Bachelor of Information Technology (IT23)

Year offered: 2010
Admissions: Yes
CRICOS code: 012656E
Course duration (full-time): 3 years
Course duration (part-time): 6 years
Domestic fees (indicative): 2010: $3,790 (indicative) per semester
International Fees (indicative): 2010: $11,000 (indicative) per semester
Domestic Entry: February and July
International Entry: February, July and October#
QTAC code: 416801
Past rank cut-off: 74
Past OP cut-off: 13
Assumed knowledge: English (4,SA), Maths A, B or C (4,SA)
Preparatory studies: For information on acquiring assumed knowledge visit http://www.studentservices.qut.edu.au/apply/ug/info/knowledge.jsp
Total credit points: 288
Course coordinator: Mr Richard Thomas
Campus: Gardens Point

Study Areas
IT23 will not have nominated majors and minors and consequently there will not be a Study Area A shown on a graduate’s parchment. Instead, IT23 will have specialisations. The specialisation areas that will be available for students will include:
• Business Process Management
• Data Warehousing
• Digital Environments
• Enterprise Systems
• Network Systems
• Software Engineering
• Web Technologies

Course Description
This degree equips you to build and apply creative, innovative IT solutions across diverse industries. A hands-on, real-world based curriculum gives you the opportunity to explore a wide range of areas within IT, and gain deep understanding within your chosen area speciality, such as networking, software engineering, data warehousing, business process modelling, enterprise systems, information management, web technologies, or digital societies. You experience an innovative, hands-on approach to learning through projects where you develop IT systems. You will be able to gain entrepreneurial skills if you wish to learn how to develop an idea into a commercial opportunity. You learn to harness your creativity and people skills to maximise the impact of your technical know-how in the booming IT marketplace. It positions you for a challenging and rewarding career within the global economy. Full-time students are eligible for the Cooperative Education Program; paid industry work experience with credit towards your degree. Students are also offered many other work-integrated learning opportunities where you receive first-hand industry experience.

Course Structure
Block A: Core Studies
Students obtain a basic grounding in IT by completing eight (8) core IT units. Full-time students will normally take the first four core units (INB101, INB102, INB103 and INB104) in the first semester of their first year and part-time students will take these first four core units over two semesters in their first year. The remaining four core units are to be completed across the rest of the degree.

INB201 should be taken shortly after completing three or four breadth units as it consolidates the material from those units and shows how the knowledge and skills from those units contribute to creating large-scale systems. INB300 and INB301 should be taken after completing at least two specialisation units. INB300 gives you the opportunity to apply your skills in a professional work environment. INB301 prepares you for the completion of your degree and your transition into your career. INB302 should be taken in the final semester of your degree as it consolidates what you have learnt in your degree and demonstrates your overall capabilities.

Block B: Breadth and Depth
Students obtain breadth of IT knowledge by completing four (4) units of their choosing from the Breadth option list. Students gain depth of IT knowledge in an area of their choosing by completing four (4) units from the list of units in the different Specialisations Areas. Many specialisation units have specific breadth units as their pre-requisite. If a particular specialisation area or unit is of interest to you make sure you check on pre-requisites to ensure you take the appropriate breadth units. Note that most breadth and specialisation units are only offered once per year. You will need to check the semester in which units are offered to put together a timetable that allows you to take the units of interest to you. This may require that you adjust your course structure from the one suggested below by taking complimentary studies units earlier or later than indicated.

Block C: Complimentary Studies
Students can compliment their IT knowledge with either study from a different discipline (offered by any other Faculty at QUT) and/or further IT study in a different specialisation area or further breadth or elective units.
Students choose a total of eight (8) units in this block.

Note: A maximum of 4 units of professional certification permissible towards complimentary studies. This includes CISCO, Microsoft, etc.

Entry Requirements
Year 12 or equivalent
Prerequisites: Nil
Assumed Knowledge: English (4,SA), Maths A, B or C (4,SA)
Primary Fields: B
Secondary Fields: C
OP Guarantee: Yes

International Students

English language requirements
In addition to the above academic entry requirements, international students must meet the University’s English language requirements of IELTS of 6.5 (with no lower than 6.0 for any one band).

