Bachelor of Games and Interactive Entertainment - Dean's Scholars Program (IT04)

Year offered: 2010
Admissions: Yes
CRICOS code: 059710E
Course duration (full-time): 3 years
Domestic fees (indicative): 2010: CSP $3,720 (indicative) per semester
International Fees (indicative): 2010: $11,000 (indicative) per semester
Domestic Entry: February: Fixed closing date - 27th November, 2009
International Entry: February: Fixed closing date - 27th November, 2009. This course is only available to international students completing Year 12 in Australia

Overview
The Dean’s Scholars Program is an accelerated honours program allowing completion of the Bachelor of Games and Interactive Entertainment and an honours degree in three years instead of four years. This accelerated program is designed for students with an OP 1 or 2 (or equivalent), who can also demonstrate active involvement in their school and local community activities.

Choose your career path in this multibillion dollar industry. This degree allows the development of creative skills ranging from the technical to the artistic. You will gain experience in the whole process of game and interactive media development, from identification and evaluation of ideas, creation of design concepts, critique of existing and potential products, analysis of cultural impact and industry trends, through to the development and delivery of a final product.

You will learn about the games and interactive entertainment industries through interacting with industry members, reviewing the development process of games and related products, participating in class discussions and studying industry literature. You will discover visualisation, interaction and communication techniques as applied to games and interactive media. You will be introduced to generic programming concepts and problem-solving strategies, team work, and the ethical and social responsibilities of an interactive media professional.

Who should apply?
The program is open to applicants currently undertaking Year 12 studies at a secondary school, and who achieve an OP 1 or 2 (or interstate equivalent). Applicants must be outstanding current, or returning from a gap year, Year 12 students who completed their Year 12 education in Australia.

Financial Support
Domestic students offered a place in the Dean’s Scholars Program will have their undergraduate HECS paid by the Faculty and those proceeding to Honours will also receive full HECS support.

International students will have one-third of their tuition fees paid by the faculty for the undergraduate and honours programs.

Students are responsible for all other costs associated with their program.

OP Guarantee
The OP Guarantee does not apply to this program.

Deferment
QUT’s deferment policy does not apply to this course.

Cooperative Education Program
The Cooperative Education Program gives students the opportunity of 10-12 months paid industry placement during your course where they can integrate real experience with what they are learning in their degree. Companies that QUT’s Coop Ed students have worked with include Energex, Boeing, CITEC, CSC Mining, Environmental Protection Agency, Dialog, UNiTAB, RACQ and many Queensland Government departments.

Students participating in this program enrol in INS011 Cooperative Education 1 and INS012 Cooperative Education 2 in the second semester of the program. The cooperative education program and its mentoring and assessment requirements make up the required contact and assessment of both units. Eligibility criteria apply. International students are not eligible due to visa restrictions.
Part-time students who are working in a professional position related to the BGIE may be able to use their current employment to meet the criteria for completing INS011 Cooperative Education 1, after completion of 168 credit points in the Bachelor of Games and Interactive Entertainment, subject to meeting eligibility criteria. Further information about this option is available from Student Services, Level 3, O Block Podium, Gardens Point Campus.

Find out more about the Cooperative Education Program.

Professional Recognition
As a graduate of the Dean's Scholars Program you will be qualified for professional accreditation and employment in fields relevant to your specialisation.

Unit Incompatibility/Translation Information
Details on the translation and incompatibility of old and new units is located here:
Undergraduate Translation Table
If you have completed the unit(s) listed under the “Translation Unit Codes” column you are not permitted to enrol in the listed new code.

Fixed Closing Date
Applications for this program will close on 26 November, 2010.

Additional Entry Requirements
Applicants are required to complete a questionnaire.

Further Information
For further information about this course, please contact the following:
Peter Wyeth
Phone: +61 7 3138 2782
Email: enquiry.scitech@qut.edu.au

Bachelor of Games and Interactive Entertainment - Dean's Scholars Program

Year 1, Semester 1
INB180 Computer Games Studies
INB104 Building IT Systems
INB103 Industry Insights
INB182 Introducing Design

Year 1, Semester 2
INB181 Introduction to Games Production

Year 2, Semester 1
INB183 Advanced Game Design
INB184 Game Industry Insights
INB185 Game Project Management
INB186 Game Engine Development

Year 2, Semester 2
INB379 Game Project Design

Year 2, Summer
INB380 Games Project

Year 3, Semester 1
INN700 Introduction To Research
INN401 Honours Dissertation 1
INN Honours Elective
INN Honours Elective

Year 3, Semester 2
INN402 Honours Dissertation 2
INN403 Honours Dissertation 3
INN404 Honours Dissertation 4

Bachelor of Games & Interactive Entertainment Majors

Course structure (Block B)

Animation
KIB105 Animation and Motion Graphics
KIB108 Animation History and Practices
KVB105 Drawing for Design
KVB106 Drawing for Animation
### Course structure (Block C)

**Students select a Minor from the following**

**Animation**
- KIB105 Animation and Motion Graphics
- KVB105 Drawing for Design
- KVB106 Drawing for Animation
- KIB108 Animation History and Practices

**Advanced Animation**
- KIB221 Animation: CG Toolkit
- KIB320 Advanced Concepts in Computer Animation 1
- KIB321 Advanced Concepts in Computer Animation 2
- KIB316 Virtual Environments

- Entry into this minor is limited to IT04 students enrolled in the Animation Major, who have completed at least 96 credit points of study, and have gained an average grade of 5.0 or above across the following units from the Animation Major: KIB105, KIB108, KVB105, KVB106.

**Advanced Software Technologies**
- INB365 Systems Programming
- INB372 Agile Software Development
- INB374 Enterprise Software Architecture
- INB382 Real Time Rendering Techniques

- OR
- INB383 AI for Games

- Only available to students doing the Software Technologies major

**Digital Media**
- KIB101 Visual Communication
- KIB102 Visual Interactions
- INB345 Mobile Devices
- INB386 Advanced Multimedia Systems
- INB309 Embodied Interactions
- KIB230 Interface and Information Design
- INB385 Multimedia Systems
- KIB314 Tangible Media

**Game Design**
- INB280 Fundamentals of Game Design
- INB272 Interaction Design
- KIB201 Concept Development for Game Design and Interactive Media
- KIB202 Enabling Immersion
- INB281 Advanced Game Design
- KIB214 Design for Interactive Media

- AND
- Two units selected from the following:
  - DAB110 Architectural Design 1
  - DEB201 Digital Communication
  - DTB101 Interior Design 1
  - DNB101 Industrial Design 1

**Software Technologies**
- INB270 Programming
- MAB281 Mathematics for Computer Graphics
- INB210 Databases
- INB250 Systems Architecture
- INB370 Software Development
- INB371 Data Structures and Algorithms
- INB381 Modelling and Animation Techniques
- INB382 Real Time Rendering Techniques

- OR
- INB383 AI for Games

* Requirements for this Major is a SA or better in Queensland Maths B (or equivalent)

**Entrepreneurship**
- BSB115 Management
- MGB223 Entrepreneurship and Innovation
- MGB324 Managing Business Growth

- Plus one from the following:
  - BSB126 Marketing
  - MGB200 Leading Organisations

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**Bachelor of Games & Interactive Entertainment Minors**
### Game Design
- **KIB201** Concept Development for Game Design and Interactive Media
- **KIB202** Enabling Immersion
- **INB280** Fundamentals of Game Design
- **INB281** Advanced Game Design
  
