Master of Information Technology (Advanced) (Network Management) (IT44)

Year offered: 2011
Admissions: Yes
CRICOS code: 053123F
Course duration (full-time): 2 years
Course duration (part-time): 4 years
Domestic Fees (indicative): 2011: Full fee tuition $7,375 (indicative) per semester
International Fees (indicative): 2011: $11,125 (indicative) per semester
Domestic Entry: February and July
International Entry: February and July
Total credit points: 192
Standard credit points per full-time semester: 48
Standard credit points per part-time semester: 24
Course coordinator: Dr Ross Hayward
Campus: Gardens Point

Course completion rules
Students should meet the following requirements before they are able to complete the Masters Advanced program:
• Students are required to complete 192 credit points of units.
• Students are required to complete the specified core unit.
• Students seeking a single area of specialisation must complete the specific unit requirements for a major.
• Students not seeking a single area of specialisation may graduate with no major.
• Students must complete 48 credit points of project or advanced research units.
• Students may be allowed to take up to four units of electives. These units may be selected from postgraduate units outside of the Faculty of Science and Technology.

Early exit options
Students enrolled in this course may be eligible to exit their courses with a Graduate Certificate (IT85), after successful completion of an approved 48 credit points, or with a Graduate Diploma (IT37), after successful completion of an approved 96 credit points, or with a Masters (IT43) after successful completion of an approved 144 credit points.

Further Information
For further information about this course, please contact:
Dr Ross Hayward
Phone: +61 7 3138 2782
Email: enquiry.scitech@qut.edu.au

Core
INN500 PRINCE2 (R) Project Management

All of the following units:
INN350 Internet Protocols and Services
INN351 Unix Network Administration
INN352 Network Planning
INN650 Advanced Network Management

In addition, select 3 of the following units:
INN255 Security
INN353 Wireless and Mobile Networks
INN355 Cryptology and Protocols
INN550 Computer Forensics
INN600 Advanced Readings 1
INN601 Advanced Readings 2
INN602 Advanced Readings 3
INN605 Advanced Research 1
INN606 Advanced Research 2
INN607 Advanced Research 3
INN651 Security Technologies
INN652 Advanced Cryptology
INN700 Introduction To Research
INS450 CCNA 1 and 2 Network Fundamentals and Routing
INS451 CCNA 3 and 4 Lan Switching
INS452 CCNP1: Building Scalable Internetworks
INS454 CCNP3: Building Multi Layered Switched Networks
INS455 CCNP4: Optimising Converged Networks
INN701 Advanced Research Topics

Elective Units
Select any four Postgraduate Units.

Advanced Research Units (Project Units)
Students of IT44 are required to complete 48cp of advanced research/project units in the form of a 48cp Dissertation or two 24cp Projects.

Postgraduate IT Units
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INN700  Introduction To Research
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INN701  Advanced Research Topics
INN281  Advanced Game Design
INS040  Professional Experience (Postgraduate)
INS450  CCNA 1 and 2 Network Fundamentals and Routing
INS451  CCNA 3 and 4 Lan Switching
INS452  CCNP1: Building Scalable Internetworks
INS454  CCNP3: Building Multi Layered Switched Networks
INS456  Voice Over IP 1
INS457  CISCO VOIP

IT44 - Advanced Research/Project Units

Major Study Areas
INN600  Advanced Readings 1
INN601  Advanced Readings 2
INN602  Advanced Readings 3
INN605  Advanced Research 1
INN606  Advanced Research 2
INN607  Advanced Research 3
INN690  Minor Project 1
INN691  Minor Project 2
INN692  Minor Project 3
INN693  Project
INN694-1  Project 1
INN694-2  Project
INN695  Major Project
INN696-1  Major Project 1
INN696-2  Major Project 2

UNIT SYNOPSES

INN101 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 impacts of IT. You will raise your awareness of the social implications of IT systems for society at the global, local and personal levels. You will develop an informed position on issues, and justify your reasoning with considered supportive arguments.