Pathways to Further Studies

In 2001, the Faculty introduced an accelerated Honours program to increase the number of Bachelor of Information Technology students continuing their studies to complete the Honours year. The program allowed selected high achieving students the opportunity to undertake one postgraduate unit in the final semester of the Bachelor of Information Technology which would be counted both for completion of the degree and towards Honours. The program also provided students with the opportunity to commence their Honours studies over the Summer Semester.

The Dean’s Scholars program was introduced in Semester 1, 2006. This program provides a scholarship for OP 1 and 2 students throughout their Bachelor and Honours degrees. Students in the program are required to maintain a high GPA to continue to qualify for the scholarship each semester. Students in the Dean’s Scholars program will be able to take advantage of the Accelerated Honours program. Students in the Dean’s Scholars program will have an option to follow an accelerated pathway through the Bachelor of Information Technology, allowing them to complete the Bachelor of Information Technology course plus the Bachelor of Information (Honours) course in a total of three years.

To encourage students to enter the Dean’s Scholars program, domestic students have their undergraduate HECS paid by the Faculty and those proceeding to Honour’s level will also receive full HECS support. International students who have completed a Year 12 education in Australia and meet the entry requirements for the program will have a third of their tuition fees paid by the Faculty for the undergraduate and Honours program.

An alternative to the Honours program is the Master of Information Technology (Research). Students who complete IT23 with a grade point average equal to or, greater than 5 (7 point scale) and who have decided against enrolling in an Honours program, could undertake this course. In addition, students may wish to enrol in the re-designed postgraduate coursework Masters which has ten specialisations allowing students to either extend their area of interest or specialise in other areas at the Masters level.

Cooperative Education Program

An optional half or full year period of paid work experience is available to eligible full-time students. Students participating in this program enrol in INS011 Co-Operative Education 1 in the first semester of the program and in INS012 Co-Operative 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 components of both units. Eligibility criteria apply. International students are not eligible due to visa restrictions. International students wishing to undertake a similar program should consider applying to take part in a CEED project (http://corptech.com.au/) or for an ACS Foundation scholarship (http://www.acsfoundation.com.au/).

Part-time students who are working in a professional IT position may be able to use their current employment to meet the criteria for completing INB300 Professional Practice in IT, after completion of 168 credit points in the Bachelor of Information Technology. Further information about this option is available from the unit outline for INB300.

Find out more about the Cooperative Education Program.

Deferment

QUT allows current Year 12 school leavers to defer their undergraduate admission offer for one year, or for six months if offered mid-year admission, except in courses using specific admission requirements such as questionnaires, folios, auditions, prior study or work experience.

Non-year 12 students may also request to defer their QTAC offer on the basis of demonstrated special circumstances. Find out more on deferment.
Further Information
For further information about this course, please contact the following:

Course Co-ordinator
Mr Richard Thomas
Phone: +61 7 3138 2782
Email: enquiry.scitech@qut.edu.au

IT23 Bachelor of Information Technology Course structure 2010

Year 1, Semester 1
INB101 Impact of IT
INB102 Emerging Technology
INB103 Industry Insights
INB104 Building IT Systems

Year 1, Semester 2
IT Breadth Option Unit
IT Breadth Option Unit
IT Breadth Option Unit
Complementary Studies Unit

Year 2, Semester 1
INB201 Scalable Systems Development
[Note: INB201 can only be taken after you have completed a minimum of 36 credit points of breadth units. Please note: INB201 available semester 1 only.]
IT Breadth Option Unit
IT Specialisation Option Unit
Complementary Studies Unit

Year 2, Semester 2
IT Specialisation Option Unit
Complementary Studies Unit
Complementary Studies Unit
Complementary Studies Unit

Year 3, Semester 1
INB300 Professional Practice in IT
INB301 The Business of IT
[Note: INB300 and INB301 can only be taken after you have completed a minimum of 168 credit points of study.]
IT Specialisation Option Unit

Year 3, Semester 2
INB302 Capstone Project
[Note: INB301 must be completed before enrolling in INB302.]
IT Specialisation Option Unit
Complementary Studies Unit
Complementary Studies Unit

IT Breadth Option Unit List

You must complete four (4) units from the following list. You should not commence these units until you have completed INB101, INB102, INB103 and INB104.

