Bachelor of Applied Science/Bachelor of Information Technology (IX26)

Year offered: 2011
Admissions: No
CRICOS code: 020327M
Course duration (full-time): 4 years
Domestic Fees (indicative): 2011: CSP $3,878 per semester (indicative)
International Fees (indicative): 2011: $11,750 (indicative) per semester
QTAC code: 419302
Past rank cut-off: 74
Past OP cut-off: 13
OP Guarantee: Yes
Assumed knowledge: English (4, SA) and Maths B (4, SA)
Preparatory studies: For information on acquiring assumed knowledge visit http://www.qut.edu.au/assumed-knowledge
Course coordinator: Dr Perry Hartfield (Science), Mr Richard Thomas (Information Systems)
Discipline coordinator: Dr Perry Hartfield (Biochemistry Major); Dr Marion Bateson (Biotechnology Major); Dr Robert Johnson (Chemistry Major); Dr lan Williamson (Ecology Major); Dr Robin Thwaites (Environmental Science Major); Dr Emad Kiriakous (Forensic Science Major); Dr Gary Huftile (Geoscience Major); Dr Christine Knox (Microbiology Major); Dr Greg Michael (Physics Major)
Campus: Gardens Point

Course discontinued
This course has been discontinued. Currently enrolled students should check with the Course Coordinator for enrolment and unit information.

Limits on grades of 3
A new policy concerning grades of 3 came into effect from 1 January 2009 (QUT MOPP C/5.2). With effect from this date grades of 3 are no longer considered a conceded or low pass but are classified as a fail grade. Any grades of 3 awarded prior to 1 January 2009 retain the conceded pass status and will be counted for graduation purposes up to the maximum number of grades of 3 permitted for your course. Grades of 3 incurred in units that commence after 1 January 2009 will not count towards your degree. Further information is available on the Student Services website

Information Systems Major

Compulsory Units
INB311 Enterprise Systems
INB340 Database Design

IS Elective Units
INB312 Enterprise Systems Applications
INB342 Enterprise Data Mining and Data Analysis
INB313 Electronic Data Mining and Data Analysis
INB322 Information Systems Consulting
INB320 Business Process Modelling
INB124 Information Systems Development
INB221 Technology Management

Network Systems Major

Compulsory Units
INB350 Internet Protocols and Services
INB351 Unix Network Administration
INB352 Network Planning
INB255 Security

Electives
INB312 Enterprise Systems Applications
INB365 Systems Programming
INB353 Wireless and Mobile Networks
INB355 Cryptology and Protocols

Software Architecture Major

Compulsory Units
INB340 Database Design
INB371 Data Structures and Algorithms
INB372 Agile Software Development

Electives
Choose 3 Electives
INB341 Software Development With Oracle
INB311 Enterprise Systems
INB312 Enterprise Systems Applications
INB272 Interaction Design
INB313 Electronic Commerce Site Development
INB322 Information Systems Consulting
INB320 Business Process Modelling
<table>
<thead>
<tr>
<th>Year 1, Semester 1</th>
<th>Year 1, Semester 2</th>
<th>Year 2, Semester 1</th>
<th>Year 2, Semester 2</th>
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<tbody>
<tr>
<td>INB103 Industry Insights</td>
<td>INB210 Databases</td>
<td>INB104 Building IT Systems</td>
<td>INB270 Programming</td>
</tr>
<tr>
<td>INB250 Systems Architecture</td>
<td>INB251 Networks</td>
<td>Choose one unit from: Intermediate Level Elective list. This choice will replace ITB008 from 2009 course summary.</td>
<td>INB271 The Web</td>
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<tr>
<td>Science Core Unit</td>
<td>Science Major Unit</td>
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**Course Structure 2009**

From semester one, 2009 this course will not be available for commencing students. IX26 will only be available for continuing students. New students - please refer to IX55. Please contact enquiry.scitech@qut.edu.au for any enquiries.