Antirequisites: INB101, ITB361, ITN361  Credit points: 12  Contact hours: 3 per week  Campus: Gardens Point  Teaching period: 2011 SEM-1 and 2011 SEM-2

INN120 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: ITN360 and INB120  Credit points: 12  Contact hours: 3 per week  Campus: Gardens Point  Teaching period: 2011 SEM-1

INN122 ORGANISATIONAL DATABASES
Databases are a key feature in modern organisational systems. Stores of data are the prerequisite for organisational knowledge and are the substance of technology applications. Databases underpin all technologies, platforms and application areas such as online transactions (e.g. shopping), health information systems, web services, e-government, banking and geographical information systems. Corporate Systems Managers understand how databases are used in business domains and the benefits gained from capturing, storing and retrieving quality data to assist organisational planning and decision making. Professionals who understand the privacy and legislative requirements as they pertain to database security and management are increasingly in demand.

Antirequisites: INB122, ITB362, ITN365  Equivalents: ITN122  Credit points: 12  Contact hours: 3 per week  Campus: Gardens Point  Teaching period: 2011 SEM-1

INN124 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.
systems developers. In this dynamic industry, self-managed learning is necessary to remain abreast of technology innovations.

Antirequisites: INB124  Credit points: 12  Contact hours: 3 per week  Campus: Gardens Point  Teaching period: 2011 SEM-2

INN180 COMPUTER GAMES STUDIES
This unit is designed to give you a clear understanding of the socio-cultural issues that affect the computer game industry. Through critical review of games and games industry literature, playing games and actively participating in classroom discussion you will develop your capacity to join in the discourse about the design, impact and future direction of computer games in our society.

Antirequisites: INB180, ITB750  Equivalents: ITN750  Credit points: 12  Contact hours: 3 per week  Campus: Gardens Point  Teaching period: 2011 SEM-1

INN181 INTRODUCTION TO GAMES PRODUCTION
This subject will provide you with knowledge and skills in games production. By gaining an overview of the production process, you will learn how the technology and the people involved integrate into a coherent and efficient manufacturing process. By the end of this subject you will have the knowledge to conceive, create, integrate and optimise tools and personnel into a complete games production system.

Antirequisites: INB181, ITB751, ITN751  Credit points: 12  Contact hours: 3 per week  Campus: Gardens Point  Teaching period: 2011 SEM-2

INN210 DATABASES
Databases and database systems are essential items that support many aspects of everyday life in modern society. All graduates from a course in Information Technology will be expected by employers to understand the concepts and terminology of databases. The aim of this unit is to introduce you to the structure and role of databases in modern organisations.

Antirequisites: INB210  Equivalents: ITN200  Credit points: 12  Contact hours: 3 per week  Campus: Gardens Point  Teaching period: 2011 SEM-2

INN220 BUSINESS ANALYSIS
This unit is aimed 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: INB220  Equivalents: ITB222, ITB365, ITN222, ITN365  Credit points: 12  Contact hours: 3 per week  Campus: Gardens Point  Teaching period: 2011 SEM-1

INN221 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.

Antirequisites: ITN241, ITN251, ITN366, INB221  Assumed knowledge: INB103, ITB002 or ITB360  Credit points: 12  Contact hours: 3 per week  Campus: Gardens Point  Teaching period: 2011 SEM-1

INN250 FOUNDATIONS OF COMPUTER SCIENCE
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. Most of the techniques are derived from the field of Discrete Mathematics and are the foundation of the discipline called Computer Science.

Antirequisites: INB250  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: 2011 SEM-2

INN251 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:** INB251   **Equivalents:** ITN701   **Credit points:** 12   **Contact hours:** 3 per week   **Campus:** Gardens Point   **Teaching period:** 2011 SEM-2

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**INN255 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:** INB255, ITB161, ITB523, ITB623, ITB730   **Equivalents:** ITN161, ITN511, ITN523, ITN663, ITN730   **Credit points:** 12   **Contact hours:** 3 per week   **Campus:** Gardens Point   **Teaching period:** 2011 SEM-1

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**INN270 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.

**Antirequisites:** INB270   **Equivalents:** ITN700   **Credit points:** 12   **Contact hours:** 3 per week   **Campus:** Gardens Point   **Teaching period:** 2011 SEM-1 and 2011 SEM-2

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**INN271 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.