INB120 Corporate Systems
INB210 Databases
INB220 Business Analysis
INB250 Systems Architecture
INB251 Networks
INB255 Security
INB270 Programming
INB271 The Web
INB272 Interaction Design

IT Specialisation Option Unit List

You must complete four (4) units from the following list. Please ensure you have completed a minimum of 36 credit points (3 units) of IT Breadth Option Units before commencing these units. The units are grouped in areas to assist you in focusing your studies.

1. BUSINESS PROCESS MANAGEMENT:
INB320 Business Process Modelling
INB321 Business Process Management
INB322 Information Systems Consulting
INB123 Project Management Practice

2. DATA WAREHOUSING:
INB340 Database Design
INB341 Software Development With Oracle
INB342 Enterprise Data Mining
INB343 Advanced Data Mining and Data Warehousing

Please note: INB343 not offered in 2010
3. DIGITAL ENVIRONMENTS:
INB345 Mobile Devices
INB346 Enterprise 2.0
INB347 Web 2.0 Applications
INB335 Information Resources

4. ENTERPRISE SYSTEMS:
INB123 Project Management Practice
INB221 Technology Management
INB311 Enterprise Systems
INB312 Enterprise Systems Applications

5. NETWORK SYSTEMS:
INB350 Internet Protocols and Services
INB351 Computer Network Administration
INB352 Network Planning and Deployment
INB353 Wireless and Mobile Networks

6. SOFTWARE ENGINEERING:
INB370 Software Development
INB371 Data Structures and Algorithms
INB372 Agile Software Development
INB374 Enterprise Software Architecture

7. WEB TECHNOLOGIES:
INB313 Electronic Commerce Site Development
INB373 Web Application Development
INB374 Enterprise Software Architecture
INB385 Multimedia Systems
INB386 Advanced Multimedia Systems

8. UNGROUPED:
INB204 Special Topic 1
INB205 Special Topic 2
INB304 Special Topic 3
INB305 Special Topic 4
INB306 Project 1
INB307 Project 2
INB308 Project 3
INB355 Cryptology and Protocols
INB365 Systems Programming
INB860 Computational Intelligence for Control and Embedded Systems

Please note:
INB343 & INB323 are not offered in 2010

Complimentary Study Units: A maximum of 96 credit points can be chosen from:

1. The list of Breadth and Specialisation units.
2. Students can also choose from the range of CISCO units including INS350, INS351, INS352, INS353, INS354 and INS355.
3. Undergraduate units available with other QUT faculties.

NOTE: A maximum of four units Advanced Standing for industry certification units permitted.

CISCO Units

INS350 CCNA 1&2 Network Fundamentals and Routing
INS351 CCNA 3&4 Lan Switching
INS352 CCNP1: Building Scalable Internetworks
INS353 CCNP 2: Building Multi Layered Switched Networks
INS354 CCNP3: Building Multi Layered Switched Networks
INS355 CCNP 4: Optimising Converged Networks

IT23 Course structure - Part-time

Year 1, Semester 1
INB101 Impact of IT
INB102 Emerging Technology

Year 1, Semester 2
INB103 Industry Insights
INB104 Building IT Systems

Year 2, Semester 1
INB201 Scalable Systems Development

Year 2, Semester 2
INB201 Scalable Systems Development

Year 3, Semester 1
INB201 Scalable Systems Development

INB201 can only be taken after you have completed a minimum of 36 credit points of
UNIT SYNOPSES

