earlier undergraduate units, to explain the fundamentals of agent design and introduces various commonly used agent architectures. Agent communication, cooperation and learning are discussed and the unit concludes by showing how these concepts can be incorporated into the process of building a multi-agent system. Students learn the principles of agent-based programming by undertaking the design and implementation of a multi-agent system, using a suitable programming environment.

Requisites: PREREQ - KXA252

Staff: Dr R Williams

Teaching Pattern: 3 hr lecture/seminar weekly

Assessment: in-semester (60%), end-of-sem exam (40%)

Offered in Courses: [ S4D ] [ S4E ] [ S6S ] [ S7S ] [ S7T ]

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KXA464 - Introduction to Bioinformatics

Description: An introduction and overview of biological terminology, algorithms, programming languages, software systems and internet resources in the new and growing field of bioinformatics. No prior biology knowledge is needed. The students are assumed to be competent graduates in computing.

Staff: Prof A Sale, Dr B Elliot, Dr A Kelarev

Teaching Pattern: 3 lectures, 1 tutorial equivalent weekly

Assessment: Two in-semester assignments 30% each, two hour final examination 40%

Recommended Texts: Mount, Bioinformatics: Sequence and Genome analysis, Cold Spring Harbour Laboratory, 2001
Durbin, Eddy, Krogh and Mitchinson, Biological Sequence Analysis, 1999

Offered in Courses: [ S4D ] [ S7S ] [ S7T ]
### Units Coded K – Faculty of Science, Engineering & Technology

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**KXA480 - Computing Honours (F/T)**

**Description:** For details see KXA450/451

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**KXA481 - Computing Honours (P/T)**

**Description:** For details see KXA450/451

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**KXA482 - Computing Honours (P/T)**

**Description:** For details see KXA450/451

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**KXA483 - Honours Thesis**

**Description:** 60% thesis component of Computing Honours (see KXA450 and KXA451). Students undertake research work under the supervision of a member of academic staff on a topic approved by the Head of School, and produce a thesis document that reports and discusses the findings from this research and also give a formal presentation of their work.

**Staff:** Dr P Vamplew, Mrs J Hartnett

**Assessment:** see www.comp.utas.edu.au BComp Hons

**Offered in Courses:** [ S4D ] [ S4E ]

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**KXA500/01 - Graduate Diploma in Science with Honours, specialising in Computing**

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**KXA502 - Graduate Diploma in Science with Honours, specialising in Computing**

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**KXA503 - Graduate Diploma in Science with Honours, specialising in Computing**

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**KXA504 - Graduate Diploma in Science with Honours, specialising in Computing**

**Description:**
### KXA505/06 - Graduate Diploma in Science, specialising in Computing

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### KXA507 - Graduate Diploma in Science, specialising in Computing

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### KXA508 - Graduate Diploma in Science, specialising in Computing

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### KXA509 - Graduate Diploma in Science, specialising in Computing

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### KXA721 - Advanced Project A

**Description:** Students undertake a significant individual project using skills acquired from completing previous computing units. This unit is available for Master of Information Technology students and requires specific approval from the Head of School.

**Staff:** Professor YJ Choi

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### KXA722 - Advanced Project B

**Description:** Students undertake a significant individual project using skills acquired from completing previous computing units. This unit is available for Master of Information Technology students and requires specific approval from the Head of School.

**Staff:** Professor YJ Choi

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### KXE131 - Introduction to Electronics

**Description:** The unit introduces students to practical electronics and develops skills in circuit construction and analysis. Semiconductor devices such as diodes and transistors are investigated with particular emphasis on practical applications in microprocessor and computer circuits.

**Staff:** Dr WN Hugrass

**Teaching Pattern:** 2 hrs lectures, 3 hrs practical weekly (13 weeks)

**Assessment:** Continuous, including practicals (50%), 2-hr final exam (50%)

**Required Texts:**

**Offered in Courses:** [ E3H ] [ S3F ] [ S3G ] [ OCS ]

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### KXE132 - Digital Electronics and Microprocessors

**Description:** Introduces students to digital electronics with particular emphasis on computer applications. The unit serves as a foundation for understanding practical digital electronics, computer hardware and assembly language programming. Skills developed in this unit are applied to program and interface with an 8 bit microprocessor.

**Requisites:** PREREQ - KXE131

**Staff:** Dr WN Hugrass
Teaching Pattern: 2 hrs of lectures, 3 hrs practical weekly (13 weeks)
Assessment: Continuous, including practicals (50%), 3-hr final exam (50%)
Offered in Courses: [ S3G ] [ S3F ]

### Unit Delivery Information:

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**KXE231 - Microcomputers**

**Description:** Students investigate modern PC-based (8088/86 to Pentium TM) architectures, assembly language programming, digital communications and interfacing. Students are also provided with the skills needed to design and build expansion slot cards for PCs. Hardware interfacing and software experiments are also conducted.

**Requisites:** PREREQ - KXE132

**Staff:** Dr WN Hugrass

**Teaching Pattern:** 2 hrs lectures, 4 hrs practical weekly (13 wks)

**Assessment:** Continuous, including laboratory/projects (50%), 3-hr final exam (50%)


**Offered in Courses:** [ S3F ] [ OCS ]

### Unit Delivery Information:

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**KXE232 - Microcontrollers**

**Description:** Students are introduced to microcontrollers with emphasis on the Intel 8051 TM and the relevant hardware assembly language required for control and interfacing. Applications of the 8051 are introduced by investigating, in a series of practical sessions, the programming and design of electronic instrumentation.

**Requisites:** PREREQ - KXE132

**Staff:** Dr WN Hugrass

**Teaching Pattern:** 2 hrs lectures, 4 hrs practical weekly (13 weeks)

**Assessment:** Continuous, including laboratory/projects (50%), 3-hr final exam (50%)


**Offered in Courses:** [ S3F ]

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**KXT101 - Programming and Problem Solving**

**Description:** Students learn to use a high level language such as Java to write programs which solve problems defined by a program specification. They master fundamental concepts relating to imperative, object-based programming and are introduced to concepts relating to graphical user interfaces and event driven programs. Students are required to demonstrate syntactic, logical and strategic knowledge of the programming constructs introduced in the unit. They are expected to use systematic processes to plan, document, debug and test their programs. Programming exercises are introduced in the context of small problems.

**Staff:** Mrs R Gibson

**Teaching Pattern:** 3 hrs lectures, 1 hr tutorial weekly (13 weeks)

**Assessment:** in-sem assessment (30%) end-of-sem exam (70%)

**Offered in Courses:** [ C3C ] [ C3S ] [ C3X ] [ N3A ] [ N3H ] [ S3F ] [ S3G ] [ S3I ] [ F3R ] [ S6J ] [ OCS ] [ S3Y ] [ S3I ]

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**KXT102 - Programming with Data Structures**

**Description:** Extends the students’ knowledge and experience of programming, and introduces them to the consideration and experience of the software engineering processes necessary for the construction of software systems of high quality. Programming topics include: references, allocation and deallocation of memory, self-referential data structures, classes and objects, class instantiation, object based programming, abstract data types, introduction to algorithm complexity. Software Engineering topics include: requirements analysis, functional specification, software design, programming techniques and tools, software development life-cycles, an introduction to software version control, systematic approach to testing, and period planning.