**Antirequisites:** INN373, INB373   **Assumed knowledge:** Basic programming and database knowledge is assumed.   **Equivalents:** ITB007, ITB227, ITN007   **Credit points:** 12   **Contact hours:** 3 per week   **Campus:** Gardens Point   **Teaching period:** 2011 SEM-1

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**INN272 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.

**Antirequisites:** INB272   **Equivalents:** ITN254   **Credit points:** 12   **Contact hours:** 3 per week   **Campus:** Gardens Point   **Teaching period:** 2011 SEM-2

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**INN280 FUNDAMENTALS OF GAME DESIGN**

Modern games production is a complex process involving various businesses and organisations, working with budgets in the tens of millions. One of the roles within a game production team is that of the game designer. It is crucial that a game designer understands how to create a game world, the rules that govern game play and other high level design tasks. This subject provides an introduction to game design, by starting with high level conceptual design tasks before moving to more concrete tasks.

**Antirequisites:** ITB016 and INB280   **Equivalents:** ITN016   **Credit points:** 12   **Contact hours:** 3 per week   **Campus:** Gardens Point   **Teaching period:** 2011 SEM-2

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**INN281 ADVANCED GAME DESIGN**

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

**Prerequisites:** INN280   **Antirequisites:** ITB017 and INB281   **Equivalents:** ITN017   **Credit points:** 12   **Contact hours:** 3 per week   **Campus:** Gardens Point   **Teaching period:** 2011 SEM-1
INN311 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: INB311 Credit points: 12 Contact hours: 3 per week Campus: Gardens Point Teaching period: 2011 SEM-2

INN312 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 environments.

Antirequisites: INB312, ITB233 Equivalents: ITN233 Credit points: 12 Contact hours: 3 per week Campus: Gardens Point Teaching period: 2011 SEM-1

INN313 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.

Antirequisites: INB313 and ITB260 Equivalents: ITN260 Credit points: 12 Contact hours: 3 per week Campus: Gardens Point Teaching period: 2011 SEM-2

INN320 BUSINESS PROCESS MODELLING
The aim of this unit is to introduce you to modern methodologies of business process modelling. A main objective is to increase your awareness of the conceptual foundation of modelling and for the capabilities of BPMN and available tools. You will learn how to use grammars and tools to build, maintain and communicate practically relevant process models.

Antirequisites: ITB298 and ITB320 Equivalents: ITN301 Credit points: 12 Contact hours: 3 per week Campus: Gardens Point Teaching period: 2011 SEM-2

INN321 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: INB321 Equivalents: ITN298 Credit points: 12 Contact hours: 3 per week Campus: Gardens Point Teaching period: 2011 SEM-1

INN322 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: INN335, ITN332, INB322 Assumed knowledge: Good knowledge of professional oral and written communication practices and team work processes is assumed. Equivalents: ITN273 Credit points: 12 Contact hours: 3 per week Campus: Gardens Point Teaching period: 2011 SEM-1

INN330 INFORMATION MANAGEMENT
The aim of this unit is to provide you with an awareness of the activities in which IM professionals are engaged within various organisational contexts. You will use case studies and introduce yourself to the strategic and analytic elements that comprise information management activities. These activities include the alignment of enterprise information and business planning, enterprise information policy, evaluation of information resources & systems and applications of the information inventory.

Antirequisites: INB330 Equivalents: ITN266 Credit
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.

Antirequisites: INB335, INN332, ITN273
Equivalents: ITN332
Credit points: 12
Contact hours: 3 per week
Campus: Gardens Point
Teaching period: 2011 SEM-2

INN340 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.

Antirequisites: INB340
Assumed knowledge: INN210 or ITN200 is assumed knowledge
Equivalents: ITN229
Credit points: 12
Campus: Gardens Point
Teaching period: 2011 SEM-1

INN341 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.