INB101 IMPACT OF IT
You will gain an appreciation of the massive and positive impact that IT has had on a wide range of fields including business, science, engineering, education and health. You will learn about the benefits of increased productivity due to IT. You will consider ethical issues and possible negative implications of IT. You will consider ethical issues and possible negative impacts of IT. You will raise your awareness of the social implications of IT. You will develop an informed position on issues, and justify your reasoning with considered

INB102 Emerging Technology
INB103 Industry Insights
INB104 Building IT Systems

INB201 Scalable Systems Development
INB202 Capstone Project

INB300 Professional Practice in IT
INB301 The Business of IT
INB303 Industry Insights
INB304 Building IT Systems

INB301 must be completed before enrolling in INB303 and INB301 can only be taken after you have completed a minimum of 192 credit points of study. INB301 can only be taken after you have completed a minimum of 192 credit points of study. INB301 may be taken concurrently with INB302 for students whose course completes in the middle of the year.

INB300 can only be taken after you have completed a minimum of 192 credit points of study. INB302 may be taken concurrently with INB300 for students whose course completes in the middle of the year.

INB302 must be completed before enrolling in INB301 and INB302 can only be taken after you have completed a minimum of 192 credit points of study. INB302 for students whose course completes in the middle of the year.

INB300 can only be taken after you have completed a minimum of 192 credit points of study. INB301 may be taken concurrently with INB302 for students whose course completes in the middle of the year.

INB301 can only be taken after you have completed a minimum of 192 credit points of study.
supportive arguments.

**Antirequisites:** ITB361, INN101  
**Credit points:** 12  
**Contact hours:** 3 per week  
**Campus:** Gardens Point  
**Teaching period:** 2010 SEM-1 and 2010 SEM-2

**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

**INB120 CORPORATE SYSTEMS**
Corporate Systems Management is a growing area where people can make a difference to the way organisations and societies operate. In key business domains, such as Government, Health, Finance, Utilities and Primary Industries, Corporate Systems Managers play a vital role in directing the socio-technical systems that affect everyone’s lives. This unit will help students to gain an overview of these major roles and key business domains in order to set the scene for their future studies and help them to match their emerging professional interests with potential career directions.

**Antirequisites:** ITB360  
**Credit points:** 12  
**Contact hours:** 3 per week  
**Campus:** Gardens Point  
**Teaching period:** 2010 SEM-1

**INB123 PROJECT MANAGEMENT PRACTICE**
Successful businesses use Project Management (PM) processes to structure the implementation, upgrades and process improvement activities undertaken within organisations. This unit investigates project management processes and analyses, combines and applies the basic elements and tools of successful projects to ICT cases. With a focus on contemporary organisations, the unit covers activities such as communication and risk management, change management, recording keeping and project reporting. The unit covers practical, relevant and topical PM issues delivered as a complex project activity.

**Antirequisites:** INN500  
**Assumed knowledge:** Completion of 48 credit points of an Undergraduate study is assumed knowledge.  
**Credit points:** 12  
**Contact hours:** 3 per week  
**Campus:** Gardens Point  
**Teaching period:** 2010 SEM-2

**INB201 SCALABLE SYSTEMS DEVELOPMENT**

**Prerequisites:** (INB102 or ITB005) and (INB104 or ITB001)  
**Assumed knowledge:** Completion of 36cp of Breadth units is assumed knowledge.  
**Credit points:** 12  
**Contact hours:** 3 per week  
**Campus:** Gardens Point  
**Teaching period:** 2010 SEM-1

**INB204 SPECIAL TOPIC 1**
This unit gives you the opportunity to apply, under appropriate guidance, the knowledge and skills gained in your course to date and to execute a substantial development project. The ability to apply technical knowledge and skills to real-life situations is essential for information technology professionals. A substantial project, under academic supervision, will develop your initiative and
ability to apply your knowledge and skills in a professional capacity. Completing the project will also enable you to appreciate the complementary nature of the course material in total, particularly the need for careful project management.