**Requisites:** PREREQ - KXA151 or KXT101

**Staff:** Dr J Dermoudy

**Teaching Pattern:** 3 hrs lectures, 1 hr tutorial weekly (13 weeks)

**Assessment:** in-sem assessment (30%) end-of-sem exam (70%)

**Offered in Courses:** [ C3X ] [ C3S ] [ N3A ] [ N3H ] [ S3F ] [ S3G ] [ S6J ] [ R3A ] [ S3I ]
KXT103 - Introduction to Systems

Description: The objective of this unit is to introduce students to foundation concepts in computer system architecture, operating systems and networks. A major focus will be on those concepts and processes that allow applications to function in a networked environment in an effective, efficient and secure manner. Upon completion of this unit students will understand: the basic architecture and operation of a standard computer system; the role of the operating system in controlling hardware and software function; the basic operation of networks and the processes involved in the secure exchange of information between common networked applications (e.g. web based applications).

Staff: tba

Teaching Pattern: 3 lectures, 1 tutorial weekly

Assessment: 3 in class tests (30%), one 3-hour final exam (70%)

Required Texts: tba

Offered in Courses: [ S3F ] [ S3G ] [ C3S ] [ C3C ] [ C3E ] [ C3X ] [ R3A ] [ R3S ] [ L3L ] [ S3X ] [ S3U ] [ S3L ] [ OCS ]
KYA004 - Physics Foundation Unit

**Special Note:** The dates for 2005 are 14th November - 19th December 2005 Apply directly to the School - email: Karen.Bradford@utas.edu.au or telephone 6226 2439

**Description:** The Physics Bridging Unit is offered at Hobart, Launceston and the North-West Centre (NWC) in Burnie. The unit runs over a six-week period in November-December each year, including a two-day compulsory practical session at the Hobart campus. There will be an initial introductory session at Hobart, thereafter lectures are held each Monday evening by video conference 6-8pm, with an additional 1x2hr tutorial per week at each Campus.

The subject is taught through a combination of lecture/tutorial/practical classes and independent learning sessions. The overall aim of the unit is to provide students with an understanding of some key areas of physics: mechanics, electric and magnetic fields, waves, atoms and nuclei. It also helps students in analysing and synthesising information, problem solving and carrying out scientific experiments and will provide a competency in physics to a level appropriate for further studies in physics.

There are no entrance prerequisites to study the Physics Bridging course, however proficiency in year 10 mathematics is strongly advised. The program is available to university and non-university students even if you do not intend to enrol in a university course.

Students who successfully complete the Physics Bridging Unit with a grade of Pass and who have satisfied one of the following -- pass in MAPSC or MME5C, or KMA003 -- will be eligible for enrolment in first year Physics units at the University of Tasmania. In addition, students who successfully complete the unit will qualify for entry into any other units or degree programs which have PHY5C or equivalent as a prerequisite.

Fees: The course is free to Australian citizens and Australian permanent residents who are not required to pay any fees to the University or to contribute towards the Higher Education Contribution Scheme (HECS).

For further details, contact Karen Bradford phone (03) 6226 2439

Successful completion guarantees a place in the Bachelor of Science and other related degrees.

**Staff:** Mr P Richardson

**Teaching Pattern:** 1 x 2 hrs lectures weekly, 1 x 2 hrs tutorials weekly, 2 x 6-hr practicals

**Assessment:** continual assessment, assignments and practical work (60%), 2-hr exam (40%); the unit is graded on a pass/fail basis.

**Required Texts:** Books supplied by the school.

**Recommended Texts:** tba

**Unit Delivery Information:**

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KYA101 - Physics 1A

**Description:** Leading to the second semester unit KYA102, this unit is designed for students who expect to major in physics, as well as for those who will major in other physical sciences, mathematics and computer science.

Dynamics and electrical circuits are studied in depth. Topics in dynamics include vectors, Newton's Laws, energy and momentum conservation, friction, rotational motion and torque. Special relativity covers time dilation, length contraction, Lorentz position and velocity transforms, relativistic momentum and energy. Topics in electricity include DC circuits, Kirchoff's Laws, Thévenin and Norton's theorem, capacitors and inductors, AC circuits, resonance, power factor, transformers and the maximum power transformer theorem.

**Requisites:** PREREQ - PHY5C or MME5C or TCE score of 80 or more (subject to counselling and approval by Head of Physics) MEXCL - KYA171, KYA172 and equiv units in previous yrs.

**Staff:** Prof JM Hickey, Dr M Johnston-Hollitt

**Teaching Pattern:** 4 lectures, 1 tutorial, weekly (13 wks), 5 x (2hr lab)

**Assessment:** 3-hr end-of-sem paper (60%), continuous assessment (40%)


**Offered in Courses:** [ S3G ] [ S3Y ] [ S3I ]

**Unit Delivery Information:**

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KYA102 - Physics 1B

**Description:** The unit is designed for students who expect to major in physics, as well as for those who will major in other physical sciences, mathematics and computer science. Physics from the fields of: atomic physics, oscillatory phenomena, properties of matter, optics and wave motion is covered in the unit. Topics in oscillatory phenomena include simple harmonic motion, standing waves, travelling waves, interference phenomena and the Doppler effect. Topics in atomic physics include the photoelectric effect, the Bohr model of the atom, Compton scattering, x-ray spectra and nuclear decay and reactions. Properties of matter topics include surface tension, elastic and bulk modulus, buoyancy, viscosity and cavitation. Optics introduces simple optical phenomena and discusses thin lenses.

**Requisites:** PREREQ - PHY5C and MME5C, or TCE score of 80 or more (subject to counselling and approval by Head of Physics) MEXCL - KYA171, KYA172 and equiv units in previous yrs, KYA275

**Staff:** Dr M Johnston-Hollitt, Dr S Dieters, Prof JM Dickey & Dr SP Ellingsen

**Teaching Pattern:** 3 lectures, 3 hrs lab, 1 tutorial, weekly (13 wks)

**Assessment:** 3-hr end-of-sem paper (70%), continuous assessment (10%), lab reports (20%)

**Required Texts:** Hecht; E., Physics 3rd end, Thomson Brooks/Cole, 2003 or Halliday Resnick & Walker, Fundamentals of Physics, 7th edn. Wiley 2004
KYA171 - Physics for Applied & Life Science

Description: This unit will examine the physics at work in everyday systems with an emphasis placed on understanding instruments and biological systems. Topics covered will include introductory dynamics and mechanics, properties of matter, waves and oscillations and understanding of optical systems. The practical component of the course will provide students with the opportunity to consolidate knowledge by providing clear demonstrations of the physics behind scientific instrumentation and simple biological systems.

Requisites: MEXCL - all level 100 KYA units except KYA172 and KYA181

Staff: Dr M Johnston-Hollitt, Dr S Dieters

Teaching Pattern: 3x1hr lectures weekly, 1hr tutorial weekly, 3hr weekly laboratories

Assessment: Weekly assignments (10%), continuous assessment (30%), 3hr exam (60%)


KYA181 - Astronomy

Description: This is an introductory unit covering the foundations of astronomy. Themes covered include: the history and development of concepts about our place in the Universe, the night sky, the measurement of cosmic distances, the life cycles of stars (dust to black holes), galaxies, the structure and evolution of the Universe (big bang to now), and the search for extra-terrestrial intelligence. The course is taught through a combination of lecture, tutorial and practical sessions. The practical sessions include daytime visits to the Canopus Optical Observatory and the Mt. Pleasant Radio telescope (Launceston students: the planetarium at the Queen Victoria Museum and Art Gallery) and weather permitting a nighttime observing session.