Prerequisites: INN210 or ITN200 or INN122 or ITB004
Antirequisites: INB341, ITB223
Equivalents: ITN223
Credit points: 12
Contact hours: 3 per week
Campus: Gardens Point
Teaching period: 2011 SEM-2

INN342 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: INN210 or INN340 or INN122
Antirequisites: ITB239, INB342
Equivalents: ITN239
Credit points: 12
Contact hours: 3 per week
Campus: Gardens Point
Teaching period: 2011 SEM-2
INN343 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: INN210  Antirequisites: INB343  Credit points: 12  Contact hours: 3 per week  Campus: Gardens Point  Teaching period: 2011 SEM-1

INN344 SEARCH ENGINE TECHNOLOGY
Antirequisites: INB344  Assumed knowledge: Intermediate programming experience with intermediate-level knowledge of data structures and algorithms  Credit points: 12  Campus: Gardens Point

INN345 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.
Antirequisites: INB345  Credit points: 12  Contact hours: 3 per week  Campus: Gardens Point  Teaching period: 2011 SEM-1

INN346 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.
Antirequisites: INB346  Credit points: 12  Contact hours: 3 per week  Campus: Gardens Point  Teaching period: 2011 SEM-2

INN347 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.
Antirequisites: INB347  Credit points: 12  Contact hours: 3 per week  Campus: Gardens Point  Teaching period: 2011 SEM-1

INN350 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.
Antirequisites: INB345, ITB624, ITB629, ITB720, ITN524, ITN529, ITN667  Assumed knowledge: INN251 is assumed knowledge.  Credit points: 12  Contact hours: 3 per week  Campus: Gardens Point  Teaching period: 2011 SEM-1

INN351 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: INN350  Antirequisites: INB351  Credit points: 12  Contact hours: 3 per week  Campus: Gardens Point  Teaching period: 2011 SEM-2

INN352 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.
Antirequisites: INB352, ITN722, ITN551, ITB628, ITB551, ITB722, ENSN523  Credit points: 12  Contact hours: 3 per week  Campus: Gardens Point  Teaching period: 2011 SEM-2

INN353 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.

**Antirequisites:** INB355  
**Assumed knowledge:** Maths B or equivalent (e.g. MAB105) is assumed knowledge.  
**Equivalents:** ITB548, ITB566, ITB646, ITB732, ITN566, ITN512, ITN581, ITN732, **Credit points:** 12  
**Contact hours:** 3 per week  
**Campus:** Gardens Point  
**Teaching period:** 2011 SEM-1

### INN355 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:** INB355  
**Assumed knowledge:** Maths B or equivalent (e.g. MAB105) is assumed knowledge.  
**Equivalents:** ITB548, ITB566, ITB646, ITB732, ITN566, ITN512, ITN581, ITN732, **Credit points:** 12  
**Contact hours:** 3 per week  
**Campus:** Gardens Point  
**Teaching period:** 2011 SEM-1

### INN365 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:** INN270 or ITB003 or INB270  
**Antirequisites:** ITB706, ITB745, ITB365  
**Assumed knowledge:** Fundamentals of computer architecture; high level programming languages (such as C, C++, C#, Java, python) is assumed knowledge  
**Credit points:** 12  
**Contact hours:** 3 per week  
**Campus:** Gardens Point  
**Teaching period:** 2011 SEM-2

### INN370 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.

**Antirequisites:** INB370  
**Assumed knowledge:** INN270 is assumed knowledge.  
**Credit points:** 12  
**Contact hours:** 3 per week  
**Campus:** Gardens Point  
**Teaching period:** 2011 SEM-1

### INN371 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:** INN270 or INB270  
**Antirequisites:** INB371, INB372, TB702, ITB711, ITN711  
**Equivalents:** ITN702  
**Credit points:** 12  
**Contact hours:** 3 per week  
**Campus:** Gardens Point  
**Teaching period:** 2011 SEM-1

### INN372 AGILE SOFTWARE DEVELOPMENT

This unit examines the theory, techniques, and technologies associated with the specification, design, construction and testing of software systems. It integrates specialist knowledge from previous units to prepare you to become a professional software engineer. By the end of this unit, you will have a firm understanding of the principles of software development processes, and the detailed practices of a modern agile methodology. This will extend and refine your knowledge of the traditional software development lifecycle and testing, and putting your new knowledge into practice. You will work together in small teams of four to six people to build a project using an agile methodology and using test-driven development strategies. You will thus be well-prepared to become a member of a professional development team.