**Year 3, Semester 1**

<table>
<thead>
<tr>
<th>INB301 The Business of IT</th>
<th>IT Major Unit</th>
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<tr>
<td>IT Major Unit</td>
<td>Science Major Unit</td>
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**Year 3, Semester 2**

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<tr>
<th>INB302 Capstone Project</th>
<th>IT Major Unit</th>
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<td>IT Major Unit</td>
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**IX26 - Bachelor of Applied Science/Bachelor of Information Technology Course Structure 2009**

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<thead>
<tr>
<th>Year 1, Semester 1</th>
<th>Year 1, Semester 2</th>
<th>Year 2, Semester 1</th>
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<tbody>
<tr>
<td>ITB002 IT Professional Studies</td>
<td>ITB005 Systems Architecture</td>
<td>ITB004 Database Systems</td>
<td>ITB001 Problem Solving and Programming</td>
</tr>
<tr>
<td>ITB005 Systems Architecture</td>
<td>Science Core Unit</td>
<td>Science Core Unit</td>
<td>ITB006 Networks</td>
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<td>Science Core Unit</td>
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IX26 - Bachelor of Applied Science/Bachelor of Information Technology Course Structure 2008

**Year 4, Semester 1**

<table>
<thead>
<tr>
<th>INB302 Capstone Project</th>
<th>IT Major Unit</th>
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<td>IT Major Unit</td>
<td>Science Major Unit</td>
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<td>Science Major Unit</td>
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**Year 4, Semester 2**

<table>
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<tr>
<th>IT Major Unit</th>
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<td>Science Major Unit</td>
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IX26 - Bachelor of Applied Science/Bachelor of Information Technology Course Structure 2008

**Year 1, Semester 1**

<table>
<thead>
<tr>
<th>ITB002 IT Professional Studies</th>
<th>ITB005 Systems Architecture</th>
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<tr>
<td>IT Major Unit</td>
<td>Science Core Unit</td>
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<td>Science Core Unit</td>
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**Year 1, Semester 2**

<table>
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<tr>
<th>ITB004 Database Systems</th>
<th>ITB006 Networks</th>
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<tr>
<td>Science Core Unit</td>
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**Year 2, Semester 1**

<table>
<thead>
<tr>
<th>ITB001 Problem Solving and Programming</th>
<th>ITB008 Modelling Analysis and Design</th>
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<tbody>
<tr>
<td>IT Major Unit</td>
<td>Science Major Unit</td>
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<td>Science Major Unit</td>
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</tbody>
</table>
Science Core Unit
Science Major Unit

**Year 2, Semester 2**

**ITB003** Object Oriented Programming
**ITB007** Web Development

**Science Core Unit**
**Science Major Unit**

**Year 3, Semester 1**

**IT Major Unit**
**IT Major Unit**
**Science Major Unit**
**Science Major Unit**

**Year 3, Semester 2**

**ITB009** Core Project Management
**IT Major Unit**
**Science Major Unit**
**Science Major Unit**

**Year 4, Semester 1**

**ITB010** Core Project Implementation
**IT Major Unit**
**Science Major Unit**
**Science Major Unit**

**Year 4, Semester 2**

**IT Major Unit**
**IT Major Unit**
**Science Major Unit**
**Science Major Unit**

**Potential Careers:**

**UNIT SYNOPSES**

**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.

Prerequisite(s): Nil  Corequisite(s): Nil  Credit points: 12  Contact hours: 3 per week  Campus: Gardens Point  Teaching period: 2009 SEM-1 and 2009 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.

Prerequisite(s): Nil  Corequisite(s): Nil  Credit points: 12  Contact hours: 3 per week  Campus: Gardens Point  Teaching period: 2009 SEM-1 and 2009 SEM-2

**INB124 INFORMATION SYSTEMS DEVELOPMENT**
IT professionals work with a wide variety of information systems and are increasingly required to interact with other professionals and understand business domains. In many cases it is necessary to develop custom systems to satisfy business requirements. Problem solving and communication skills and an understanding of programming concepts and logic are required to effectively work with information systems developers. In this dynamic industry, self-managed learning is necessary to remain abreast of technology innovations.