Staff: Dr S Dieters

Teaching Pattern: 1--3 hrs lectures/tutorials weekly, 6x3-hr practical classes

Assessment: 2-hr mid-sem test, 2-hr end-of-sem exam, on line quizzes, practicals and short projects.


KYA206 - Atmospheric Physics and Stellar Astrophysics - The Sun-Earth Interaction

Description: The Sun plays a pivotal role in all aspects of life on Earth and influences it in many different ways. This unit looks in detail at energy production in the Sun and the physics of the atmosphere, the interface between space and the Earth. The course includes investigation of space weather and cosmic rays; auroras and their interaction with the solar wind and the Earth's magnetic field; the ionosphere; the ozone layer; climate change and measuring techniques. The physics of radiation transfer is covered in detail, including the processes of transmission, absorption, ionization, scattering and emission. Some material on remote sensing of the atmosphere and of the Earth's surface through the atmosphere will also be covered.

This unit builds upon topics cover in the core first year physics units and is recommended for students intending to major in physics.

Requisites: PREREQ - KYA101, KYA102

Staff: Dr KJ Michael, Prof. J Dickey, and staff from the Australian Antarctic Division

Teaching Pattern: 3 x 1hr lectures weekly, 1hr tutorial weekly

Assessment: 3-hr end-of-semester exam (50%), internal assessment (50%)

KYA211 - Waves and Kinetic Theory

Description: Waves topics include oscillatory systems, the wave equation for vibrating wires, acoustic waves, electrical waves in coaxial cables or transmission lines, and electromagnetic waves. Waves in two or three dimensions, and Fourier techniques for wave analysis will also be studied. Kinetic theory topics include molecular models of gases, Maxwell-Boltzmann and related distributions, real gases and gas laws, and applications to transport phenomena (thermal conductivity, diffusion, viscosity), gas flow and vacuum techniques. Laboratory sessions consider experimental data manipulation and error analysis, and operational amplifiers.

Requisites: PREREQ - KMA150 or equiv MEXCL - KYA201 and KYA202 PREREQ - KYA101 PREREQ - KYA102

Staff: Prof John Dickey & Dr Peter Jarvis

Teaching Pattern: 3 Lectures, 1 Tutorial, 1x3hr laboratory

Assessment: 75% Examination, 25% Internal assessment
### Required Texts:
- Physics of Vibrations and Waves, Pain

### Offered in Courses:
- [ S3G ]

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#### KYA212 - Electromagnetism & Thermodynamics

**Description:** Electromagnetism topics include electric and magnetic fields using the field operators of divergence, gradient and curl, properties of induced polarisation and magnetisation in materials, induction effects, and finally Maxwell's equations and electromagnetic radiation. Applications of electromagnetic phenomena in nature, scientific and consumer equipment are used to illustrate the theory. In thermodynamics, topics include the definition of temperature and its relationship to other thermal properties of systems, work and internal energy, Carnot engines and the Carnot efficiency theorem and the fundamental concept of system entropy. Laboratory sessions involve individual experiments in wide range of physical phenomena and enable the acquisition of practical skills in using electrical and optical instrumentation.

**Requisites:** PREREQ - KYA101 PREREQ - KYA102 PREREQ - KMA150 or equiv MEXCL - KYA201 and KYA202

**Staff:** Dr Simon Ellingsen & Dr Melanie Johnston-Hollitt

**Teaching Pattern:** 3 Lectures, 1 Tutorial, 1x3hr laboratory

**Assessment:** 75% Examination, 25% Internal assessment

**Offered in Courses:** [ S3G ]

### Unit Delivery Information:

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#### KYA275 - Engineering Physics

**Special Note:** restricted to Engineering students

**Description:** Provides the physics background material needed for subsequent engineering subjects and applications in later years. Electromagnetism, waves and oscillations and Introductory optics are covered in the unit. Topics in electromagnetism include electric fields, Gauss Law, magnetic induction, Biot-Savart Law, Ampere's Law, Lenz's law, Electromotive force and Maxwell's equations. Topics in waves and oscillatory phenomena include simple harmonic motion, standing waves and travelling waves. Introductory optics covers reflection and refraction, thin lenses, interference and diffraction. Laboratory work covers practical applications of concepts introduced in the lectures.

**Requisites:** PREREQ - KMA150 (or KNT150) and KNE112 MEXCL - KYA102

**Staff:** Dr M Johnston-Hollitt, Dr S.P. Ellingsen & Dr S. Dieters

**Teaching Pattern:** 3x1 - hr lectures, 1-hr tutorial weekly, 5x 3-hr Laboratories.

**Assessment:** Weekly assignments (10%), continuous assessment (30%), 3-hr exam (60%)

**Required Texts:** Fundamentals of Electromagnetism with Engineering Applications; Wentworth, & Semi Conductor text TBA.


**Offered in Courses:** [ N3A ]

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#### KYA301 - Wave Mechanics, Statistical Mechanics and Advanced Electromagnetism

**Description:** Wave mechanics develops the ideas of quantum physics, starting with the wave/particle nature of matter and radiation. Topics include an introduction to quantum behaviour via examples such as electron spin and photon polarisation states, Heisenberg’s principle, and applications of the Schroedinger equation to particles in potential traps and barriers. Statistical mechanics examines in detail Maxwell-Boltzmann, Bose-Einstein and Fermi-Dirac statistics and a wide variety of their applications. Advanced electromagnetism begins from Maxwell's equations and covers the topics of electromagnetic waves in dielectrics and conductors, polarisation, boundary reflection and transmission, waveguides and antennas, and mechanisms of radiation from charged particles. The laboratory program includes digital electronic techniques plus advanced individual experiments in selected physical areas.

**Requisites:** PREREQ - KYA201 and KYA202 and KMA252

**Staff:** Dr PD Jarvis, Dr R Watson

**Teaching Pattern:** 5 lectures, 6 lab hrs weekly, tutorial fortnightly

**Assessment:** 2x3-hr exams (75%), laboratory work (25%)

**Required Texts:** Eisberg R & Resnick R, Quantum Physics of Atoms, Molecules, Solids, Nuclei and Particles, Wiley

**Offered in Courses:** [ S3G ] [ S3Y ]

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#### KYA302 - Quantum Mechanics and Solid State Physics
**Units Coded K – Faculty of Science, Engineering & Technology**

**Description:** Quantum mechanics describes the fundamental behaviour of nuclei, atoms, molecules and the solid state. A formal development of the axioms of quantum theory will be followed by applications to the description of quantum oscillators, angular momentum, spin, magnetic resonance, identical particles, the solution of Schroedinger’s equation for hydrogen-like atoms, and an introduction to lasers and atomic structure. Solid state physics topics include crystal structure reciprocal lattices, lattice vibrations, Brillouin zones, thermal properties, magnetic properties, superconduction. The laboratory program contains computer-based physical data processing techniques plus advanced individual experiments in selected physics areas.