**Prerequisites:** INN370  
**Antirequisites:** INB372, ITB712, ITN662, ITN712, ITB612  
**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

### INN373 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:** INN271  
**Antirequisites:** INB373  
**Assumed knowledge:** INN271 is assumed knowledge.  
**Equivalents:** ITB716, ITN716  
**Credit points:** 12  
**Contact hours:** 3 per week  
**Campus:** Gardens Point  
**Teaching period:** 2011 SEM-2

**INN374 ENTERPRISE SOFTWARE ARCHITECTURE**

This unit introduces you to the field of enterprise and component-based architecture. It provides a grounding in the knowledge and skills required by a software architect to address the future needs of business IT systems. These include a solid understanding of the IT challenges currently facing medium to large organizations, the theory and technologies used to address them, and an appreciation of the business needs that motivate their use. To enable you to address these challenges you will be exposed to system design methods, and the current technologies, that allow the resulting systems to be adaptive to changing business needs.

**Prerequisites:** INN270, INB270, ITN700, or ITB003  
**Antirequisites:** INB374 and ITB717  
**Credit points:** 12  
**Contact hours:** 3 per week  
**Campus:** Gardens Point  
**Teaching period:** 2011 SEM-2

**INN381 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 or INN371) and (MAB281 or MAN281)  
**Antirequisites:** INB381, ITB441, ITB460, ITB648, ITB649, ITB746  
**Equivalents:** ITN440, ITN460, ITN746  
**Credit points:** 12  
**Contact hours:** 3 per week  
**Campus:** Gardens Point  
**Teaching period:** 2011 SEM-2

**INN382 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:** INN381 and MAB281  
**Antirequisites:** INB382  
**Equivalents:** ITN747  
**Credit points:** 12  
**Campus:** Gardens Point  
**Teaching period:** 2011 SEM-1

**INN385 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.

**Antirequisites:** INB385  
**Assumed knowledge:** INN271 is assumed knowledge. INN272 should be enrolled in the same teaching period.  
**Equivalents:** ITN257, ITB257  
**Credit points:** 12  
**Contact hours:** 3 per week  
**Campus:** Gardens Point  
**Teaching period:** 2011 SEM-1

**INN386 ADVANCED MULTIMEDIA SYSTEMS**

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

**Prerequisites:** INN385  
**Antirequisites:** INB386 and ITB259  
**Equivalents:** ITN259  
**Credit points:** 12  
**Contact hours:** 3 per week  
**Campus:** Gardens Point  
**Teaching period:** 2011 SEM-2

**INN500 PRINCE2 (R) PROJECT MANAGEMENT**

The majority of information technology (IT) initiatives, such as systems developments and implementations, are introduced into organizations through projects, and the
success of these projects depends on their effective management. This unit covers the integration of the multi-disciplinary skills that students would have acquired at stage in the course required to manage IT projects successfully. Specifically, it covers the administrative, technical, communication and socio-political demands placed on modern IT project managers. The unit covers practical, relevant and topical IT project management issues delivered through workshops and lectures.

**Prerequisites:** Completion of 36 credit points of Postgraduate units (INN% or PUN% or GSN%)

**Antirequisites:** INB123, ITB365, ITB272

**Equivalents:**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit points</th>
<th>Contact hours</th>
<th>Campus</th>
<th>Teaching period</th>
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<td>ITN272</td>
<td>12</td>
<td>4 per week</td>
<td>Gardens Point</td>
<td>2011 SEM-1 and 2011 SEM-2</td>
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**INN532 INFORMATION LITERACY EDUCATION**

This unit aims to develop your understanding of information literacy and information literacy education and how these concepts can be applied according to the needs of client group(s) of your choice. As a professional you may engage in policy development, advocacy, research, developing and implementing instruction programs or managing staff who undertake these activities. New professionals and other educators can become heavily involved in teaching information literacy and skills to learners in a range of environments including academic, workplace or community programs. This unit provides the opportunity for theoretical and practical work in contexts of your choice to suit your individual interests.