Credit points: 12  Contact hours: 3 per week  Campus: Gardens Point  Teaching period: 2011 SEM-2

**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.
INB251 NETWORKS

Computer systems and communications networks are essential to the activities of modern organisations. When you graduate from a course in Information Technology, employers expect you to have a sound understanding of the terminology and concepts of computer systems, communications networks, and network services. This unit provides you with an introductory study of communications network technologies and network applications. The unit serves as an entry point to further specialised studies in the field of computer network systems.

Prerequisite(s): Nil  Corequisite(s): Nil  Credit points: 12  Contact hours: 3 per week  Campus: Gardens Point  Teaching period: 2009 SEM-2  Incompatible with: ITB005

INB255 SECURITY

This unit aims to give you an understanding of the major issues in information security. You will be able to identify critical information security concepts and determine the information security implications of interactions between entities. You will have knowledge of a range of techniques for protecting information, and understand the limitations of these techniques. You will be aware of international information security management standards.

Antirequisites: ITB161, ITB523, ITB623, ITN161 and INN255  Equivalents: ITB730  Credit points: 12  Contact hours: 3 per week  Campus: Gardens Point  Teaching period: 2011 SEM-1

INB270 PROGRAMMING

This unit aims to give you a positive introduction to the skills required in solving computational problems and implementing solutions in a programming or scripting language. Although some theoretical aspects of computer programming are introduced briefly, the overall emphasis of the unit is programming practice. The unit emphasises generic programming concepts and related problem-solving strategies. The skills you learn in this unit will be applicable to a wide variety of commonly-used, industrially-significant programming and scripting languages.

Prerequisite(s): INB104  Corequisite(s): Nil  Credit points: 12  Contact hours: 3 per week  Campus: Gardens Point  Teaching period: 2009 SEM-1 and 2009 SEM-2  Incompatible with: ITB003, ITB112, ITB411 or equivalent

INB271 THE WEB

Teaching period: 2009 SEM-2  Incompatible with: ITB005

INB220 BUSINESS ANALYSIS

This unit is aims to give you an introduction to the role, knowledge, and skills required of a business analyst. This unit focuses on both the trades—tools and methods used by a business analyst, as well as the soft skills—creativity and communication, both of which are critical to successful business and requirements analysis. Through lectures, cases studies and role playing activities, you will develop basic knowledge and skills required for introductory business analysis (BA).

Antirequisites: INN220  Credit points: 12  Contact hours: 3 per week  Campus: Gardens Point  Teaching period: 2011 SEM-1

INB221 TECHNOLOGY MANAGEMENT

This unit presents operational, tactical and strategic insights that support the activities central to the leadership and management of technology. These insights include project management, organisational leadership, outsourcing, planning, governance and millennium technologies. Such insights are used to inform decision-making - the core skill of any manager. Technology managers must understand the factors influencing any decision point. This unit equips students for the challenges of management and to contribute to the decision-making faced by managers and the staff who advise on these issues.

Prerequisites: INB103 or ITB002 or INB120 or ITB360  Antirequisites: ITN241, ITN251 and ITN366  Equivalents: ITB366, ITB241  Credit points: 12  Contact hours: 3 per week  Campus: Gardens Point  Teaching period: 2011 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.

Prerequisite(s): Nil  Corequisite(s): Nil  Credit points: 12  Contact hours: 3 per week  Campus: Gardens Point
The aims of the unit are to give you a thorough understanding of what the web is, how it works and what it has to offer. Additionally, the unit aims to give you a general understanding and basic skills in developing dynamic web applications, including an appreciation of the variety of implementation technologies available. Through an understanding of how web technologies have evolved to date, you will appreciate the necessity for lifelong learning and become an insightful predictor of future developments in this area. You will learn to critically analyse technological alternatives in order to adapt to and innovate with technologies that presently do not exist. You will appreciate the business or organizational context within which web applications exist and be skilled in communicating within that environment. You will appreciate the social and ethical issues relating to web based systems including accessibility, globalization, privacy, and piracy.