**Requisites:** PREREQ - KYA201 and KYA202 and KMA252

**Staff:** Dr PD Jarvis

**Teaching Pattern:** 33 lectures, 6 tutorials, 39 hrs lab

**Assessment:** 3-hr end-of-sem exam (75%), lab reports (25%)

**Recommended Texts:** Bransden BH & Joachain CJ, *Introduction to Quantum Mechanics*, Longman

**Offered in Courses:** [ S3G ] [ S3Y ]

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**KYA303 - Atomic, Nuclear and Semiconductor Physics**

**Description:** Atomic and nuclear physics studies atomic and nuclear structure from the point of view of understanding spectroscopic data. Topics include alkali and alkaline earth spectra, the physics of angular momentum, exchange forces, spin and the Pauli principle, many-electron atoms and the Zeeman effect, the periodic table; nuclear semi-empirical mass formulae, systematics of nuclear transformations, introduction to the nuclear shell model, and introduction to particle classification and the standard model. Semiconductor physics covers the quantum concepts related to electrical conductivity in solids, the Kronig-Penny model and the band theory, comparison of insulators, conductors and semi-conductors, theory of the semiconductor diode. The laboratory program contains computer-based physical data processing techniques plus advanced individual experiments and readings in selected physics areas.

**Requisites:** PREREQ - KYA201 and KYA202 and KMA252

**Staff:** Dr PD Jarvis, Prof J M Dickey

**Teaching Pattern:** 33 lectures, 6 tutorials, 39 hrs lab

**Assessment:** 3-hr end-of-sem exam (75%), lab reports (25%)


**Offered in Courses:** [ S3G ] [ S3Y ]

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**KYA306 - Astrophysics and Atmospheric Physics**

**Description:** Astrophysics is the investigation of the Universe. It enables us to study the behaviour of matter in extreme environments that cannot be replicated on Earth. Atmospheric physics plays an important role in understanding weather and climate systems. In this unit you will study the solar system, stars stellar evolution, collapsed objects such as white dwarfs, neutron stars and black holes galactic structure, and telescopes and data analysis techniques in astronomy. The atmospheric physics component of the course will look at the theory and structure of the middle atmosphere and the waves that affect it. The course includes theory and applications to real data of Fourier transforms in one dimension, digitising and windowing. This unit builds upon topics covered in the core second year physics units and is recommended for students intending to major in physics. KYA206 Astrophysical and Atmospheric Physics is not a prerequisite for this unit, but it is recommended.

**Requisites:** PREREQ - KYA201, KYA202, KMA252

**Staff:** Prof J Dickey, Dr D Murphy

**Teaching Pattern:** 3 x 1hr lectures weekly, 1hr tutorial weekly

**Assessment:** 3-hr end-of-semester exam (75%), internal assessment (25%)

**Offered in Courses:** [ S3G ] [ S3Y ]

**Unit Delivery Information:**

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**KYA314 - Dynamical Systems and Chaos (Unit not offered in 2006)**

**Special Note:** offered only in odd-numbered years

**Description:** Provides a grounding in theoretical physics, for students interested in doing Honours in Theoretical Physics or Applied Mathematics. Topics covered include: Linear and Non-linear systems, examples. Phase plane and phase space. The Hartmann Linearisation theorem. Co-dimension 1 bifurcations; saddle-node, pitchfork and Hopf bifurcations. Limit cycles and oscillations. Global bifurcations. Homoclinic and heteroclinic orbits. Characterisation of chaos. Routes to chaos, period doubling, secondary Hopf bifurcations, intermittency. Homoclinic chaos. Mel’nikov theory.

**Requisites:** PREREQ - (KYA201 and KYA202 and KMA254) or (KYA275 and KME271)

**Staff:** Prof LK Forbes

**Teaching Pattern:** 3 lectures, 1 tutorial weekly

**Assessment:** 3-hr end-of-sem exam (80%), assignments (20%)

KYA315 - Fluid Mechanics

**Special Note:** offered only in even-numbered years


**Requisites:** PREREQ - (KYA201 and KYA202 and KMA252) or (KYA275 and KME271)

**Staff:** Prof LK Forbes

**Teaching Pattern:** 3 lectures, 1 tutorial weekly

**Assessment:** 3-hr end-of-sem exam (80%), assignments (20%)

**Recommended Texts:**

**Offered in Courses:** [ S3G ] [ S3Y ]

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KYA410/411 - Physics 4 (Honours)

**Description:** Includes: (a) advanced lectures on a number of fields of Physics such as Plasma physics; Astrophysics; Advanced quantum mechanics; General relativity and cosmology; and Auroral physics; and (b) Research work (leading to a thesis) in one of the following - Radio astronomy; Optical astronomy; Theoretical physics

**Requisites:** PREREQ - BSc with major in Physics or equivalent

**Staff:** Prof J M Dickey, Dr PD Jarvis, Dr S Ellingsen and others

**Teaching Pattern:** 8 lectures weekly in sem1, research program throughout the year

**Assessment:** combination of exams on coursework and quality of research thesis. A seminar talk in October will be taken into consideration in determining the final result of the year

**Offered in Courses:** [ S4E ] [ S6X ]

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KYA412 - Physics 4 (Honours) F/T

**Description:** For details see KYA410/411

**Unit Delivery Information:**

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KYA413 - Physics 4 (Honours) P/T

**Description:** For details see KYA410/411

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KYA414 - Physics 4 (Honours) P/T

**Description:** For details see KYA410/411

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KYA510/511 - Graduate Diploma in Science with Honours, specialising in Physics

**Description:** Has the same objectives as KYA410/411. Full time/part time 'umbrella' code.

**Offered in Courses:** [ S6X ]

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KYA512 - Graduate Diploma in Science with Honours, specialising in Physics F/T

**Description:** For details see KYA510/511

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KYA513 - Graduate Diploma in Science with Honours, specialising in Physics P/T

**Description:** For details see KYA510/511
### KYA514 - Graduate Diploma in Science with Honours, specialising in Physics P/T

**Description:** For details see KYA510/511

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### KYA583 - Postgraduate unit

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### KYA586 - Postgraduate unit

**Description:** Students enrolled in the Graduate Diploma of Science, specialising in Physics, course who undertake units from Physics honours courses use this code if enrolling in two 8.33% units or a single 16.67% unit.

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### KYA589 - Honours unit

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### KYA806 - Master of Applied Science, Thesis

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### KYA807 - Master of Applied Science, Thesis
KZA161 - Biology of Animals

Description: Provides an introduction to the scientific study of animals. There is a strong emphasis on developing skills in practical zoology and scientific writing; students are expected to participate in some group activities. They are introduced to the characteristics of the major invertebrate and vertebrate phyla from the perspective of an evolutionary interpretation of diversity. Lectures in comparative animal physiology, with an emphasis on Australian examples, provide a functional basis for an understanding of animal adaptations.

Requisites: MEXCL - KZA150, KZA151, KZA101, KZA105, KPZ101, KPZ160

Staff: Assoc Prof SM Jones (Coordinator), Assoc Prof RW Rose, Assoc Prof RWG White

Teaching Pattern: 3 lectures and 3-hr practical weekly (13 wks)

Assessment: 3-hr exam (50%), laboratory and other assignments (50%)


Zoology 1 Practical Manual

Recommended Texts: Dissecting kit, laboratory coat

Offered in Courses: [S3A] [S3B] [S3G] [S3T] [S3V] [S3Y] [R3I]

KZA211 - Animal Evolution and Ecology

Description: This core unit provides a broad training in fundamental aspects of zoology and with KZA212 (other core unit) forms an essential basis for specialist studies in Zoology at level 3. This unit focuses on developing students' understanding of animal ecology and evolution. Lecture topics include: adaptive radiation, evolution of animal life cycles, and fundamental ecological principles. Practical classes aim to develop skills in observation, animal identification, data collection and analysis, oral and written communication, and an appreciation of the comparative approach to the study of animals. The practical format will be varied, involving some independent learning activities, and students will be required to participate in group work. There will be a weekend excursion early in semester. The excursion will introduce students to a range of field techniques, and will include animal observation and data collection exercises.