**Equivalents:**

| ITN279 | Credit points: 12 | Contact hours: 3 per week | Campus: Gardens Point | Teaching period: 2011 SEM-1 |

**INN533 INFORMATION ORGANISATION**

The aim of this unit is to develop an understanding of the principles and practices of information organisation as applied to description and classification of knowledge contained in a range of information resources utilised in different contexts.

**Equivalents:**

| ITN275 | Credit points: 12 | Contact hours: 3 per week | Campus: Gardens Point | Teaching period: 2011 SEM-2 |

**INN540 USER EXPERIENCE**

Understanding users and their experiences is a vital dimension of IT professionals’ competence and ethical awareness. People experience information and technology in a wide range of contexts, increasingly digital environments on a daily basis. Understanding people’s experience provides an important foundation for design and evaluation of a wide range of technologies and user contexts. This subject provides an opportunity for you to explore your own experience as user and also the experience of others. You will explore the experience of others, through engaging with them directly or via technology, and by engaging with a wide range of resources that inform us about users’ experiences. The aim of this unit is to introduce students to understanding and investigating users’ experiences in contexts that interest them, with particular emphasis on digital environments.

**Assumed knowledge:** 24 credit points of INN units

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

**INN550 COMPUTER FORENSICS**

This unit aims to give you instruction in the principles of Computer Forensics, and the principles that need to be...
observed by the computer forensic investigator in order to successfully identify, secure, analyse and present digital evidence. In this advanced level elective unit we focus on the principles which direct the collection, analysis and presentation of the electronic or digital evidence available to a forensic investigator, and the techniques that are used in order to ensure that those principles are met for evidentiary requirements.

Assumed knowledge: INN255 is assumed knowledge. INN250 and INN251 should be enrolled in the same teaching period. Equivalents: ITN774  Credit points: 12  Contact hours: 3 per week  Campus: Gardens Point  Teaching period: 2011 SEM-1

INN570 INTERNATIONALISATION OF SOFTWARE
Software is now a global market, and developers need to be able to produce applications that can be used in many different cultures and nations. There is a significant body of enabling technology that allows efficient and cost effective development of applications that can be used in diverse contexts. Understanding the principles and the technologies involved in internationalisation and localisation is essential for companies seeking to go global or that are already global.

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

INN600 ADVANCED READINGS 1
The aim of this unit is to broaden your understanding of potential research topics and methods and support you in developing essential skills that enable clarity and focus in investigating IT research; rigour in evaluating claims and accuracy in your understanding of domain problems, related theories and methodologies appropriate to your specialist area.

Assumed knowledge: Completion of at least 48 credit points of Postgraduate level IT units is assumed knowledge.  Credit points: 12  Campus: Gardens Point  Teaching period: 2011 SEM-1, 2011 SEM-2 and 2011 SUM

INN601 ADVANCED READINGS 2
The aim of this unit is to broaden your understanding of potential research topics and methods and support you in developing essential skills that enable clarity and focus in investigating IT research; rigour in evaluating claims and accuracy in your understanding of domain problems, related theories and methodologies appropriate to your specialist area.

Assumed knowledge: Completion of at least 48 credit points of Postgraduate level IT units is assumed knowledge.  Credit points: 12  Campus: Gardens Point  Teaching period: 2011 SEM-1, 2011 SEM-2 and 2011 SUM

INN602 ADVANCED READINGS 3
The aim of this unit is to broaden your understanding of potential research topics and methods and support you in developing essential skills that enable clarity and focus in investigating IT research; rigour in evaluating claims and accuracy in your understanding of domain problems, related theories and methodologies appropriate to your specialist area.

Assumed knowledge: Completion of at least 48 credit points of Postgraduate level IT units is assumed knowledge.  Credit points: 12  Campus: Gardens Point  Teaching period: 2011 SEM-1, 2011 SEM-2 and 2011 SUM

INN605 ADVANCED RESEARCH 1
The aim of this unit is to broaden your understanding of potential research topics and methods and support you in developing essential skills that enable clarity and focus in investigating IT research; rigour in evaluating claims and accuracy in your understanding of domain problems, related theories and methodologies appropriate to your specialist area.