**Prerequisite(s):** INB104 or equivalent  
**Corequisite(s):** Nil  
**Credit points:** 12  
**Contact hours:** 3 per week  
**Campus:** Gardens Point  
**Teaching period:** 2009 SEM-1 and 2009 SEM-2  
**Incompatible with:** ITB227 & ITB007

### INB272 INTERACTION DESIGN

The aim of this unit is to provide you with an understanding of the theory, practices and challenges associated with the development of creative interactive design and human computer interaction.

**Prerequisites:** INB103 or INB181  
**Equivalents:** ITB254  
**Credit points:** 12  
**Contact hours:** 3 per week  
**Campus:** Gardens Point  
**Teaching period:** 2011 SEM-2

### INB301 THE BUSINESS OF IT

This unit will prepare you for professional practice by giving you practical knowledge and skills about how to prepare a project plan and monitor its implementation. You will learn about the process of identifying a business opportunity and how to take advantage of that opportunity. You will learn about how to create successful entrepreneurial teams. You will gain an insight into the different challenges and approaches to funding a venture. You will learn how to break a project up into manageable tasks and estimate the duration of tasks to start planning a project schedule. You will be introduced to core strategic models, discuss typical strategy tools and then apply them to the 'Business of IT'. You will be introduced to techniques for conceptualising strategy, such as Strategy Maps / Balanced Scorecard. Different governance models would be introduced, with a focus on IT governance.

**Prerequisite(s):** Completion of at least 120 credit points of IT units  
**Corequisite(s):** Nil  
**Credit points:** 12  
**Contact hours:** 3 per week  
**Campus:** Gardens Point  
**Teaching period:** 2009 SEM-1 and 2009 SEM-2  
**Incompatible with:** ITB009

### INB302 CAPSTONE PROJECT

Students are to work together in a team of 4-5 on a project that addresses one of the following three types of problems: real business problems, real market needs, real research problems. This unit extends students' development of the professional, technical and teamwork skills required by IT professionals in practice. Students will extend their knowledge and skills in the areas of IT project management through completing professional project documentation and managing the team project. Students will also gain a greater understanding and skill level in analysis and design, and their significance in delivering successful business or research outcome. The unit also focuses on furthering students' professional skills in report writing, oral communication, and visual communication.

**Prerequisite(s):** ITB009 or INB301  
**Corequisite(s):** Nil  
**Credit points:** 12  
**Contact hours:** 3 per week  
**Campus:** Gardens Point  
**Incompatible with:** ITB010

### INB311 ENTERPRISE SYSTEMS

The unit presents and discusses the Enterprise Systems Lifecycle model, orienting students to the requirements of addressing total cost of ownership, change management requirements and process modelling requirements in order to achieve business benefits. Concepts of Enterprise Systems success and associated enablers and barriers are also introduced. This unit introduces the technical architecture of complex 3-tiered client server environments. It seeks to show how an integrated complex database environment meets common business needs, and yet fails to meet the total Information Systems requirements.

**Antirequisites:** INN311  
**Credit points:** 12  
**Contact hours:** 3 per week  
**Campus:** Gardens Point  
**Teaching period:** 2011 SEM-2

### INB312 ENTERPRISE SYSTEMS APPLICATIONS

The aim of this unit is to introduce one of the more complex and comprehensive Enterprise Systems applications. This unit introduces the business perspective and application processes of modules (such as FI, CO, PP, MM and SD) and investigates the support provided by these systems and the integration between modules by following some of the major processes in a business. The unit enables you to experience both the business analyst view and the user's view of the system across a number of business processes.