Requisites: PREREQ - KZA150 or KZA151 MEXCL - KZA205

Staff: Dr LA Barmuta, Dr MA Hindell, Dr RW Rose (Coordinator), Dr E Wapstra, Dr A Edwards (Practicals)

Teaching Pattern: 2 hours of lectures per week, and 4 hours of practicals per week

Assessment: End of semester 1 - 3 hr theory exam (50%), Practical work (50%)


Note: this text acts a key text in several 3rd year zoology units


Offered in Courses: [S3G] [S3M] [S3T] [S3V] [S3Y] [S3I]

KZA212 - Functional Biology of Animals

Description: This core unit provides a broad training in fundamental aspects of zoology, and with KZA211 (the other core unit), forms an essential basis for specialist studies in Zoology at level 3. This unit focuses on developing students' understanding of functional anatomy and comparative animal physiology from an evolutionary perspective. Lectures include: physiological integration and control, comparative physiology of circulation, respiration, excretion and osmoregulation, and food acquisition strategies. Practical classes aim to develop skills in observation, data collection and analysis, oral and written communication, and an appreciation of the comparative approach to the study of physiological adaptations in animals. The practical format will be varied, involving some independent learning activities, and students will be required to participate in group work.

Requisites: PREREQ - KZA150 or KZA151 MEXCL - KZA205

Staff: Dr A Edwards, Dr S Jones, Dr RW Rose (Coordinator), Dr Erik Wapstra

Teaching Pattern: 2 hours of lectures per week and 4 hours of practicals per week

Assessment: End of semester 2 - 3 hr theory exam (50%), Practical work (50%)


Practical Manual
**KZA215 - Tasmanian Fauna: Ecological & Evolutionary Studies**

**Description:** Tasmania has a distinctive fauna in both Australian and world terms. This unit aims to provide an overview of Tasmanian habitats and the faunas they support, and to use them to illustrate a range of ecological and evolutionary principles. The unit deals with a series of habitats that are particularly well-developed in Tasmania, such as streams, lakes, sedgelands, caves and the alpine zone, and describes some of the key components of their fauna, including crustaceans, amphibians, reptiles, birds and mammals. The topics discussed include the evolution of life on land, reproduction in cold climates, life in dilute waters, Gondwanan biogeography and island endemism. The practical component will develop your familiarity with the fauna through field observations and collections, and in the laboratory the use and design of identification keys.

**Requisites:** PREREQ - KZA150 or KZA151 or [* KZA101 and (* KPZ160 or * KPZ101)]

**Staff:** Assoc Prof AMM Richardson (Coordinator), Assoc Prof RWG White, A/Prof R Rose.

**Teaching Pattern:** 2x1-hr lectures, 4-hr practical weekly (13 wks), 2-day excursion

**Assessment:** end-of-sem 3-hr theory exam (40%), assignments (60%)

**Required Texts:** Tasmanian Fauna Practical Manual

**Offered in Courses:** [ S3G ] [ S3T ] [ S3Y ]

**Unit Delivery Information:**

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**KZA225/325 - Evolution, Ecology & Society**

**Description:** Examines contemporary theories and concepts in ecology and evolutionary biology in terms of the ways that these ideas are used to inform both scientific progress and public debate. Modern zoological theories are profoundly affecting such things as the ways in which we view developmental biology, macroevolution, conservation, the impacts of introduced species and the role of Darwinism in social policy. The unit is designed to develop critical thinking and debate about selected, currently topical concepts in Zoology through a series of structured readings, self-guided research and group discussions. The emphasis is on improving skills in finding and collating scientific evidence, understanding and evaluating competing arguments, and integrating and presenting scientific arguments in a professional manner.

**Requisites:** PREREQ - KZA150 or KZA151 or [* KZA101 and (* KPZ160 or * KPZ101)]

**Staff:** Dr LA Barmuta (Coordinator), Dr SM Jones, Dr A Hobday, Dr E Wapstra.

**Teaching Pattern:** 2x1-hr lectures, 4-hr practical/workshop weekly (13 wks)

**Assessment:** assignments (100%)


**Recommended Texts:** reading lists to be provided with course material

**Offered in Courses:** [ S3G ] [ S3T ] [ S3Y ]

**Unit Delivery Information:**

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**KZA301 - Behavioural Ecology**

**Description:** This unit aims to provide students with an understanding of behavioural ecology within an evolutionary framework. There will be an emphasis on fundamental principles (e.g., the ways in which animals interact with their own and other species and the environment, mechanisms to maximise reproductive success, determinants of fitness of an individual). In lectures, these principles will be highlighted by presentation of the history and theory of behavioural ecology, recent examples and advances (primary literature and research within the School), and detailed case studies. Practicals will develop students' understanding of relevant research methodology, with an emphasis on research design. Extended workshops/discussions will allow in depth exploration of specific areas of behavioural ecology, while a group research project will emphasise experimental design and data collection in a real situation. Scientific presentation skills will be developed through presentation of the research project to peers as a conference talk, and in a written report in the form of scientific journal article (e.g., Behavioural Ecology). An assignment in the format of a review in Trends in Ecology and Evolution will further develop the students' ability to synthesise and communicate cutting edge ideas in behavioural ecology and evolutionary biology.

**Requisites:** PREREQ - KZA205 or KZA211 and KZA212

**Staff:** Dr Erik Wapstra (coordinator), Dr Alistair Hobday, Guest contributors

**Teaching Pattern:** 2 hours of lectures per week, and 4 hours of practicals per week

**Assessment:** Short critique assignment: 1000-1500 words (15%), Research project (30 % total - seminar 10%, report 20%)(20 minute peer assessed group seminar, report to conform to manuscript guidelines for Behavioural Ecology), Review Essay: 2500 words (20%), Exam (35%)(2 hours)


KZA321 - Advanced Fisheries 1: Stock Assessment (Unit not offered in 2006)

Special Note: will be offered in 2007

Description: Introduces the relationship between fisheries management and assessment. The development of assessment models aimed at informing particular management objectives is highlighted. The themes developed include the limitations and uses of the different classes of single-species stock assessment models (depletion models, surplus-production models, delay-difference models, fully age-structured models, and length-based models); alternative fishery performance indicators, their limitations and how they may be compared; the principles of fisheries risk assessment; the use of decision tables; inter-relationships between stock assessment models, risk assessment models and management strategy evaluation.

Practical classes include the use of computers to implement an array of typical stock assessment models including those used in Tasmanian and other Australian fisheries. The practical component will culminate with each student assessing a unique data-set representing a real fishery in a research project.

Requisites: PREREQ - KZA254, KMA221, KXA251

Staff: tba

Teaching Pattern: 2 hrs lectures, 4 hrs practical weekly

Assessment: 1,000-word essay (10%), seminar (10%), reports on practical assignments (30%), 3-hr exam in Nov (50%)

Required Texts: Haddon M, Modelling and Quantitative Methods in Fisheries, Chapman & Hall, 2001

Offered in Courses: [ S3M ]

KZA322 - Advanced Fisheries 2: Fisheries and Ecosystem Management (Unit not offered in 2006)

Special Note: will be offered in 2007

Description: Places the field of fisheries stock assessment in the broader context of ecosystem management. The relationships between natural resource management options, fisheries economics, and long term sustainability will be highlighted. The themes developed include: differences (economic and other) between management strategies that use input controls with those that use output controls; the value of Marine Protected Areas to natural resource management; ecosystem modelling and its uses; the effects of fishing on the aquatic environment; and management strategy evaluation in an ecosystem context.