  OR

- **INB272** Interaction Design

### Legal Issues
- **LWB141** Legal Institutions and Method
- **LWB136** Contracts A
  - Two units selected from the following
  - **LWB137** Contracts B
  - **LWB142** Law, Society and Justice
  - **LWB480** Media Law
  - **LWB482** Internet Law
  - **LWB486** Intellectual Property Law

### Marketing
- **BSB126** Marketing
  - Three units selected from the following
- **AMB251** Innovation and Brand Management
- **AMB240** Marketing Planning and Management
- **AMB201** Marketing and Audience Research
- **AMB359** Strategic Marketing

### Mathematics for Games#
- **MAB120** Algebra and Calculus
- **MAB121** Calculus and Differential Equations
- **MAB122** Algebra and Analytic Geometry
- **MAB312** Linear Algebra
  
  # Students who have completed Maths C can substitute MAB120 with one of the following units: MAB311, MAB481 or MAB422

### Mobile and Network Technologies
- **INB102** Emerging Technology
- **INB251** Networks
- **INB350** Internet Protocols and Services
- **INB353** Wireless and Mobile Networks

### Sound Design
- **KMB106** Music and Sound for Multimedia
- **KMB107** Sound, Image, Text

### Software Technologies
- **INB270** Programming
- **INB210** Databases
- **INB250** Systems Architecture
- **INB371** Data Structures and Algorithms
  
  This minor is not available to students who are undertaking the Software Technologies Major

### Physics for Games
- **MAB121** Calculus and Differential Equations
- **PQB250** Mechanics and Electromagnetism
- **PQB251** Waves and Optics
  - Choose 1 from the following
    - **PQB450** Energy, Fields and Radiation
    - **PQB460** Astrophysics 1
    - **PCB593** Digital Image Processing

### Potential Careers:

### UNIT SYNOPSES

#### AMB201 MARKETING AND AUDIENCE RESEARCH
This unit provides an introduction to the conduct and evaluation of marketing and audience research across the disciplines of advertising, marketing and public relations. Class members explore how field studies, survey and experimental research are employed to support advertising, marketing and public relations information needs. The unit provides an overview of research process, research design, methods of data collection and analysis, and the development of research proposals to support decision-making. Class members also explore issues related to research on media audiences, research ethics, and the management of client briefings.

**Prerequisites:** BSB126, CTB126, BSB116, or BSB117

**Antirequisites:** MIB305, MGB220, COB334

**Equivalents:** CTB201

**Credit points:** 12

**Contact hours:** 3 per week

**Campus:** Gardens Point and Caboolture

**Teaching period:** 2010 SEM-1, 2010 SEM-2 and 2010 SUM

#### AMB240 MARKETING PLANNING AND MANAGEMENT
This unit extends the student's knowledge of the fundamental marketing concepts and theories introduced in
the Faculty Core unit in Marketing, by adding further breadth and depth of knowledge of marketing and developing skills in the application of this knowledge to marketing planning and management within the business environment. Emphasis is on the role of the marketing manager at the product management level in undertaking analysis, planning, implementation and control of marketing activities. **Prerequisites:** BSB126 or CTB126 **Equivalents:** CTB240 **Credit points:** 12 **Contact hours:** 3 per week **Campus:** Gardens Point and Caboolture **Teaching period:** 2010 SEM-1 and 2010 SEM-2

**AMB251 INNOVATION AND BRAND MANAGEMENT**

This unit covers the dynamics of product and service innovation within the marketing function of an organisation. Products are defined in the broadest sense as both tangible and intangible and include the various categories of consumer and industrial products and services. The course covers product market analysis, the product/service development process, design, innovation, research and testing, new product financial analysis, branding and packaging, and new product commercialisation. **Prerequisites:** BSB126, BSB116, or CTB126 **Antirequisites:** MIB227 **Credit points:** 12 **Contact hours:** 3 per week **Campus:** Gardens Point **Teaching period:** 2010 SEM-2

**AMB359 STRATEGIC MARKETING**

Emphasis of the capstone Marketing unit is on the role of marketing manager at the corporate and strategic business unit/division levels. Students are exposed to a variety of strategic marketing techniques and issues, and learn how to apply these in corporate planning and management. Topics include: developing and critiquing strategic marketing planning models; recognising the importance of market focus; determining what marketing strategy can realistically be accomplished for a business; identifying underlying factors that must be considered in developing marketing strategy for a market-oriented organisation; discussing problems in successful implementation of marketing strategy; and organising for successful strategy implementation. **Prerequisites:** AMB340, and AMB335 or AMB241 **Equivalents:** AMB341 **Credit points:** 12 **Campus:** Gardens Point and Caboolture **Teaching period:** 2010 SEM-1 and 2010 SEM-2

**BSB115 MANAGEMENT**

The unit provides an introduction to the theories and practice of management and organisations. Emphasis is on the conceptual and people skills that are needed in all areas of management and in all areas of organisational life. The unit acknowledges that organisations exist in an increasingly international environment where the emphasis will be on knowledge, the ability to learn, to change and to innovate. Organisations are viewed from individual, group, corporate and external environmental perspectives. **Antirequisites:** BSD115 **Equivalents:** CTB115 **Credit points:** 12 **Contact hours:** 3 per week **Campus:** Gardens Point and Caboolture **Teaching period:** 2010 SEM-1, 2010 SEM-2 and 2010 SUM

**BSB126 MARKETING**

This introductory subject examines the role and importance of marketing to the contemporary organisation. Emphasis is placed on understanding the basic principles and practices of marketing such as the marketing concept, market segmentation, management information systems and consumer behaviour. The unit explores the various elements of the marketing mix, with special reference to product, price, distribution, and promotion, including advertising and public relations. By way of introduction only, key issues relating to services marketing, e-marketing and strategic marketing are also canvassed. **Antirequisites:** BSB116 **Equivalents:** CTB126 **Credit points:** 12 **Contact hours:** 4 per week **Campus:** Gardens Point and Caboolture **Teaching period:** 2010 SEM-1, 2010 SEM-2 and 2010 SUM

**DAB110 ARCHITECTURAL DESIGN 1**

This unit offers a broad introduction to the field of design as applied to architecture. It uses developmental exercises to enhance student perceptions of the built environment in a problem based learning environment. Analysis of the constructed environment leads to a number of design projects that engage with issues of context, tectonics, planning, form, and spatial quality. Orthogonal drawing exercises, freehand sketching, presentation graphics and model making all form part of the unit content. Teaching and learning activities are spread across lectures, tutorials, and studio based activities. **Prerequisites:** DEB103 or DLB130 or DNB101 or DTB101. DEB103 can be studied in the same teaching period as DAB110 **Equivalents:** ADB001 **Credit points:** 12 **Contact hours:** 4 per week **Campus:** Gardens Point **Teaching period:** 2010 SEM-1

**DEB201 DIGITAL COMMUNICATION**

This unit introduces students to the foundational aspects of digital design communication, placing generic design in context and focusing on multidisciplinarity in the stages of the design process. This unit is an approach to the theory and practice of digital media, exploring the translation from manual to digital media in design communication and presentation. **Credit points:** 12 **Contact hours:** 3 per week **Campus:** Gardens Point **Teaching period:** 2010 SEM-2

**DNB101 INDUSTRIAL DESIGN 1**
Industrial design revolves around the creation of products that satisfy human needs within the constraints of industrial and commercial production. This involves the manipulation of form with an understanding of structure, function, and beauty. Through projects students will be exposed to: basic design elements and principles; introduction to product visualisation techniques including concept sketching and marker rendering; design process and concept development; basic model making techniques; design presentation.