**Antirequisites:** ITB233, INN312  
**Credit points:** 12  
**Contact hours:** 3 per week  
**Campus:** Gardens Point  
**Teaching period:** 2011 SEM-1

### INB313 ELECTRONIC COMMERCE SITE DEVELOPMENT
This unit will enable you to specify, design, implement and maintain effective e-commerce applications. You will obtain a broad understanding of the potential of e-commerce and how it can be employed to benefit an organisation. You will get direct experience of creating an e-commerce storefront following a business to business (B to B) or business to consumer (B to C) model. You will also have an understanding of the computer systems that underpin e-commerce including payment systems and secure transactions.

**Prerequisites:** INB210 or ITB004   **Antirequisites:** ITB229
  **Credit points:** 12   **Contact hours:** 3 per week   **Campus:** Gardens Point   **Teaching period:** 2011 SEM-1

**INB341 SOFTWARE DEVELOPMENT WITH ORACLE**
This unit aims to develop a sound understanding of database creation, installation, administration, management, security, back up/recovery and application development. The unit aims to develop practical skills in each of these elements, using appropriate Oracle software.

It is expected that students undertaking this unit will have prior knowledge of relational database terminology and concepts, be thoroughly able to develop SQL for querying, updating and creating tables, and have a sound knowledge of database design.

**Prerequisites:** INB210 or ITB004 or INB122   **Equivalents:** ITB223   **Credit points:** 12   **Contact hours:** 3 per week   **Campus:** Gardens Point   **Teaching period:** 2011 SEM-2

**INB342 ENTERPRISE DATA MINING AND DATA ANALYSIS**
This unit will provide a comprehensive theoretical coverage of various topics in data and web mining. In addition there will be a significant practical component using hands on tools to solve real-world problems. Specifically, we will consider techniques from machine learning, data mining, text mining, and information retrieval to extract useful knowledge from data which are used for business intelligence, document databases, site management, personalization, and user profiling. This unit will first cover a detailed overview of the mining process and techniques, and then concentrate on applications of these techniques to web, e-commerce, document databases and data from advanced applications.

**Prerequisites:** INB122 or INB210 or INB340 or AYB114   **Antirequisites:** INN342   **Equivalents:** ITB239   **Credit points:** 12   **Contact hours:** 3 per week   **Campus:** Gardens Point   **Teaching period:** 2011 SEM-2

**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.
INB351 UNIX NETWORK ADMINISTRATION
The aim of this unit is to provide students with a working knowledge of the technical aspects and theory of network administration and management. The unit uses the Unix environment as the learning platform for attaining technical skills and for the development of problem solving skills necessary to be a successful networking professional.
Prerequisites: INB270 or ITB003  Antirequisites:
Credit points: 12  Contact hours: 3 per week  Campus: Gardens Point  Teaching period: 2011 SEM-2

INB352 NETWORK PLANNING
The unit draws together subject matter from a number of different networking-related areas. The aim of the unit is to assemble the previously acquired knowledge and techniques and apply it in a cohesive fashion to the task of network planning.
Prerequisites: INB350  Equivalents: ITB721, ITB625, ITB535, ITB525  Credit points: 12  Contact hours: 3 per week  Campus: Gardens Point  Teaching period: 2011 SEM-2

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  Credit points: 12  Contact hours: 3 per week  Campus: Gardens Point  Teaching period: 2011 SEM-1

INB355 CRYPTOLOGY AND PROTOCOLS
Cryptographic techniques are widely used to implement computer and network security. As an IT security professional you may be required either to evaluate or implement information systems using cryptographic algorithms and protocols. This elective unit covers the main cryptographic technical concepts including encryption, digital signatures and cryptographic protocols.
Prerequisites: INB270 or ITB003  Antirequisites: ITB646, ITB548, ITB566  Assumed knowledge: Maths B or equivalent is assumed knowledge.  Equivalents: ITB732  Credit points: 12  Contact hours: 3 per week  Campus: Gardens Point  Teaching period: 2011 SEM-1