Practical classes will include the analysis of case studies of real fisheries in different ecosystems, including Tasmanian and other Australian examples. The practical component is designed to culminate in each student assessing the management of a real fishery. The results of the practical work will be presented in a research project.

Requisites: PREREQ - KZA254, KMA221, KXA251, KZA356

Staff: tba

Teaching Pattern: 2 hrs lectures, 4 hrs practical weekly

Assessment: 1,000-word essay (10%), seminar (10%), report on practical assignment (30%), 3-hr exam in Nov (50%)

Required Texts: tba

Recommended Texts: tba

Offered in Courses: [ S3M ]

KZA350 - Reproduction and Endocrinology for Conservation

Description: A fundamental requirement for conservation is successful reproduction of the species concerned. This unit aims to develop your knowledge of a species’ reproductive and stress physiologies and show how these are influenced by the environment. This information is vital for the implementation of sound conservation strategies and effective captive management of all species. Lectures provide a strong grounding in the physiology and endocrinology of reproduction and adrenal function in the higher vertebrates. Fundamental topics covered include: sexual differentiation; physiology of gestation and lactation in eutherian and marsupial mammals; comparative endocrinology of reproduction in birds and reptiles; adrenal physiology and the stress response. Complementary topics in current conservation-related research are explored in depth, with an emphasis on Australian and New Zealand examples. Discussions include: IVF and other reproductive technologies; immunology of reproduction; stress effects on reproduction; non-invasive hormone monitoring; endocrine disrupters. Practical classes illustrate relevant research techniques and include discussions of ethical issues in animal conservation. A field trip to a local wildlife park complements web-based research on current issues in captive management. Assignments develop the students’ ability to access primary literature, to critique and apply such information, and to present their research in written and oral formats.

Requisites: MEXCL - KZA358 PREREQ - KZA205 or (KZA211 and KZA212)

Staff: Assoc Prof SM Jones, Assoc Prof RW Rose

Teaching Pattern: 2x1-hr lectures, 3-hr practical weekly

Assessment: 3-hr exam in June (50%), practical reports, including literature analysis (50%)

Required Texts: Unit manual containing selected readings,

Laboratory coat

dissection kit

Recommended Texts: tba

Offered in Courses: [ S3G ] [ S3V ] [ S3T ] [ S3I ]

Unit Delivery Information:

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University of Tasmania, Unit Guide 2006  www.utas.edu.au/units/  748
KZA351 - Antarctic Ecology

Description: Provides a comprehensive understanding of the Antarctic marine ecosystem. The unit covers several key areas, such as the basic oceanographic features of the region and how these influence the distribution and abundance of nutrients, the role of microorganisms in the nutrient cycle, phytoplankton and their role in the food web, zooplankton communities, fish and squid communities and the role of marine mammals and seabirds. The unit also deals with the unique adaptations required by Antarctic organisms to enable them to exist in a highly adverse environment. The growing importance of resource management for the Southern ocean and the past and present history of exploitation of marine resources is also covered.

Requisites: PREREQ - KZA205 or KZA211 and KZA212

Staff: Assoc Prof MA Hindell (Coordinator), Dr A Hobday

Teaching Pattern: 2x1-hr lectures, 4-hr practical weekly

Assessment: practical reports (40%), essay (20%), 2-hr exam in Nov (40%)

Offered in Courses: [ S3G ] [ S3G ] [ S3T ] [ S3Y ]

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KZA353 - Evolutionary Biology & Biogeography

Description: Introduces students to current concepts in evolutionary biology, including the principles of taxonomy and systematics, and provides support for other Third Year Zoology units and a basis for Honours projects in the area. The unit deals with adaptation and natural selection, the species concept and modern taxonomic methods, phylogenetics, macroevolution and the way in which historical events and present day conditions combine to produce biogeographical patterns. The unit includes a practical component using the Tasmanian fauna. It complements most of the other third-year Zoology units.

Requisites: PREREQ - KZA205 or KZA211 and KZA212

Staff: Assoc Prof AMM Richardson (Coordinator), Assoc Prof RWG White

Teaching Pattern: 2x1-hr lectures, 4-hr practical weekly. A 5-day field excursion in Sept, based at Bronte Park in the Central Highlands, with equiv time deducted from practical classes during sem to compensate.

Assessment: practical reports (40%), 2,000-word essay (20%), 2-hr exam in Nov (40%)


Offered in Courses: [ S3G ] [ S3G ] [ S3T ] [ S3Y ] [ S3I ]

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KZA354 - Fisheries & Wildlife Management

Description: Provides an understanding of the rationales, strategies and methodologies of the management of fish and wildlife populations. The differing approaches required for management for exploitation and conservation are discussed. Local and overseas examples are studied. The multidisciplinary approach to successful management is stressed. An introduction is provided to the use of population simulation as a predictive tool in management of fisheries and wildlife.

Requisites: PREREQ - KZA205 or KZA211 and KZA212

Staff: Assoc Prof RWG White (Coordinator), Assoc Prof MA Hindell, Dr E Wapstra.

Teaching Pattern: 2x1-hr lectures, 4-hr practical weekly (6 wks); a 3-day field excursion to Maria.

Assessment: reports and assignments (30%), essay (20%), 2-hr exam in June (50%)

Required Texts: Dissecting kit including fine-pointed forceps, laboratory coat


Recommended Texts: tba

Offered in Courses: [ S3G ] [ S3T ] [ S3M ] [ S3Y ]

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KZA355 - Freshwater Ecology

Description: Develops the ecological and physiochemical concepts that are essential for the study of lakes, wetlands, and rivers. The unit emphasises the processes responsible for structuring populations and communities of organisms in open water and benthic habitats. Biological interactions (eg predation, competition) are covered, as well as foundation material such as the roles of lake stratification and of moving water in shaping aquatic communities. Recent advances in the practical applications of freshwater animals in biological monitoring and assessment are also presented.

Requisites: PREREQ - KZA205 or KZA211 and KZA212

Staff: Dr LA Barmuta (Coordinator), Assoc Prof RWG White

Teaching Pattern: 2x1-hr lectures, 4-hr practical weekly

Assessment: 2-hr exam in Nov (50%), essay (20%), 2 practical reports (30%)

Required Texts: Dissecting kit including fine-pointed forceps
KZA356 - Marine Ecology

Description: In Marine Ecology you will learn about the fundamental features and processes of marine systems. The influence of physical processes on the ecology of marine organisms is highlighted. The following themes are developed: influences of physical variables at a range of scales on communities and productivity; ecology of feeding and predator-prey interactions of plankton and fish; structuring forces of benthic communities and macroalgal habitats; biogeography of the sea; invasions by introduced species; marine conservation. Practical classes include fieldwork and the design of field programs. The major part of the practical component is a high-level research project conducted during a six-day visit to Maria Island in the mid-semester break over Easter. This incurs an extra charge to students. Students would find Quantitative Methods in Biology (KZA357), Antarctic Ecology (KZA351) and Freshwater Ecology (KZA355) particularly useful additional units.