Prerequisites: DEB103 or DAB110 or DLB130 or DTB101. DEB103 can be studied in the same teaching period as DAB101  Equivalents: ADB201  Credit points: 12  Contact hours: 4 per week  Campus: Gardens Point  Teaching period: 2010 SEM-1

DTB101 INTERIOR DESIGN 1
This unit provides foundational material for the study of interior design. Students will be introduced to design theory, methodology and aesthetics. Design will be explored as an interpretive process. Topics covered in the context of projects for the unit include: The studio as a way of learning; Introductory design exercises exploring two and three dimensional elements as they relate to the interior design context; Freehand sketching, principles of perspective; Mechanical drawing, principles of scaled drawing; Presentation and visual communication skills; Environmental issues and sustainability.  Prerequisites: DEB103 or DAB110 or DLB130 or DNB101. DEB103 can be studied in the same teaching period as DTB101  Equivalents: ADB101  Credit points: 12  Contact hours: 4 per week  Campus: Gardens Point  Teaching period: 2010 SEM-1

INB102 EMERGING TECHNOLOGY
The aim of this unit is to provide you with a conceptual framework so that you clearly identify Information Technologies and their purpose. This task will be fun as it covers a wide spectrum of ideas and allows us to examine some currently popular technologies. Information Technology has become so entwined with everyday life that identifying its scope is difficult, which also makes it difficult to identify opportunities where IT might further infiltrate into our daily lives for work and play. To achieve these aims, the unit introduces you to some of the theories and engineering practicalities that have already resulted in technological advances in the area of information technology. Concepts leading to existing technologies are introduced during lectures, which are followed by laboratory sessions where students will be encouraged to discuss social change, future information tools and explore the concepts required for constructing these technologies.

Antirequisites: ITB005  Credit points: 12  Contact hours: 3 per week  Campus: Gardens Point  Teaching period: 2010 SEM-1 and 2010 SEM-2

INB103 INDUSTRY INSIGHTS
This unit aims to develop your awareness of the career possibilities in the ICT industry and to equip you with some of the essential skills required of an ICT professional. The unit helps you to derive a roadmap for your career; to enable you to identify the qualities, skills and interests you need to possess, to plan your career path. The unit will also introduce you the inter-disciplinary nature of ICT careers.

Antirequisites: ITB002  Credit points: 12  Contact hours: 3 per week  Campus: Gardens Point  Teaching period: 2010 SEM-1 and 2010 SEM-2

INB104 BUILDING IT SYSTEMS
This team-based unit is an integrated introduction to information technology designed to engage, inspire and inform and will demonstrate the important role that technical system design and development plays in achieving robust operation of a large variety of technological solutions. This unit will give you substantial hands-on, practical learning experiences and will motivate you through engagement in the creative, explorative and meaningful development of technological artefacts that operate in real world contexts.

Antirequisites: ITB001  Credit points: 12  Contact hours: 3 per week  Campus: Gardens Point  Teaching period: 2010 SEM-1 and 2010 SEM-2

INB180 COMPUTER GAMES STUDIES
This unit is designed to give you a clear understanding of the socio-cultural issues that affect the computer game industry. Through critical review of games and games industry literature, playing games and actively participating in classroom discussion you will develop your capacity to join in the discourse about the design, impact and future direction of computer games in our society.

Antirequisites: INN180, ITB750  Credit points: 12  Contact hours: 3 per week  Campus: Gardens Point  Teaching period: 2010 SEM-1

INB181 INTRODUCTION TO GAMES PRODUCTION
This subject will provide you with knowledge and skills in games production. By gaining an overview of the production process, you will learn how the technology and the people involved integrate into a coherent and efficient manufacturing process. By the end of this subject you will have the knowledge to conceive, create, integrate and optimise tools and personnel into a complete games production system.

Antirequisites: INN181  Equivalents: ITB751, ITN751
INB210 DATABASES

The aim of this unit is to help you develop your knowledge, understand a formal specification tool (ORM) for modelling information systems unambiguously and to apply this formal technique to conceptualise information systems found in many real world application domains.

Assumed knowledge: Students are expected to have solid IT background knowledge (e.g., completion of at least 192 credit points) Equivalents: ITB004, ITB115 Credit points: 12 Contact hours: 3 per week Campus: Gardens Point Teaching period: 2010 SEM-1

INB250 SYSTEMS ARCHITECTURE

Contemporary computer-based systems are built from a wide range of technologies working at different levels of abstraction, from microprocessor hardware, to operating system and application software, to entire communications networks. At each abstraction level different techniques are needed to understand emergent properties of the system. This unit introduces some of the foundational principles commonly used to reason about the behaviour of computer-dependent systems at different levels of abstraction. Such techniques are especially important in the context of safety-, security- or mission-critical systems.

Assumed knowledge: Basic familiarity with set theory (Venn diagrams and set operators), elementary algebra (polynomial and summation expressions, exponents and logarithms, etc) and simple probability concepts (permutations and combinations). Credit points: 12 Contact hours: 3 per week Campus: Gardens Point Teaching period: 2010 SEM-2

INB280 FUNDAMENTALS OF GAME DESIGN

Modern games production is a complex process involving various businesses and organisations, working with budgets in the tens of millions. One of the roles within a game production team is that of the game designer. It is crucial that a game designer understands how to create a game world, the rules that govern game play and other high level design tasks. This subject provides an introduction to game design, by starting with high level conceptual design tasks. This unit introduces some of the foundational principles and key concepts associated with the theory, practices and challenges associated with the development of computer-based interactive systems.

Prerequisites: INB180 or ENB246 Equivalents: ITB003, ITB112, ITB411, INN270 Credit points: 12 Contact hours: 3 per week Campus: Gardens Point Teaching period: 2010 SEM-2

INB281 ADVANCED GAME DESIGN

This unit will provide you with theoretical and practical knowledge of advanced games design concepts; that is, specific activities undertaken by game designers and their purpose. By the end of this unit you will have the knowledge to identify problems and suggest solutions for innovative game designs, as well as understand how to carry out the process of designing a game yourself. You will possess practical and theoretical knowledge of game design issues.
such as: how to design a game level, how to design a task and reward a player for completing it, how to ensure that the player knows how to progress through the game and how to design characters whose behaviour and dialogue provide clues and prompts to the player.

**Prerequisites:** INB280  
**Equivalents:** ITB017  
**Credit points:** 12  
**Contact hours:** 3 per week  
**Campus:** Gardens Point  
**Teaching period:** 2010 SEM-1

**INB345 MOBILE DEVICES**

This unit provides the opportunity for exploring new and emerging mobile devices and wireless technology including iPhone, Netbook, 3G, WiMax, and RFID. Students will critically review and understand how they can be used for current contexts such as government, business, education and social community, as well as emerging ‘wilderness’ environments with no power and wired communication. Students will appreciate the impacts of these devices and be inspired for the current and future opportunities in ICT usage trends.