**Prerequisites:** INB371  
**Assumed knowledge:** Knowledge of programming in Java, C# or C++. Knowledge of basic data structures (stacks, queues, trees, linked lists, hash tables), complexity analysis  
**Credit points:** 12  
**Contact hours:** 3 per week  
**Campus:** Gardens Point

**INB205 SPECIAL TOPIC 2**
This unit gives you the opportunity to apply, under appropriate guidance, the knowledge and skills gained in your course to date and to execute a substantial development project. The ability to apply technical knowledge and skills to real-life situations is essential for information technology professionals. A substantial project, under academic supervision, will develop your initiative and ability to apply your knowledge and skills in a professional capacity. Completing the project will also enable you to appreciate the complementary nature of the course material in total, particularly the need for careful project management.

**Prerequisites:** INB255, INB351 and INB365  
**Assumed knowledge:** Basic computer security knowledge, a good understanding of the use of Unix operating systems, computer networking and Programming experience (such as Python, C#, C, Java).  
**Other requisites:** Students must have completed 192 credit points towards their bachelor degree. Students must have a GPA of 5.5  
**Credit points:** 12  
**Contact hours:** 3 per week  
**Campus:** Gardens Point

**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)  
**Equivalent:** ITB004, ITB115  
**Credit points:** 12  
**Contact hours:** 3 per week  
**Campus:** Gardens Point  
**Teaching period:** 2010 SEM-2

**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 trade—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).

**Credit points:** 12  
**Contact hours:** 3 per week  
**Campus:** Gardens Point  
**Teaching period:** 2010 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  
**Equivalent:** ITB366, ITB241  
**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

**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.

**Antirequisites:** ITB006  Credit points: 12  Contact hours: 3 per week  Campus: Gardens Point  Teaching period: 2010 SEM-2

**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 and ITN161  **Equivalents:** ITB730  Credit points: 12  Contact hours: 3 per week  Campus: Gardens Point  Teaching period: 2010 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.

**Prerequisites:** INB104 or ENB246  **Antirequisites:** ITB003, ITB112, ITB411, INN270  Credit points: 12  Contact hours: 3 per week  Campus: Gardens Point  Teaching period: 2010 SEM-2

**INB271 THE WEB**

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.

**Prerequisites:** INB104  **Antirequisites:** INB373 and INN373 and ITB007 and ITB227 and ITN007 and ITN227  Credit points: 12  Contact hours: 3 per week  Campus: Gardens Point  Teaching period: 2010 SEM-1

**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: 2010 SEM-2

**INB300 PROFESSIONAL PRACTICE IN IT**

In this unit you will have the opportunity to experience real world work experiences and to reflect on how your studies have prepared you for the work environment. This will give you the opportunity to plan on how to best take advantage of your remaining studies to prepare for your planned career. To help you to understand your future career you will be working in a team and/or group environments, seeing firsthand the challenges and constraints that arise during professional practice in a real world industry environment. You will develop a richer appreciation of the graduate capabilities required of all information technology professionals, particularly skills such as communication, negotiation and problem-solving strategies.

**Antirequisites:** ITS020, INS010, INS011, INS012, INS020  Assumed knowledge: Completion of 168 credit points within BIT is assumed  Credit points: 12  Contact hours: 3 per week  Campus: Gardens Point  Teaching period: 2010 SEM-1, 2010 SEM-2 and 2010 SUM

**INB301 THE BUSINESS OF IT**

As an IT professional you are more and more evaluated in terms of the business value that you produce. This unit will prepare you for professional practice by making you "business savvy," i.e. giving you the business knowledge and skills that will help you with your future career and job. In particular the unit will address three themes: (1) career planning and job applications, (2) entrepreneurship & innovation, and (3) business and IT strategy. You will be introduced to career development tools that enable you to self-manage your career and life. You will learn how to critically think about the requirements of a job and reflect upon your own experiences and learn how to communicate them. You will also learn about the entrepreneurial process of identifying a business opportunity and how to take
In this unit, students will develop an understanding of the role, design, and plan of a computer game concept. Students will learn how to apply their knowledge and skills in a professional environment under academic supervision. Completing the project will also enable students to appreciate the complementary nature of the course material in total, particularly the need for careful project management.