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 or ITB003 or INB371  Antirequisites: ITB745, ITB706, INN365  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: 2011 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  Credit points: 12  Contact hours: 3 per week  Campus: Gardens Point  Teaching period: 2011 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: 2011 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: 2011 SEM-2

INB373 WEB APPLICATION DEVELOPMENT
This unit will provide you with an understanding of the issues, structure and technologies used for developing web-based systems. The unit will provide you with the theoretical and practical skills needed to develop enterprise critical applications designed with an n-tier architecture using state of the art technologies. A comparative technology approach is taken, including an analysis of how web technologies have evolved to date, in order to identify common themes and to better enable you to comprehend and critically evaluate future web technology offerings.

Prerequisites: INB271 or ITB007  Antirequisites: INN271, INN373  Equivalents: ITB716 and ITN716
Credit points: 12  Contact hours: 3 per week  Campus: Gardens Point  Teaching period: 2011 SEM-1

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: 2011 SEM-2

INB381 MODELLING AND ANIMATION TECHNIQUES
The development of computer graphics tools is a significant application within the IT, Games and related industries, relying heavily on software engineering methodologies.

These tools, such as CAD systems, 3D modelling systems and games engines, are used in such industries as advertising, engineering, manufacturing, simulation for education and training, computer games, film special effects, etc. Modelling techniques are intrinsic to a 3D graphics system, especially one used for real time animation. With increased CPU and GPU power, the ability to animate in real time is allowing more sophisticated interaction and the merger of games/simulation and film. 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: 2011 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: 2011 SEM-1

ITB001 PROBLEM SOLVING AND PROGRAMMING
This unit aims to give you a positive introduction to the analytical skills required in computer programming. It assumes you have little or no previous programming experience. The unit emphasises generic programming concepts and related problem-solving strategies. The skills you learn in the unit will be applicable to a wide variety of commonly-used, industrially-significant programming and scripting languages.

Prerequisite(s): Nil  Corequisite(s): Nil  Credit points: 12  Contact hours: 4  Campus: Gardens Point  Teaching period: 2008 SEM-1 and 2008 SEM-2  Incompatible with: ITB111

ITB002 IT PROFESSIONAL STUDIES
This unit aims to develop your professional skills and capabilities by providing theoretical and practical opportunities in the following areas: how IT teams operate, effective oral and written communication, team meeting processes and procedures, ethical and social responsibilities of the IT professional, information literacy and traits for life long learning. Demonstrable competency in these areas will be an expectation in subsequent units and will be developed further in them.
Prerequisite(s): Nil    Credit points: 12    Contact hours: 3    Campus: Gardens Point and Carseldine    Teaching period: 2008 SEM-1 and 2008 SEM-2 Incompatible with: ITB116

ITB003 OBJECT ORIENTED PROGRAMMING
Object Oriented Programming aims to develop your software design and development skills gained in ITB001, taking you from \textit{procedural} programming and problem solving into an Object Oriented approach. This unit is required by all IT majors, and is designed to be complimentary to ITB008: Modelling, Analysis and Design. You will use industry standard design approaches coupled with an \textit{industrial} strength \textit{OO} programming language to design and implement a \textit{real-life} software application. Along the way, you will gain a solid foundation in the principals of OOP, including encapsulation, polymorphism and inheritance, allowing you to solve real-world problems using the Object-Oriented design paradigm.
Prerequisite(s): ITB001 Credit points: 12 Contact hours: 4 Campus: Gardens Point Teaching period: 2008 SEM-1 and 2008 SEM-2 Incompatible with: ITB112

ITB004 DATABASE SYSTEMS
The aim of this unit is to introduce you to the structure and role of databases in modern businesses.
Prerequisite(s): Nil Credit points: 12 Contact hours: 3 Campus: Gardens Point Teaching period: 2008 SEM-1 and 2008 SEM-2 Incompatible with: ITB115