**Credit points:** 12  
**Contact hours:** 3 per week  
**Campus:** Gardens Point  
**Teaching period:** 2010 SEM-1

**INB350 INTERNET PROTOCOLS AND SERVICES**

An understanding of the theoretical and practical concepts of network protocols and services is highly useful and relevant to network engineers and others working in the Information Processing industries. This unit introduces you to Internet protocols and the design, implementation and operation of network based applications. Theory and practical skills taught in this unit will be useful if you intend undertaking further networking units.

**Prerequisites:** INB251 or ITB006 or ITB510  
**Antirequisites:** ITB264, ITB629, ITB720, ITN525, ITN667, ITN720  
**Credit points:** 12  
**Contact hours:** 3 per week  
**Campus:** Gardens Point  
**Teaching period:** 2010 SEM-1

**INB353 WIRELESS AND MOBILE NETWORKS**

This unit provides you with the skills to be able to design and understand the issues involved with different types of wireless communications systems. It develops your knowledge of Wide Area Networks (WANs), Local Area Networks (LANs) and Personal Area Networks (PANs) as well as skills in programming for mobile handsets. You will also develop knowledge of the different types of wireless communications technologies available and when each is most applicable in a particular situation.

**Prerequisites:** INB251 or ITB006  
**Antirequisites:** ITN723  
**Assumed knowledge:** Networks or equivalent networking knowledge is assumed knowledge  
**Equivalents:** ITB723

**INB365 SYSTEMS PROGRAMMING**

Systems programming is an essential part of any computer-science education. This unit uses operating system concepts to teach the foundations of systems programming and advanced concepts for producing softwares that provide services to computer hardware. Through this study, you will be able to demonstrate knowledge of the principles and techniques of process management, memory and file management, protection & security, and distributed systems.

**Prerequisites:** INB270  
**Antirequisites:** INN365, ITB745, ITB706  
**Assumed knowledge:** Fundamentals of computer architecture; high level programming languages (such as C, C++, Java Python) is assumed knowledge.  
**Credit points:** 12  
**Contact hours:** 3 per week  
**Campus:** Gardens Point  
**Teaching period:** 2010 SEM-2

**INB370 SOFTWARE DEVELOPMENT**

Understanding software development is an integral part of the IT industry for software engineers.? Software development relies on object technologies, programming techniques and numerous code libraries provided by language developers and third party vendors.? Integrated Development Environments, unit testing frameworks, automated and continuous build tools and versioning systems are all becoming part of the tool set modern software developers must be familiar with.? This unit is designed to introduce these technologies and techniques to show how software can be rapidly developed.

**Prerequisites:** INB270 or ITB003 or INN270  
**Credit points:** 12  
**Contact hours:** 3 per week  
**Campus:** Gardens Point  
**Teaching period:** 2010 SEM-1

**INB371 DATA STRUCTURES AND ALGORITHMS**

The purpose of this unit is to ensure that you have a sound knowledge of modern programming techniques and their use in providing medium-scale software solutions. This unit will teach you to decompose a problem and produce a modular solution to a programming task. The principles to analyse algorithms for efficiency will also be introduced. In addition, you will acquire the necessary skills for you to use the tools available in common development environments, such as Microsoft Visual Studio.

**Prerequisites:** INB270 or ITB003  
**Antirequisites:** ITB711, ITB702, INN371  
**Credit points:** 12  
**Contact hours:** 3 per week  
**Campus:** Gardens Point  
**Teaching period:** 2010 SEM-1
INB372 AGILE SOFTWARE DEVELOPMENT
This unit introduces you to the software development process. You will look at each of the major activities involved in developing a software system. You will also learn how to manage and control the software development process for a large project when a number of team members are involved in the development. This unit develops the professional practice of working on large software systems.

Prerequisites: INB370  Antirequisites: INN372, ITB612, ITB712  Assumed knowledge: Good programming, debugging, testing and software development skills.
Credit points: 12  Contact hours: 3 per week  Campus: Gardens Point  Teaching period: 2010 SEM-2

INB374 ENTERPRISE SOFTWARE ARCHITECTURE
This unit aims to introduce you to the field of enterprise architecture. It attempts to give you a grounding in the basic knowledge and skills required by an enterprise architect. This includes a solid understanding of the IT challenges currently facing medium to large size organizations, the theory and technologies currently used to address them and an appreciation of the business imperative for which they are utilized.

Prerequisites: INB270 or ITB003  Equivalents: ITB717
Credit points: 12  Contact hours: 3 per week  Campus: Gardens Point  Teaching period: 2010 SEM-2

INB379 GAME PROJECT DESIGN
INB379 BGIE Game Project Design (P1) extends your work on the role, design, and plan of a computer game concept. The unit covers the conceptualisation and game design stages up to the game design pitch. If the project is given a green light by the assessment panel, it may be developed later in the P2 unit.

Antirequisites: ITB009, INB305  Assumed knowledge: Completion of at least 144 credit points of IT04 units, including including all first year core units is assumed
Credit points: 12  Contact hours: 1 hour lecture - 2 hour supervisor meetings  Campus: Gardens Point  Teaching period: 2010 SEM-1 and 2010 SEM-2

INB380 GAMES PROJECT
This unit seeks to give you the opportunity to apply, under appropriate guidance, the knowledge and skills gained in your course to date and to execute a substantial related project. The unit also aims to allow you to develop the critical professional skills of working within a cross-disciplinary team and, through implementation of your project, develop the understanding of the role of careful planning, scope control and task management in ensuring that the project is successful.

Prerequisites: INB379 or INB305  Antirequisites: ITB020
Assumed knowledge: Students undertaking this unit must be enrolled in the Bachelor of Games and Interactive Entertainment  Credit points: 24  Contact hours: 3 per week  Campus: Gardens Point  Teaching period: 2010 SEM-1 and 2010 SEM-2

INB381 MODELLING AND ANIMATION TECHNIQUES
The unit will provide you with the knowledge and skills to use an industry standard graphics API to implement graphics applications and to develop a basic real time animation system using an industry standard language.

Prerequisites: INB371 and MAB281  Equivalents: ITB746  Credit points: 12  Contact hours: 3 per week  Campus: Gardens Point  Teaching period: 2010 SEM-1 and 2010 SEM-2

INB382 REAL TIME RENDERING TECHNIQUES
This unit will provide you with knowledge and skills in basic to advanced techniques in real-time rendering using shading languages. You will be able to implement a high-quality real-time rendering system in an industry standard API.

Prerequisites: INB371, INB381 and MAB281  Antirequisites: ITB648 and ITB649  Equivalents: ITB747
Credit points: 12  Contact hours: 3 per week  Campus: Gardens Point  Teaching period: 2010 SEM-2

INB383 AI FOR GAMES
The aim of this unit is to provide students with an intermediate to advanced level course in computer game AI, involving algorithmic and utility-based approaches to solving a wide range of problems in the interactive entertainment and game industries. You will gain both practical and theoretical knowledge about a range of AI techniques applied in computer games. You will be able to identify and explain different types of AI agents, describe their algorithms using a pseudo code convention, identify and explain different structures and algorithms used to represent and solve a range of problems in computer game AI.

Prerequisites: INB371 or MAB281  Antirequisites: INB304 completed in semester 1 2009  Credit points: 12  Contact hours: 4 per week  Campus: Gardens Point  Teaching period: 2010 SEM-1

INB385 MULTIMEDIA SYSTEMS
This unit will explore the concepts underpinning multimedia systems and the role played by these technologies in the overall knowledge of a computer professional. You will learn to: design and develop different kinds of interactive multimedia applications; understand the bank of knowledge...
in cultural developments surrounding the emergence of multimedia technologies; analyse design and processes that contribute to the production of a creative work, using contemporary hardware and software technologies; develop the creative potential of temporal media forms and their placement and use within new media works; understand principles and conventions associated with the interpretation and production of meaning through interactive visual representation.