**Prerequisites:** INB371  
**Credit points:** 12  
**Contact hours:** 3 per week  
**Campus:** Gardens Point  
**Teaching period:** 2010 SEM-2

### INB304 SPECIAL TOPIC 3

Traditional Artificial Intelligence (AI) aims at satisfying the Turing test, that is, it aims at making computers indistinguishable from humans. Game AI aims at giving Non-Player Characters (NPC) behavioural artefacts that complement a game narrative. Students will work 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 outcomes. The unit also focuses on furthering students' professional skills in report writing, oral communication, and visual communication.

**Prerequisites:** INB301  
**Assumed knowledge:** Students are expected to have a solid IT background knowledge (e.g., completion of at least 192 credit points)  
**Equivalents:** ITB010  
**Credit points:** 12  
**Contact hours:** 3 per week  
**Campus:** Gardens Point  
**Teaching period:** 2010 SEM-1, 2010 SEM-2 and 2010 SUM

### INB304 SPECIAL TOPIC 4

INB305 Bgie Project Design Phase (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.

**Assumed knowledge:** Assumed knowledge is completion of 192cp of which at least 144cp must be IT units  
**Equivalents:** ITB791  
**Credit points:** 12  
**Contact hours:** 3 per week  
**Campus:** Gardens Point  
**Teaching period:** 2010 SEM-1, 2010 SEM-2 and 2010 SUM
**INB308 PROJECT 3**
This unit gives you the opportunity to apply, under appropriate guidance, the knowledge and skills gained in your course to date and to execute a substantial development project. The ability to apply technical knowledge and skills to real-life situations is essential for information technology professionals. A substantial project, under academic supervision, will develop your initiative and ability to apply your knowledge and skills in a professional capacity. Completing the project will also enable you to appreciate the complementary nature of the course material in total, particularly the need for careful project management.

**Assumed knowledge:** Assumed knowledge is completion of 192 credit points of which at least 144 credit points must be for IT units. **Credit points:** 12  **Contact hours:** 3 per week  **Campus:** Gardens Point  **Teaching period:** 2010 SEM-1, 2010 SEM-2 and 2010 SUM

**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.

**Credit points:** 12  **Contact hours:** 3 per week  **Campus:** Gardens Point  **Teaching period:** 2010 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 S&D) 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:** 2010 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.

**Equivalents:** ITB260  **Credit points:** 12  **Contact hours:** 3 per week  **Campus:** Gardens Point  **Teaching period:** 2010 SEM-2

**INB320 BUSINESS PROCESS MODELLING**
The aim of this unit is to introduce you to modern methods and tools of business process management. These skills will be applied to the most complex, comprehensive and relevant IT applications. This unit also seeks to develop logical thinking and the capability to understand and deal with complex systems, within a business management framework. The content will focus strongly on business process modelling, as a fundamental technique to manage the complexity associated with process management tasks within various contexts.

**Equivalents:** ITB298  **Credit points:** 12  **Contact hours:** 3 per week  **Campus:** Gardens Point  **Teaching period:** 2010 SEM-2

**INB321 BUSINESS PROCESS MANAGEMENT**
The aim of this unit is to introduce you to modern methodologies of Business Process Management. A main objective is to increase your awareness of the close link between business requirements and IT capabilities, and the related fundamental role of business processes. This unit also seeks to develop logical thinking, an appreciation for conceptual models, and the capability to understand and deal with complex systems.

**Antirequisites:** INN321  **Credit points:** 12  **Contact hours:** 3 per week  **Campus:** Gardens Point  **Teaching period:** 2010 SEM-1

**INB322 INFORMATION SYSTEMS CONSULTING**
The aim of the unit is to develop your skills in the consulting engagement process. This unit will give you an appreciation of the management of consulting practices and an understanding of the consulting sector generally. This unit presents the tactical and strategic issues involved in management consulting, and in particular: client engagement. In the unit there is an emphasis on Information Systems (IS) related work. IS constitutes a substantial portion of consulting activity and cuts across all areas of business expertise. The unit examines the dynamics of IS consulting within the context of large consulting firms and
familiarises students with the consulting engagement lifecycle.