Requisites: PREREQ - KZA205 or (KZA211 and KZA212)

Staff: Dr A Hobday (Coordinator), Prof C R Johnson

Teaching Pattern: 2x1-hr lectures, 4-hr practical weekly; a 6-day field excursion

Assessment: 1,000-word essay (10%), seminar (10%), reports on practical assignments (30%), 3-hr exam in June (50%)

KZA357 - Quantitative Methods in Biology

Description: Quantitative skills are among the basic and fundamental tools of professional zoologists and other biologists. They are necessary to design their studies, analyse and interpret their data, and to assess and interpret published studies. This unit provides a solid grounding in appropriate ways to collect and analyse common types of data in biology and ecology. It emphasises hands-on, practical experience with commonly used statistical software and addresses the problems most often encountered in dealing with biological and ecological data. The unit covers basic sampling and experimental design, data analysis using standard univariate techniques (eg analysis of variance and covariance, regression, analysis of categorical data) and introduces multivariate techniques for both pattern exploration and hypothesis testing. This unit is strongly recommended for ecology and environmental science students and those considering Honours.

Requisites: PREREQ - (KZA211 + KZA212), or KZA205 or KPA2405 or Yr-2 AgrSc unit as approved by HoS or by arrangement with HoS

Staff: Prof CR Johnson (Coordinator), Dr LA Barmuta

Teaching Pattern: 2x1-hr lectures, 4-hr practical weekly

Assessment: 3-hr exam in June (40%), practical reports (40%)

Required Texts: 3.5 in. computer diskettes

Recommended Texts: Quinn GP, Keough MK, Experimental Design and Data Analysis for Biologists, CUP, 2002

Offered in Courses: [ S3G ] [ S3T ] [ S3Y ] [ S3I ]

KZA400/401 - Zoology 4 (Honours)

Description: Intending Honours students should first consult the Honours Coordinator and potential supervisors before the end of the final year of their undergraduate course. The Honours course starts either in the first week of February with a thesis being submitted by the end of November or in the first week of August with all requirements being completed by the end of May in the following year. The program consists of the following elements: a literature review, written and verbal exercises and a research project. Each of these has a number of teaching objectives, not all of which are assessed and used in the final award. The final award is based on an assessment of 11 objectives, six of which come from the thesis. Full information on objectives and assessment criteria are contained in a booklet which is available from the School.

Requisites: PREREQ - BSc with major in Zoology or approved alternative, and at least a credit average in that major

Staff: Dr LA Barmuta (Coordinator)

Assessment: assignment (12%), seminar (18%), thesis (70%)

Recommended Texts: Quinn GP & Keough MJ, Experimental Design and Data Analysis for Biologists, CUP, Cambridge, 2002

Offered in Courses: [ S4E ] [ S6X ]
KZA402/403 - Biotechnology Honours in Zoology

**Description:** The program is designed to develop knowledge and skills in research oriented towards biotechnology, beyond those gained in undergraduate courses. Students will first complete a literature review, prepare a research plan, and present an introductory seminar, then conduct an independent research program over a period of about 27 weeks. During the research period students will prepare a research proposal in an area related to the research program. Finally, students will present a seminar and produce a research thesis. The School will provide specific details on assessment procedure and criteria used.

Students can commence the program in February or August.

**Requisites:** PREREQ - A biotechnology degree with an appropriate Zoology major. Students will normally have a Credit average. Alternative prerequisites will be at the discretion of the Head of School.

**Staff:** Zoology staff. The Honours program is coordinated by Dr. Leon Barmuta

**Assessment:** Students are assessed against standard criteria for objectives in the research proposal (2 objectives), the final seminar (2 objectives) and the research thesis (6 objectives). Assessments for the final seminar and research thesis count double.

**Offered in Courses:** [ S4V ]

KZA404 - Biotechnology Honours in Zoology (F/T)

**Description:** For details see KZA402/403

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KZA405 - Biotechnology Honours in Zoology (P/T)

**Description:** For details see KZA402/403

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KZA406 - Biotechnology Honours in Zoology (P/T)

**Description:** For details see KZA402/403

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KZA407 - Zoology 4 (Honours) F/T

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KZA408 - Zoology 4 (Honours) P/T

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KZA409 - Zoology 4 (Honours) P/T

**Description:** For details see KZA400/401

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KZA450/451 - Marine, Freshwater and Antarctic Biology (Honours)

**Description:** Has the same broad objectives as KPA400/401 and KZA400/401; for details, see KPA450/451.

**Staff:** Dr M Hindell (Coordinator)

KZA452 - Marine, Freshwater and Antarctic Biology (Honours) F/T

**Description:** For details see KZA450/451

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KZA453 - Marine, Freshwater and Antarctic Biology (Honours) P/T
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For details see KZA450/451

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#### KZA454 - Marine, Freshwater and Antarctic Biology (Honours) P/T

**Description:** For details see KZA450/451

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#### KZA500/501 - Graduate Diploma in Science with Honours, specialising in Zoology

**Description:** Has the same objectives as KZA400/401. Full time/part time ‘umbrella’ code.

**Offered in Courses:** [ S6X ]

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#### KZA502 - Graduate Diploma in Science with Honours, specialising in Zoology

**Description:** Has the same objectives as KZA400/401. Full time/part time ‘umbrella’ code.

**Offered in Courses:** [ S6X ]

**Unit Delivery Information:**

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#### KZA503 - Graduate Diploma in Science with Honours, specialising in Zoology

**Description:** Has the same objectives as KZA400/401. Full time/part time ‘umbrella’ code.

**Offered in Courses:** [ S6X ]

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#### KZA504 - Graduate Diploma in Science with Honours, specialising in Zoology

**Description:** Has the same objectives as KZA400/401. Full time/part time ‘umbrella’ code.

**Offered in Courses:** [ S6X ]

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ELT501 - Foundations of University Learning and Teaching

Description: Foundations of University Learning and Teaching will explore the principles, theories and practice of university learning and teaching through a variety of teaching modes and flexible delivery options. Participants will be introduced to a range of approaches to teaching, knowledge development, assessment and evaluation including self and peer review of teaching. There will be a particular focus on developing an understanding of learning including different forms of knowledge development (e.g., strategies that encourage deep learning and reduce reliance on surface learning). There will also be an emphasis on meeting diverse student needs and developing a global perspective in curriculum design.

This unit is the core foundation of the graduate certificate and will introduce a range of topics that will be further developed in the remaining units of the course.

Staff: Dr Heather Smigiel, Mr Neil Trivett

Teaching Pattern: Block teaching and web-dependant tutorials

Assessment: participation and written responses to online tutorials and a situational/applied assessment task on unit design, implementation, evaluation and assessment including reflection, drawing upon appropriate literature, self and student review.


Offered in Courses: [ E5T ]

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ELT502 - Enhancing Professional Practice in University Learning and Teaching

Description: This unit will promote the enhancement of professional practice in university learning and teaching including developing the knowledge of the theory and practice of evaluation-based teaching through critical self-reflection and peer review. Group work and problem solving will be a feature of these processes.

Research into the assessment practices and how participants currently evaluate their learning and teaching contexts will also be a feature.

Requisites: PREREQ - ELT501

Staff: Dr Heather Smigiel, Mr Neil Trivett

Teaching Pattern: Block teaching structured individual and small group work (to be negotiated) and directed reading

Assessment: Assessment based on observations and insights gained from peer group meetings and Learning and Teaching self development plan situated within the research examining effective teaching in a higher education context.