Prerequisites: INB103 or ITB002   Antirequisites: ITB257  
Credit points: 12   Contact hours: 3 per week  
Campus: Gardens Point   Teaching period: 2010 SEM-1

INN386 ADVANCED MULTIMEDIA SYSTEMS
This advanced level unit will give you high level design and development skills in some of the current and emerging areas of the new media. Web delivered applications, stand-alone systems and installations will be included. It will endeavour to give you an in-depth understanding of interactive Multimedia Systems. You will be given the theoretical basis and practical skills to motivate you in the design and creation of a state-of-the-art system in this discipline. In the process it will encourage a professional team approach appropriate to the industry environment.

Prerequisites: INB385 (Special considerations may apply)  
Equivalents: ITB259, ITN259  Credit points: 12  
Contact hours: 3 per week  
Campus: Gardens Point   Teaching period: 2010 SEM-2

INN401 HONOURS DISSERTATION 1
Research is about contributing to scientific knowledge. You will be expected to make such a contribution in your honours dissertation, although the size of that contribution will probably be relatively small as this is likely to be your first research project. The principle aim, however, is to provide you with basic research skills that you will be able to apply again in the future in other contexts, be they in a higher research degree, or applied to real-world problems in an industry setting. You will learn the types of processes, creativity and analytical thinking that leads to such scientific advances and how to communicate such findings in a rigorous scientific manner.

Credit points: 12  
Campus: Gardens Point   Teaching period: 2010 SEM-1, 2010 SEM-2 and 2010 SUM

INN403 HONOURS DISSERTATION 3
Research is about contributing to scientific knowledge. You will be expected to make such a contribution in your honours dissertation, although the size of that contribution will probably be relatively small as this is likely to be your first research project. The principle aim, however, is to provide you with basic research skills that you will be able to apply again in the future in other contexts, be they in a higher research degree, or applied to real-world problems in an industry setting. You will learn the types of processes, creativity and analytical thinking that leads to such scientific advances and how to communicate such findings in a rigorous scientific manner.

Credit points: 12  
Campus: Gardens Point   Teaching period: 2010 SEM-1, 2010 SEM-2 and 2010 SUM

INN404 HONOURS DISSERTATION 4
Research is about contributing to scientific knowledge. You will be expected to make such a contribution in your honours dissertation, although the size of that contribution will probably be relatively small as this is likely to be your first research project. The principle aim, however, is to provide you with basic research skills that you will be able to apply again in the future in other contexts, be they in a higher research degree, or applied to real-world problems in an industry setting. You will learn the types of processes, creativity and analytical thinking that leads to such scientific advances and how to communicate such findings in a rigorous scientific manner.

Credit points: 12  
Campus: Gardens Point   Teaching period: 2010 SEM-1, 2010 SEM-2 and 2010 SUM

INN700 INTRODUCTION TO RESEARCH
This unit is aimed at those seeking to undertake a major research project. Except in unusual circumstances, you should have a project in mind and have organised a supervisor.

Assumed knowledge: Must be con-currently enrolled in either full-time or part-time Higher Research Degree (i.e. PhD, ProDoc, Research Masters, or Honours) or, if coursework masters then a 48cp research project. In all instances, must have a formal Principle Supervisor
KIB101 VISUAL COMMUNICATION
Communication Design deals with visual communication and the creation of meaning through images. This unit will introduce you to the principles, production and presentation of visual design and communication.

Equivalents: KIB801  Credit points: 12  Contact hours: 4 per week  Campus: Kelvin Grove  Teaching period: 2010 SEM-1 and 2010 SEM-2

KIB102 VISUAL INTERACTIONS
This unit further develops interface design skills for communications technologies including design priorities, interaction, visual systems, refinement of concepts, project analysis and problem solving through presentation models.

Prerequisites: KIB101 or KIB801 or KPB101 or KPB150 or KPB155  Equivalents: KIB802  Credit points: 12  Contact hours: 3.5 per week  Campus: Kelvin Grove  Teaching period: 2010 SEM-2

KIB105 ANIMATION AND MOTION GRAPHICS
This unit provides an introduction to animation and motion graphics concepts and practices, with an emphasis on principles of design in motion.

Equivalents: KIB804  Credit points: 12  Contact hours: 3 per week  Campus: Kelvin Grove  Teaching period: 2010 SEM-2

KIB108 ANIMATION HISTORY AND PRACTICES
The unit is an introductory examination of the development of animation. It addresses social, cultural, economic and technological themes that have shaped notable practitioners and established animation as a significant medium for the expression of popular culture, artistic experimentation and philosophical, social and political comment.

Equivalents: KIB825  Credit points: 12  Contact hours: 3 per week  Campus: Kelvin Grove  Teaching period: 2010 SEM-1

KIB201 CONCEPT DEVELOPMENT FOR GAME DESIGN AND INTERACTIVE MEDIA
This unit addresses theoretical issues associated with non-linear story structures and interactive narratives through the analysis of game structures, the creation of original game ideas and the application of techniques of information design to the structuring of non-narrative content. Addressing the creative and analytical roles of writers, conceptual designers and information designers in the context of interactive digital media and the Creative Industries.

Equivalents: KIB816  Credit points: 12  Contact hours: 3 per week  Campus: Kelvin Grove  Teaching period: 2010 SEM-1

KIB202 ENABLING IMMERSION
As creative practitioners within a highly networked technological society, it is important to develop a critical understanding of how the application of technology influences modes of communication, production processes and creative practices, particularly within the Creative Industries. This unit provides an introductory overview of the philosophies underlying applications of technology, and critically examines current applications in order to explore creative visions of future technology.

Prerequisites: KIB201  Equivalents: KIB814  Credit points: 12  Contact hours: 3 per week  Campus: Kelvin Grove  Teaching period: 2010 SEM-2

KIB203 INTRODUCTION TO 3D COMPUTER GRAPHICS
The field of 3D computer graphics has grown from being a highly specialist field, supported by large film studios, into a vast and growing industry. Throughout film and television, scientific visualization, industrial and architectural design, physical modelling, animation and gaming; 3D visualisation has become a significant contributor to the construction of virtual worlds and the simulation of physical environments. This unit provides an introduction to the world of 3D graphics, paying particular attention to pre-production techniques, project management, 3D modelling techniques, and designing virtual environments. It establishes a foundation for advanced study in subsequent units on Real-time Computer Graphics and Virtual Environments. Theoretical understandings gained through lectures will be supplemented with technical skills in workshops, and applied to the production of 3D environments in design studios.

Credit points: 12  Contact hours: 3 per week  Campus: Kelvin Grove  Teaching period: 2010 SEM-1

KIB214 DESIGN FOR INTERACTIVE MEDIA
Designing for contemporary media requires a sophisticated understanding of how we effectively interact with new technologies, software applications, displays and environments. This unit focuses on the field of interaction design and user experience design. It develops an understanding of the theories, methods, and processes employed by Interaction Designers through a series of lectures and tutorials. These principles are then applied to authentic design briefs within design studios.