ITB005 SYSTEMS ARCHITECTURE
The aims of this unit are twofold. First is to introduce you to the challenging field of Systems Architecture and provide you with practical skills in using a range of modern computer operating systems through the presentation of case studies involving current technology and their relationship and interconnection within a contemporary computer systems architecture; and secondly, to provide you with sufficient knowledge to enable you at the completion of this unit, to make informed choices about areas of specialisation within your degree and be well prepared to undertake specialist units of your choice.
Prerequisite(s): Nil Credit points: 12 Contact hours: 3 Campus: Gardens Point Teaching period: 2008 SEM-1 and 2008 SEM-2 Incompatible with: ITB113

ITB006 NETWORKS
The aim of the unit is to provide an introductory study of computer networks within the IT profession.
Prerequisite(s): Nil Credit points: 12 Contact hours: 3 Campus: Gardens Point Teaching period: 2008 SEM-1 and 2008 SEM-2 Incompatible with: ITB114

ITB007 WEB DEVELOPMENT
The aims of the unit are to give you a thorough understanding of what the web is, how it works and what is has to offer. Additionally, the unit aims to give you a general understanding and basic skills in developing dynamic web applications, including an appreciation of the variety of implementation technologies available. Through an understanding of how web technologies have evolved to date, you will appreciate the necessity for lifelong learning and become an insightful predictor of future developments in this area. You will learn to critically analyse technological alternatives in order to adapt to and innovate with technologies that presently do not exist. You will appreciate the business or organizational context within which web applications exist and b
Prerequisite(s): ITB001, ITB002, ITB004 Credit points: 12 Contact hours: 3 Campus: Gardens Point Teaching period: 2008 SEM-1 and 2008 SEM-2 Incompatible with: ITB227

ITB008 MODELLING ANALYSIS AND DESIGN
The aim of this unit is to introduce students to the range of application systems found within organisations, the basic concepts of object orientation, the theory and practice of object modelling, analysis and design, the principles of software engineering and the team processes required to work in a modelling, analysis and design team.
Prerequisite(s): ITB002 Credit points: 12 Contact hours: 3 Campus: Gardens Point Teaching period: 2008 SEM-1 and 2008 SEM-2 Incompatible with: ITB118

ITB009 CORE PROJECT MANAGEMENT
This unit extends your development of the professional, technical and teamwork skills required by IT professionals in practice. It enables you to understand the process of project initiation and to build on this base in the following ITB010 Project 2 (or your Co-op appointment the following year).
Prerequisite(s): 144 cp overall including 96 cp of IT units Credit points: 12 Contact hours: 3 Campus: Gardens Point Teaching period: 2008 SEM-1 and 2008 SEM-2 Incompatible with: ITB613, ITB240

ITB010 CORE PROJECT IMPLEMENTATION
This capstone unit extends development of the professional, technical and teamwork skills required by IT professionals in practice. It enables you to understand the process of project implementation and to build on this base in your professional career.
Prerequisite(s): ITB009 Credit points: 12 Contact hours: 3 Campus: Gardens Point Teaching period: 2008 SEM-1, 2008 SEM-2 and 2008 SUMMER
MAB281 MATHEMATICS FOR COMPUTER GRAPHICS

Computer graphics is a rapidly growing field of the computer science industry. It has applications in computer games, virtual reality, CAD systems and geometric modelling. Fundamental to all of these applications is mathematics. Thus, to be a working professional in this area you will need a working knowledge of the basic mathematics and concepts that are central to this field. This unit is also ideal for non-specialists as it demonstrates some of the various fields of applications of mathematics in everyday life. The aim of this unit is to introduce you to the mathematics of computer graphics and relate this to the solutions of problems that arise in the many applications of computer graphics.

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: 2011 SEM-2