Assumed knowledge: Completion of 48 credit points of Postgraduate IT units is assumed knowledge.  Credit points: 12  Campus: Gardens Point  Teaching period: 2011 SEM-1 and 2011 SEM-2

INN606 ADVANCED RESEARCH 2
The aim of this unit is to broaden your understanding of potential research topics and methods and support you in developing essential skills that enable clarity and focus in investigating IT research; rigour in evaluating claims and accuracy in your understanding of domain problems, related theories and methodologies appropriate to your specialist area.

Assumed knowledge: Completion of 48 credit points of Postgraduate IT units is assumed knowledge.  Credit points: 12  Campus: Gardens Point  Teaching period: 2011 SEM-1 and 2011 SEM-2

INN607 ADVANCED RESEARCH 3
The aim of this unit is to broaden your understanding of potential research topics and methods and support you in developing essential skills that enable clarity and focus in investigating IT research; rigour in evaluating claims and accuracy in your understanding of domain problems, related theories and methodologies appropriate to your specialist area.

Assumed knowledge: Completion of 48 credit points of Postgraduate IT units is assumed knowledge.  Credit
INN610 CASE STUDIES IN BUSINESS PROCESS MANAGEMENT
This unit seeks to develop business process analysts capable of working as consultants. It seeks to develop the generic skills expected in graduates and in particular to develop better interpersonal skills, better written and oral communication skills, skills in conflict resolution, negotiation, project planning and project management. You will learn to identify, analyse and consider interdependencies. You will increase your awareness for the challenges of teamwork. The projects also allow you to apply the theoretical knowledge gained in the pre-requisite unit to real practical problems. Overall, you will get insights into the skills, tools and services of consultants.

Prerequisites: INN320 or INN321 with a grade of 6 and a GPA of at least 6  Credit points: 12  Campus: Gardens Point  Teaching period: 2011 SEM-1 and 2011 SEM-2

INN632 PROFESSIONAL PRACTICE
This unit has been developed as an overarching unit in the IT70 Master of Information Management program, to establish meaningful links between the various units of study and to introduce you to contemporary professional practice in information agencies. The unit focuses on your own personal and professional development, enabling you to participate in industry seminars, fieldtrips, work placements and career mentoring. The development of your understanding of reflective practice will help you build your own Student ePortfolio to document your insights into and your experiences in the information profession. The unit is structured as a sequence of six modules, completed as you progress through the course.

Prerequisites: INN632-1  Equivalents: ITN280-3  Credit points: 2  Campus: Gardens Point  Teaching period: 2011 SEM-1, 2011 SEM-2 and 2011 SUM

INN632 PROFESSIONAL PRACTICE
This unit has been developed as an overarching unit in the IT70 Master of Information Management program, to establish meaningful links between the various units of study and to introduce you to contemporary professional practice in information agencies. The unit focuses on your own personal and professional development, enabling you to participate in industry seminars, fieldtrips, work placements and career mentoring. The development of your understanding of reflective practice will help you build your own Student ePortfolio to document your insights into and your experiences in the information profession. The unit is structured as a sequence of six modules, completed as you progress through the course.

Prerequisites: INN632-1  Equivalents: ITN280-5  Credit points: 2  Campus: Gardens Point  Teaching period: 2011 SEM-1, 2011 SEM-2 and 2011 SUM

INN632 PROFESSIONAL PRACTICE
This unit has been developed as an overarching unit in the IT70 Master of Information Management program, to establish meaningful links between the various units of study and to introduce you to contemporary professional practice in information agencies. The unit focuses on your own personal and professional development, enabling you to participate in industry seminars, fieldtrips, work placements and career mentoring. The development of your understanding of reflective practice will help you build your own Student ePortfolio to document your insights into and your experiences in the information profession. The unit is structured as a sequence of six modules, completed as you progress through the course.