Prerequisites: KIB102 or KIB202 or KIB802 or KIP402  Equivalents: KIB210  Credit points: 12  Contact hours: 3 per week  Campus: Kelvin Grove  Teaching period: 2010 SEM-1
KIB220 ANIMATION PRODUCTION

Animation employs a studio-based production process that introduces you to workflows, practice-based investigations, critical thinking and problem-based learning. Animation: Studio Production will support you to build animation studio production skills by introducing design briefs, networking, teamwork and collaboration. This unit will focus particular attention on image-based solutions for the production of animated work. It will allow you to advance your skills and techniques in matte painting, image-based modeling, terrain and environment modeling, particle systems for environments, and 3D object creation and shading, as you develop an area of specialisation through personal investigation and self-directed inquiry.

Prerequisites: KIB105 and KVB106  
Credit points: 12  
Contact hours: 6 per week  
Campus: Kelvin Grove  
Teaching period: 2010 SEM-1

KIB221 ANIMATION: CG TOOLKIT

CG Toolkit offers an in-depth look at the tools of animated production from within a studio setting. Continuing from Animation Studio 1: Preproduction, this unit looks at the tools and the processes involved in creating high level successful 3D computer animations for game development, film or television production, web or emergent media.

Prerequisites: KIB203 or KIB107 and KIB220  
Equivalents: KIB213  
Credit points: 12  
Contact hours: Up to 6 per week  
Campus: Kelvin Grove  
Teaching period: 2010 SEM-2

KIB225 CHARACTER DEVELOPMENT, CONCEPTUAL DESIGN AND ANIMATION LAYOUT

This unit emphasizes production in practice. By considering type and generic attributes within a technological context, you will be guided through the key concepts involved in the development of working drawings and final artworks.

Prerequisites: KIB203 or KIB107  
Equivalents: KIB106, KIB807  
Credit points: 12  
Contact hours: 3 per week  
Campus: Kelvin Grove  
Teaching period: 2010 SEM-2

KIB230 INTERFACE AND INFORMATION DESIGN

With the advent of new technologies for communication, graphical user interfaces have become fundamental to the design of effective communication, and a key factor in the uptake, ease of use and experience of technology systems. This unit builds upon knowledge and skills acquired in units on visual communication and Web design to establish the knowledge and skills required to design and produce effective visual interfaces for technology applications such as Web, small screens in mobile media, and interactive displays. It will cover theories and principles of visual communication, information architecture and user experience design, which will be applied in the production of interfaces for interactive media and digital projects. The unit will be taught through a combination of lectures, tutorials and practical classes, in which skills and knowledge will be applied.

Prerequisites: KIB101 or KIB801  
Equivalents: KIB211  
Credit points: 12  
Contact hours: 3 per week  
Campus: Kelvin Grove  
Teaching period: 2010 SEM-1

KIB309 EMBODIED INTERACTIONS

Interaction with technology has advanced beyond the desktop paradigm of mouse and keyboard to embodied interfaces that incorporate video tracking, audio input, and gestural interaction techniques. Applications range from wearable technology to tangible media installations. This unit introduces an experimental field of interactive media design through the practical application of the processes and techniques of tangible media applications. Lectures, which provide the theoretical grounding of the study area, methodologies and examples of the application of tangible media are complemented by practical classes which extend the technical skills acquired in Programming for Designers and Artists and support the development of tangible media outcomes within design studios.

Prerequisites: KIB205 or INB385  
Equivalents: KIB311  
Credit points: 12  
Contact hours: 3 per week  
Campus: Kelvin Grove  
Teaching period: 2010 SEM-1

KIB314 TANGIBLE MEDIA

This unit extends the understandings of tangible media interfaces and applications gained in the embodied media unit. In this unit students will develop a tangible media project from concept through to design, production, evaluation, and exhibition. Theoretical understandings on tangible media object design, interaction and installation gained through lectures will be supplemented with production skills in workshops, and applied to the development of tangible media works in design studios. Finished works will be displayed in a final exhibition where members of the public will interact with them.

Prerequisites: KIB309  
Equivalents: KIB311  
Credit points: 12  
Contact hours: 3 per week  
Campus: Kelvin Grove  
Teaching period: 2010 SEM-2

KIB316 VIRTUAL ENVIRONMENTS

The field of 3D virtual environments, simulation, and visualization are used to produce sophisticated approaches to interaction design, social networking and game-play. This unit is designed to cater for both creative and technical practitioners. Extending the knowledge and skills developed in 3D Computer Graphics and Real-time environments, this unit develops an advanced understanding of virtual environments and 3D spaces. You will apply and extend principals of real-time modeling, texture acquisition for real-time environments, and interaction design in the 3D context.
Students enrolled in this unit will work in project teams to produce a significant 3D interactive environment within the context of a design studio.

**Prerequisites:** KIB325  
**Equivalents:** KIB310, KIB821  
**Credit points:** 12  
**Contact hours:** 3 per week  
**Campus:** Kelvin Grove  
**Teaching period:** 2010 SEM-2

**KIB320 ADVANCED CONCEPTS IN COMPUTER ANIMATION 1**

This unit allows you to consolidate your understanding of animation studio processes from previous units, and supports you to develop advanced skills and concepts in computer animation, character development, and cinematic narrative and storytelling. You will have the opportunity to pitch, critique and produce assets for an animated work for a show-reel and to engage in self-directed, independent study in a studio context. You will also develop skills in production management and direction for the production of a major work in Animation.

**Prerequisites:** KIB221 or KIB213  
**Equivalents:** KIB312  
**Credit points:** 12  
**Contact hours:** 3 per week  
**Campus:** Kelvin Grove  
**Teaching period:** 2010 SEM-1

**KIB321 ADVANCED CONCEPTS IN COMPUTER ANIMATION 2**

Animation Studio 4 consolidates the work completed in the previous animation studios. Concentrating on output, portfolio preparation, post production and transitioning between university and industry or into higher degrees, the studio offers the opportunity to produce and direct a final portfolio piece or to begin academic research in the field of computer animation.

**Prerequisites:** KIB320  
**Equivalents:** KIB313  
**Credit points:** 12  
**Contact hours:** 3 per week  
**Campus:** Kelvin Grove  
**Teaching period:** 2010 SEM-2

**KIB325 REAL-TIME 3D COMPUTER GRAPHICS**

This unit provides the opportunity for extending the principles of 3D computer graphics into the emerging field of virtual environments that respond to interaction in real time. In this unit you will cover the principals of real-time modeling; texture acquisition for real-time environments and interaction design in the 3D context. This unit provides an opportunity where students studying 3D computer graphics can apply animation and interactive design principles to real-time spaces. These principles can be applied to the fields of game design and interactive 3D environments.

**Prerequisites:** KIB225  
**Equivalents:** KIB310, KIB821  
**Credit points:** 12  
**Contact hours:** 3 per week  
**Campus:** Kelvin Grove  
**Teaching period:** 2010 SEM-1

**KMB106 MUSIC AND SOUND FOR MULTIMEDIA**

This unit deals with studio recording techniques, computer-assisted composition, the role of music in non-linear structures, the effect of sound in digital media productions, sound effects and foley techniques, musical acoustics, and digital sound theory.