**Antirequisites:** ITB264, ITN264  **Assumed knowledge:** Completion of 96 credit points of an Undergraduate study is assumed knowledge  **Credit points:** 12  **Contact hours:** 3 per week  **Campus:** Gardens Point  **Teaching period:** 2010 SEM-1

### INB335 INFORMATION RESOURCES
This unit will help you to understand the structure of the information environment, to reflect upon the information resources you discover, and to develop the ability to find appropriate information for future problem solving. You will develop your skills in identifying, accessing, evaluating and retrieving information resources to meet specific information needs. The unit will also help you develop skills in teamwork and oral and written communication.

**Equivalents:** ITB322  **Credit points:** 12  **Contact hours:** 3 per week  **Campus:** Gardens Point  **Teaching period:** 2010 SEM-2

### INB340 DATABASE DESIGN
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.

**Prerequisites:** INB210 or ITB004  **Antirequisites:** ITB229  **Credit points:** 12  **Contact hours:** 3 per week  **Campus:** Gardens Point  **Teaching period:** 2010 SEM-1

### INB341 SOFTWARE DEVELOPMENT WITH ORACLE
Oracle Corporation is the leading supplier of database software. 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:** 2010 SEM-2

### INB342 ENTERPRISE DATA MINING
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:** 2010 SEM-2

### INB343 ADVANCED DATA MINING AND DATA WAREHOUSING
Data warehousing and mining have been well recognized as the dominating techniques for using databases in the future. This unit discusses the concepts, structures and algorithms of data warehousing and mining, e.g., data architecture and quality, data warehouse and data mart, data cubes, OLAP, patterns, association rules and decision tables. Through this study, students will be able to demonstrate knowledge and skills of designing, developing and implementing data warehousing components in SQL environments. It also enables students to design systems and tools that provide services to data management and analysis, such as data warehouses, data mining tools, business intelligence based systems, smart information use systems, and data processing systems.

**Prerequisites:** INB210  **Credit points:** 12  **Contact hours:** 3 per week  **Campus:** Gardens Point

### 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
INB346 ENTERPRISE 2.0
This unit will help you to acquire the skills and knowledge required to critically explore and utilise applications within diverse contexts and organisations.

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

INB347 WEB 2.0 APPLICATIONS
Web 2.0 applications enable the user to be control. The unit will provide the opportunity for students to explore web 2.0 applications including blogs, wikis, social networking, social tagging, podcasts, gaming, storytelling and virtual worlds such as second life. Students will critically consider the many and varied web applications and how they can be used in different contexts such as government, small and medium size businesses, non-profit organisations, educational institutions and community groups.

**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

INB351 COMPUTER 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:** INB350  
**Equivalents:** ITB721, ITB625, ITB535, ITB525  
**Credit points:** 12  
**Contact hours:** 3 per week  
**Campus:** Gardens Point  
**Teaching period:** 2010 SEM-2

INB352 NETWORK PLANNING AND DEPLOYMENT
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  
**Antirequisites:** ITB551, ITB628, ITB722, INN352, ITN551, ITN722  
**Credit points:** 12  
**Contact hours:** 3 per week  
**Campus:** Gardens Point  
**Teaching period:** 2010 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:** 2010 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.

**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:** 2010 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  
**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

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: INN373 Equivalents: ITB716 and ITN716 Credit points: 12 Contact hours: 3 per week Campus: Gardens Point Teaching period: 2010 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: 2010 SEM-2

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

INB386 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

**INB860 COMPUTATIONAL INTELLIGENCE FOR CONTROL AND EMBEDDED SYSTEMS**

This is a specialisation unit in the area of Infomechatronics which introduces five methods from the field of computational intelligence and relates them to applications on real-time control and embedded systems. The methods are: Knowledge Base Systems, Fuzzy Control, Neural Networks, Reinforcement Learning and Evolutionary Computation. The unit is also intended to teach the specific design and programming skills that will enable you to solve problems using computational intelligence methods in real-time embedded systems. It is assumed that you already have knowledge of programming.