Offered in Courses: [ E5T ]

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ELT503 - Innovation and Leadership in University Learning and Teaching

Description: This unit will support participants in identifying a possible innovation in their professional practice. This may incorporate curriculum design, delivery and assessment, teaching/research nexus, internationalisation or any other university learning and teaching priority. Participants will be required to plan the implementation of this innovation in their workplace demonstrating knowledge of contemporary leadership and change management theories as well as the underlying teaching and learning principles and practices associated with this innovation.

Requisites: PREREQ - ELT501

Staff: Dr Heather Smigiel, Mr Neil Trivett

Teaching Pattern: Block teaching with the remainder of the program delivered flexibly

Assessment: Peer and lecturer assessment of an oral presentation describing a learning and teaching innovation, including rationale and underlying learning and teaching issues and principles and a written innovation plan incorporating knowledge of leadership principles and change management theory.

Offered in Courses: [ E5T ]

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ELT504 - University Learning and Teaching Development Project

Special Note: Participation in this project may be subject to individual negotiation and approval by the Head of School or Dean (Faculty Teaching and Learning should be informed where appropriate)
**Description:** This unit will provide participants with an opportunity to undertake a supervised project on a strategic learning and teaching priority of the University that is of demonstrated benefit to the individual and their school. Participants will be required to lead the implementation and evaluation of a project in their workplace incorporating knowledge developed in previous subjects in the course.

**Requisites:** PREREQ - ELT502 and ELT503

**Staff:** Dr Heather Smigiel & Neil Trivett with co-supervision within faculty if appropriate.

**Teaching Pattern:** Block teaching and individual supervision

**Assessment:** Participants will be required to lead the implementation and evaluation of an agreed project in their workplace on a strategic priority of the University that is of demonstrated benefit to the individual and their school incorporating knowledge developed in previous subjects in the course and an oral presentation on the outcomes of the project including any artefacts arising from the project.

**Offered in Courses:** [ E5T ]

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**ELT505 - Scholarship of Teaching**

**Description:** This unit will explore the principles, theories and practice of the scholarship of university teaching. Students will be introduced to a range of approaches to engage with the scholarship of teaching. Such approaches will broaden conceptions of what evidence, practice and scholarship. Students will also be introduced to a broad range of literature that redefines the notion of scholarship. Different ways of viewing the production of knowledge will be explored, including self and peer review and collaborative journaling, with the aim of reflecting upon, improving, and evaluating teaching. An additional focus in the unit is on the value of reporting this process to a wider community practice.

**Requisites:** PREREQ - ELT501 PREREQ - ELT502

**Staff:** Dr Heather Smigiel, Neil Trivett

**Teaching Pattern:** Three days block teaching, and flexible scheduled group seminars

**Assessment:** Oral presentation (15%) Journal (25%) & collaborative article suitable for publication in peer reviewed academic journal (60%)

**Required Texts:** Book readings

**Offered in Courses:** [ E5T ]

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UNITS CODED UPP and XAA – UNIVERSITY PREPARATION

UPP010 - Study Skills
Special Note: Not available internally in semester 2 at the Cradle Coast Campus
Description: Key areas covered include motivation, stress and time management, goal and task definition and learning methods. Available in semester 1 as both flexible (distance education) and attending mode unit and in semester 2 in flexible mode.
Teaching Pattern: Attending sem 1; flexible teaching in sem 1 & amp; 2
Offered in Courses: [ E0D ]
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UPP020 - Communications I
Description: Formal academic writing and speaking skills particularly essay writing and oral presentations. Available in semester 1 as both flexible (distance education) and attending mode unit, available in semester 2 only as flexible unit.
Teaching Pattern: Attending in sem 1; flexible teaching in sem 1 & amp; 2
Offered in Courses: [ E0D ]
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UPP030 - Communications II
Description: Interpersonal communication skills including negotiation, problem solving and assertiveness. Available semester 2 as attending mode unit only.
Offered in Courses: [ E0D ]
Unit Delivery Information:

<table>
<thead>
<tr>
<th>Unit</th>
<th>Weight</th>
<th>Sem 1</th>
<th>Sem 2</th>
<th>Full Year</th>
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UPP040 - Academic Literacy
Description: Reading, learning, thinking and basic research skills. Available semester 2 as attending and flexible mode unit
Offered in Courses: [ E0D ]
Unit Delivery Information:

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<tr>
<th>Unit</th>
<th>Weight</th>
<th>Sem 1</th>
<th>Sem 2</th>
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UPP050 - Using Information Technology for Academic Purposes I
Special Note: students enrolling in distance option must meet certain prerequisites.
Description: Main features of this units include: computerised and flexible library services, basic presentation -- word processing, slides, spreadsheets; communication -- e-mail, discussion boards; information research -- World Wide Web, electronic databases; and video-conferencing. Available in semester one as attending mode unit and in either semester as flexible mode unit.
Teaching Pattern: Attending or flexible semester 1; flexible teaching in sem 2
Offered in Courses: [ E0D ]
Unit Delivery Information:

<table>
<thead>
<tr>
<th>Unit</th>
<th>Weight</th>
<th>Sem 1</th>
<th>Sem 2</th>
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UPP060 - Using Information Technology for Academic Purposes II

Description: Expands upon IT related areas of information presentation, communications and research covered in UPP050. Available semester 2 as attending mode unit only.
Requisites: PREREQ - UPP050
Offered in Courses: [ EOD ]

Unit Delivery Information:

<table>
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<th>Unit</th>
<th>Weight</th>
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<th>Sem 2</th>
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UPP070 - Academic Studies I

Description: Students choose one or two units from a range of first year units which are offered in semester 1. Attendance mode varies depending on the unit/s taken. Mode may be either attending or distance mode. Students may attend classes, take part in all learning activities and complete one assignment over a period of 4–6 weeks. They will be allowed slightly longer than normal to complete the assignment and may seek advice and guidance from UPP teaching staff as well as from the teaching academics in that course. Students will submit a brief resume of the outcomes of their experience in each academic unit to the UPP coordinator.
Teaching Pattern: flexible teaching in sem 1
Offered in Courses: [ EOD ]

Unit Delivery Information:

<table>
<thead>
<tr>
<th>Unit</th>
<th>Weight</th>
<th>Sem 1</th>
<th>Sem 2</th>
<th>Full Year</th>
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UPP080 - Academic Studies II

Description: Students choose one or two from a range of first year units which are offered in semester 2 and other details will be similar to those outlined for Academic Studies I.
Teaching Pattern: flexible teaching in sem 2
Offered in Courses: [ EOD ]

Unit Delivery Information:

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UPP090 - Bridging Maths

Special Note: Only available internally in semester 2 via Cradle Coast Campus
Description: This unit is designed to meet the needs of students seeking to study at a tertiary level, it aims to develop basic skills and confidence in learning mathematics. The unit aims to prepare students for non-Science course areas such as Humanities, Nursing, Commerce and Primary and Early Childhood Education.
Teaching Pattern: attending sem 2; flexible teaching in sem 1 & 2
Offered in Courses: [ EOD ]

Unit Delivery Information:

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<th>Sem 2</th>
<th>Full Year</th>
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XAA001 - UniStart Program

Description: A five-day face-to-face program is offered at the beginning of each semester and/or access to online materials and/or workshops throughout the semester.
Dates for face-to-face programs, 2005:
Hobart: 27th January - 2nd February, 10th - 17th February or 30th June - 6th July
Launceston: 27th January - 2nd February, 10th - 16th February or 30th June - 6th July
Cradle Coast Campus: 3rd - 9th February or 23rd - 29th June
Offered in Courses: [ X0A ]

Unit Delivery Information:

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