**Assumed knowledge:** Sound recording and operation of audio editing software is assumed knowledge.  
**Credit points:** 12  
**Contact hours:** 2.5 per week  
**Campus:** Kelvin Grove  
**Teaching period:** 2010 SEM-2

**KMB107 SOUND, IMAGE, TEXT**

This unit focuses on the rich and varied relationship between sound and image in a number of media and artforms, including film, music video, theatre, installation, mixed media performance and many more.

**Equivalents:** KMB638  
**Credit points:** 12  
**Contact hours:** 2.5 per week  
**Campus:** Kelvin Grove and Caboolture  
**Teaching period:** 2010 SEM-2

**KMB119 MUSIC AND SOUND PRODUCTION 1**

This unit introduces students to the fundamentals principles of music and sound production through a mix of theory and practice. Students gain an understanding of sound recording, sound production and live sound reinforcement and develop listening skills essential for music and sound production.

**Equivalents:** KMB108, KMB621  
**Credit points:** 12  
**Campus:** Kelvin Grove  
**Teaching period:** 2010 SEM-1

**KMB129 MUSIC AND SOUND PRODUCTION 2**

This unit builds on Music and Sound Production 1. It introduces students to sound synthesis and signal processing and extends the students understanding of the approaches and aesthetics underpinning creative music and sound production. Students will further develop practical skills in music and sound composition and deepen their knowledge of the hardware and software commonly used in creative production.

**Equivalents:** KMB105, KMB619  
**Credit points:** 12  
**Campus:** Kelvin Grove  
**Teaching period:** 2010 SEM-2

**KVB105 DRAWING FOR DESIGN**

This is a studio based unit that introduces you to media, processes, strategies and traditions of drawing and associated imagery for use in animated media. The development of critical/reflective frameworks of traditional and contemporary practice underpins studio development.

**Equivalents:** KVB755  
**Credit points:** 12  
**Contact hours:** 4 per week  
**Campus:** Kelvin Grove  
**Teaching period:** 2010 SEM-1

**KVB106 DRAWWING FOR ANIMATION**
This unit develops individual knowledge, concepts and skills to enable you to articulate and present capabilities of motion through drawing for contemporary animation practices.

**Equivalents:** KVB756  **Credit points:** 12  **Contact hours:** 3 per week  **Campus:** Kelvin Grove  **Teaching period:** 2010 SEM-2

**LWB136 CONTRACTS A**

This unit includes the following: formation of contracts; equitable estoppel; privity of contract; formalities; express and implied terms; an examination of promises which are legally binding; how contractual promises may be characterised and the significance of that characterisation.

**Credit points:** 12  **Contact hours:** 3 per week  **Campus:** Gardens Point and External  **Teaching period:** 2010 SEM-1 and 2010 SEM-2

**LWB137 CONTRACTS B**

Legally binding promises pervade society, from uncomplicated bargains like riding on a bus to complex multi-million dollar transactions. The law of contract provides an understanding of promises which are legally binding, how contractual promises may be characterised and the significance of that characterisation, and how contractual promises may be discharged or invalidated. This is the second of two associated units which examine the law of contract, the focus of this unit being on the discharge of contracts, remedies for breach and the invalidation of contracts. The two units together provide the foundation for several units encountered later in the course.

**Prerequisites:** LWB136  **Credit points:** 12  **Contact hours:** 3 hours per week  **Campus:** Gardens Point and External  **Teaching period:** 2010 SEM-1 and 2010 SEM-2

**LWB141 LEGAL INSTITUTIONS AND METHOD**

This unit introduces students to the building blocks of law: fundamental principles; legal terminology; legal institutions; legal methodology; sources of the law; ways to interpret the law including an introduction to policy and international considerations. The material is presented as an integrated whole so that students obtain a broad perspective and an ability to 'navigate the law' without artificially dividing any particular aspect. The unit also emphasises the joint responsibility of the teacher and the student for learning and to foster the development of skills in communication, comprehension and analysis.

**Credit points:** 12  **Contact hours:** 3 per week  **Campus:** Gardens Point  **Teaching period:** 2008 SEM-1 and 2008 SEM-2  **Incompatible with:** LWB101, LWB135

**LWB142 LAW, SOCIETY AND JUSTICE**

This unit examines the basic tenets of our democratic liberal legal system, particularly the central concept, the rule of law. The unit begins with an historical development of rights and the rule of law. It looks at how law and values intertwine and how society at a particular time shapes notions of legal personality, the recognition of 'family' and human rights in law. It finally addresses the limitations of democratic liberalism and the rule of law by examining the reality of equality before the law in relation to such topics as gender and cultural neutrality, equal access to justice, and lawyers and the adversarial system.

**Credit points:** 12  **Contact hours:** 3 per week  **Campus:** Gardens Point and External  **Teaching period:** 2010 SEM-1

**LWB480 MEDIA LAW**

This unit examines the regulation and non-regulation of freedom of speech exercised by the media. In this regard various limitations imposed by the common law, statute and self-regulation will be examined, such as defamation, restrictions on reporting courts and politics, contempt, privacy and confidentiality.

**Prerequisites:** LWB147  **Credit points:** 12  **Contact hours:** 3 per week  **Campus:** Gardens Point and External  **Teaching period:** 2010 SEM-2

**LWB482 INTERNET LAW**

This unit addresses the idea that it is vital for any participant in the digital age to gain a thorough knowledge of the structure, governance and regulation of the Internet, digital intellectual property, and risk management strategies for stakeholders.

**Credit points:** 12  **Contact hours:** 2 per week  **Campus:** Gardens Point and External  **Teaching period:** 2010 SEM-1

**LWB486 INTELLECTUAL PROPERTY LAW**

There have been significant developments in the field of intellectual property law in recent years and the area is undoubtedly one perceived by the practising profession as growing in importance. This unit will provide a foundation to those areas of intellectual property law that legal practitioners may encounter in their everyday practice. In so doing, it will provide an examination of each of the intellectual property regimes. The course will also consider some of the broader more general policy matters as they relate to the field of intellectual property law.

**Prerequisites:** LWB244  **Credit points:** 12  **Contact hours:** 3 per week  **Campus:** Gardens Point and External  **Teaching period:** 2010 SEM-2

**MAB120 ALGEBRA AND CALCULUS**

This unit introduces and reviews the elementary concepts of function, calculus, matrices and vectors with special reference to applications in science, technology and business where appropriate. Topics covered include the algebra of complex numbers, elementary functions (polynomial, trigonometric, exponential and logarithmic) and their properties, differentiation and integration methods and
principles, geometric and algebraic applications of vectors and the solution of linear systems using matrices. **Assumed knowledge:** Grade of at least Sound Achievement in Senior Mathematics B (or equivalent) or MAB105 is assumed knowledge. **Equivalents:** MAB100, MAB125, MAB180. **Credit points:** 12 **Contact hours:** 4 per week. **Campus:** Gardens Point. **Teaching period:** 2010 SEM-1, 2010 SEM-2 and 2010 SUM

**MAB121 CALCULUS AND DIFFERENTIAL EQUATIONS**
This unit extends the areas of function and calculus introduced in MAB120 by introducing series representations for functions and more advanced methods of differentiation and integration for functions of one variable. A strong connection to real world problems is made by introducing the use of differential equations in modelling, and exploring appropriate methods of solution. Practical calculations of volumes and surface areas of solids of revolution extend your interpretations of the definite integral. Taylor and Fourier series are introduced as a means of approximating functions by sums of polynomials and periodic functions. Some more advanced methods for indefinite integrals, such as partial fraction decomposition, are also introduced. **Assumed knowledge:** Grade of at least Sound Achievement in Senior Mathematics C (or equivalent) or MAB125 or MAB180 or MAB120 is assumed knowledge. **Equivalents:** MAB111, MAB126. **Credit points:** 12 **Contact hours:** 4 per week. **Campus:** Gardens Point. **Teaching period:** 2010 SEM-1, 2010 SEM-2 and 2010 SUM