**Antirequisites:** ITB847

**Credit points:** 12

**Contact hours:** 3 per week

**Campus:** Gardens Point

**Teaching period:** 2010 SEM-2

**INS350 CCNA 1&2 NETWORK FUNDAMENTALS AND ROUTING**

This unit provides in-demand Internet technology skills for designing, building and maintaining networks. Combining instructor-led, online education with hands-on laboratory exercises, the curriculum enables students to apply what they learn in class while working on actual networks. From building basic networking skills to advanced VLAN troubleshooting, the Networking Academy curriculum prepares students for industry certification that lead to lifelong opportunities. Particular emphasis is given to using decision-making and problem-solving techniques in the application of science, mathematics, communication and social studies concepts to solve networking problems.

**Antirequisites:** INS450

**Equivalents:** ITS701, ITS601, ITB011, ITN011

**Credit points:** 12

**Contact hours:** 3 per week

**Campus:** Gardens Point

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

**INS351 CCNA 3&4 LAN SWITCHING**

This unit is the second step to a Cisco career certification path. The aim of this unit is to prepare students for the topics covered in Interconnecting Cisco Networking Devices Part 2 (ICND2) v1.0 (640-816) and Cisco Certified Network Associate Exam (CCNA 640-802). The ICND exam is one of the two qualifying exams available to candidates pursuing a two-exam option for the Cisco Certified Network Associate (CCNA) certification and CCNA 640-802, single-exam option for the Cisco Certified Network Associate CCNA certification.

**Prerequisites:** INS350

**Antirequisites:** ITB011, INS451

**Equivalents:** ITS602 and ITS702 and ITB012

**Credit points:** 12

**Contact hours:** 3 per week

**Campus:** Gardens Point

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

**INS352 CCNP 1: BUILDING SCALABLE INTERNETWORKS**

This unit is the second step to a Cisco career certification path. It provides more knowledge and practical skills on Wide Area Network through various routing protocols and layer 2 related technologies. This unit provides you with advanced level of study on WAN technologies.

**Prerequisites:** INS351

**Antirequisites:** INS452

**Assumed knowledge:** INS350, CCNA 1/2/3/4 are recommended prior study

**Equivalents:** ITS703

**Credit points:** 12

**Campus:** Gardens Point

**Teaching period:** 2010 SEM-1

**INS353 CCNP 2: BUILDING MULTI LAYERED SWITCHED NETWORKS**

This unit provides more knowledge and practical skills on building multi-layered switched networks. The aim of the unit is to provide professional knowledge and skills focusing on multi layer switched networks.

**Prerequisites:** INS352

**Antirequisites:** INS453

**Equivalents:** ITS704

**Credit points:** 12

**Campus:** Gardens Point

**Teaching period:** 2010 SEM-2

**INS354 CCNP3: BUILDING MULTI LAYERED SWITCHED NETWORKS**

This unit is the second step to a Cisco career certification path. It provides more knowledge and practical skills on securing enterprise networks with various security technologies. The aim of this unit is to provide professional knowledge and skills focusing on securing LANs and WANs environment.

**Prerequisites:** INS351

**Antirequisites:** INS454

**Assumed knowledge:** INS350 and INS351 are recommended prior study

**Equivalents:** ITS705

**Credit points:** 12

**Campus:** Gardens Point

**Teaching period:** 2010 SEM-1

**INS355 CCNP 4: OPTIMISING CONVERGED NETWORKS**

This unit provides more knowledge and practical skills on optimising converged networks. The aim of the unit is to provide professional knowledge and skills focusing on converged networks.
Prerequisites: INS354    Antirequisites: INS455    Credit points: 12    Contact hours: 3 per week    Campus: Gardens Point    Teaching period: 2010 SEM-2