**MAB122 ALGEBRA AND ANALYTIC GEOMETRY**
This unit extends your knowledge in the areas of functions, calculus, matrices and vectors introduced in MAB120 by introducing functions of more than one variable, partial derivatives and multiple integrals, vector valued functions, and matrix methods for the solution of large systems of linear equations. **Equivalents:** MAB112, MAB127, MAB132. **Credit points:** 12 **Contact hours:** 4 per week. **Campus:** Gardens Point. **Teaching period:** 2010 SEM-1, 2010 SEM-2 and 2010 SUM

**MAB281 MATHEMATICS FOR COMPUTER GRAPHICS**
This unit introduces students to the mathematics involved in computer graphics, computer games and virtual reality. It is heavily reliant on analytic, Euclidean and projective geometries in 2D and 3D, elementary trigonometry, elementary linear algebra and elementary calculus. The unit will develop the mathematical concepts and where practicable show how these concepts are then applied in the field of computer graphics. Students must have completed four semesters of Senior Mathematics B with an exit level of Sound Achievement, or have passed MAB105 (or equivalent). **Assumed knowledge:** Grade of at least Sound Achievement in Senior Mathematics B (or equivalent) or MAB105 is assumed knowledge. **Credit points:** 12 **Contact hours:** 4 per week. **Campus:** Gardens Point. **Teaching period:** 2010 SEM-1 and 2010 SEM-2

**MAB312 LINEAR ALGEBRA**
This unit covers the following broad topics from linear algebra: matrix analysis; eigenvalues and eigenvectors; vector spaces; inner product spaces. **Prerequisites:** (MAB111 or MAB121) and (MAB112 or MAB122). **Credit points:** 12 **Contact hours:** 4 per week. **Campus:** Gardens Point. **Teaching period:** 2010 SEM-1

**MGB200 LEADING ORGANISATIONS**
This unit introduces you to a range of perspectives in understanding human behaviour and its context within organisation structures. The unit also enables you to interpret, analyse, evaluate and explain conditions and consequences of work in organisations with a view to understanding and appreciating complex management issues in day to day experiences in business. **Prerequisites:** BSB115 or CTB115. **Antirequisites:** MGB211, CTB211, MGB222, CTB232. **Credit points:** 12 **Contact hours:** 3. **Campus:** Gardens Point. **Teaching period:** 2010 SEM-1, 2010 SEM-2 and 2010 SUM

**MGB223 ENTREPRENEURSHIP AND INNOVATION**
This unit introduces students to the nature and characteristics of entrepreneurship and innovation and explores the inter-relationship between the two within contemporary economies from managerial perspective. Learning will be directed towards developing the theoretical and applied knowledge, skills, and attitudes that will support and enhance innovation and enterprise creation activity, through the development of a business plan. The unit is designed for those individuals interested in creating a new venture or working in industries as employees of venture owners or those that serve this sector. Students will have opportunity to build a comprehensive plan of their business concept. **Prerequisites:** BSB115 or CTB115. **Equivalents:** CTB223. **Credit points:** 12 **Contact hours:** 3 per week. **Campus:** Gardens Point and Caboolture. **Teaching period:** 2010 SEM-1 and 2010 SEM-2

**MGB324 MANAGING BUSINESS GROWTH**
This unit is designed to provide skills in the analysis, solutions and implementation of the general management issues that SME owners have to manage in their growing operations. The unit brings together the different functional aspects of managing an established SME and how they are best managed from the owner's (general manager's) point of view. It also provides opportunity to bring students into contact with real world SME owners and their venture
management issues.

**PQB250 MECHANICS AND ELECTROMAGNETISM**

The experimental means by which we have arrived at our modern understanding of the universe is central to the scientific philosophy. Students of physics and physics related areas need to possess skills in quantitative handling, processing, communication and evaluation of data. Higher level studies in specialised areas of Physics require a familiarity with a range of fundamental topics in Physics and an ability to apply critical thinking and advanced mathematical techniques to the analysis and solution of physical problems. This first-level unit lays the foundation for these higher level studies by introducing the fundamental topic areas of mechanics and electromagnetism.

**Assumed knowledge:** Senior Maths B is assumed knowledge.  
**Credit points:** 12  
**Contact hours:** 4.5 hours per week  
**Campus:** Gardens Point  
**Teaching period:** 2010 SEM-1

**PQB593 DIGITAL IMAGE PROCESSING**

This unit provides students with a basic understanding of the computer techniques used in image processing and reconstruction. Specific areas of study include the following: the structure of a digital image; image display techniques; grey scale palettes and look-up tables; Fourier transform theory; convolution theory; image processing hardware; image processing techniques, eg analysis, enhancement and restoration; spatial filtering; Fourier space filtering; methods of image reconstruction; 3D volume and surface rendering; applications of image processing in medicine, astronomy and remote sensing, etc.

**Prerequisites:** PCB375-2 or PCB496 or PQB250  
**Credit points:** 12  
**Contact hours:** 4 per week  
**Campus:** Gardens Point  
**Teaching period:** 2010 SEM-1

**PQB251 WAVES AND OPTICS**

Wave phenomena are used to describe and explain many of the physical processes in the universe. Sound and light are the most commonly experienced of these and have far-reaching human applications, including their use as experimental tools for science. The study of wave phenomena has led to the development of quantum mechanics, a cornerstone of modern scientific thought. This first-level unit lays the foundation for discussion of wave phenomena in higher level studies, but will also be relevant to those not considering progressing to a Physics major but wishing to understand more of the Physical world in which we live.

**Assumed knowledge:** Senior Maths B is assumed knowledge.  
**Credit points:** 12  
**Contact hours:** 4.5 hours per week  
**Campus:** Gardens Point  
**Teaching period:** 2010 SEM-2

**PQB450 ENERGY, FIELDS AND RADIATION**

The common theme of the topics covered in this unit is fields, the energy contained in these fields and the transfer of this energy. This theme is addressed in the specific topics of classical mechanics, electromagnetism and radiation physics. The classical mechanics and electromagnetism components build on material presented in introductory units and apply this to complex real world problems. The unit is designed to prepare students for more advanced studies in these areas but the unit will also provide a useful background for students undertaking a co-major in Physics or preparing for a career in secondary education.

**Prerequisites:** PQB250 or PCB250, and MAB311  
**Equivalents:** PCB362  
**Credit points:** 12  
**Contact hours:** 4 per week  
**Campus:** Gardens Point  
**Teaching period:** 2010 SEM-2

**PQB460 ASTROPHYSICS 1**

This second level unit is one of the key units in the astrophysics co-major and introduces students to most of the main aspects of astrophysics. This unit is essential as it defines the connections between the supporting units of the co-major. Students are required to use the knowledge and skills developed in first level physics, maths and natural resource units.

**Prerequisites:** PCB136 or PQB250 or SCB123  
**Equivalents:** PCB469  
**Credit points:** 12  
**Contact hours:** 4 per week  
**Campus:** Gardens Point  
**Teaching period:** 2010 SEM-2