Prerequisites: INN632-1  Equivalents: ITN280-2  Credit points: 2  Campus: Gardens Point  Teaching period: 2011 SEM-1, 2011 SEM-2 and 2011 SUM
INN632 PROFESSIONAL PRACTICE
This unit has been developed as an overarching unit in the IT70 Master of Information Management program, to establish meaningful links between the various units of study and to introduce you to contemporary professional practice in information agencies. The unit focuses on your own personal and professional development, enabling you to participate in industry seminars, fieldtrips, work placements and career mentoring. The development of your understanding of reflective practice will help you build your own Student ePortfolio to document your insights into and your experiences in the information profession. The unit is structured as a sequence of six modules, completed as you progress through the course.
Prerequisites: INN632-1    Equivalents: ITN280-6
Credit points: 2    Campus: Gardens Point    Teaching period: 2011 SEM-1, 2011 SEM-2 and 2011 SUM

INN650 ADVANCED NETWORK MANAGEMENT
Computer networks are an essential component of modern civilization. Students undertaking this unit will have previously learned the fundamental theory and practical aspects of network administration and management. This unit builds upon that foundation and extends the knowledge and skills to enterprise wide networks which are significantly more complex than small networks. Security of enterprise wide networks is an important issue in this unit, along with network management systems.
Prerequisites: INB351 or INN351    Assumed knowledge: INB351, INN351, ITN721 or ITB721 is assumed knowledge.
Equivalents: ITN771    Credit points: 12    Campus: Gardens Point    Teaching period: 2011 SEM-1

INN651 SECURITY TECHNOLOGIES
This unit aims to provide you with the knowledge to investigate and determine the security requirements for computer systems and networks and to understand the underlying issues and problems. In addition, this unit aims to enable you to investigate, evaluate and select the most appropriate security technologies for specific situations.
Prerequisites: ITB731, ITN731    Assumed knowledge: It is an advantage that the student has knowledge of the basic principles and technologies for information security, such as those taught in INN255 Security.
Credit points: 12    Campus: Gardens Point    Teaching period: 2011 SEM-2

INN652 ADVANCED CRYPTOLOGY
Cryptography forms a core discipline in the study of information security. This unit concentrates on the latest developments in cryptography. This is a specialised unit that prepares postgraduate students for research in cryptography.
The aim of the unit is to explore and understand recent developments in the theory and practice of cryptology. The unit provides fundamental knowledge for students seeking to undertake postgraduate research or work in the area of information security, especially involving cryptology.
Credit points: 24    Campus: Gardens Point    Teaching period: 2011 SEM-2

INN690 MINOR PROJECT 1
The aims of this unit are to help you acquire necessary skills in a problem domain, and to enable you to conduct a well-defined project with specific outcomes within a precisely defined project plan. This unit also teaches you how to prepare a well written project report.
Assumed knowledge: Completion of at least 48 credit points of Postgraduate level IT units is assumed knowledge.
Credit points: 12    Campus: Gardens Point    Teaching period: 2011 SEM-1, 2011 SEM-2 and 2011 SUM

INN691 MINOR PROJECT 2
The aims of this unit are to help you acquire necessary skills in a problem domain, and to enable you to conduct a well-defined project with specific outcomes within a precisely defined project plan. This unit also teaches you how to prepare a well written project report.
Assumed knowledge: Completion of at least 48 credit points of Postgraduate level IT units is assumed knowledge.
Credit points: 12    Campus: Gardens Point    Teaching period: 2011 SEM-1, 2011 SEM-2 and 2011 SUM

INN692 MINOR PROJECT 3
The aims of this unit are to help you acquire necessary skills in a problem domain, and to enable you to conduct a well-defined project with specific outcomes within a precisely defined project plan. This unit also teaches you how to prepare a well written project report.
Assumed knowledge: Completion of at least 48 credit points of Postgraduate level IT units is assumed knowledge.
Credit points: 12    Campus: Gardens Point    Teaching period: 2011 SEM-1, 2011 SEM-2 and 2011 SUM

INN693 PROJECT
The aims of this unit are to help you acquire necessary skills in a problem domain, and to enable you to conduct a well-defined project with specific outcomes within a precisely defined project plan. This unit also teaches you how to prepare a well written project report.
Assumed knowledge: Completion of at least 48 credit points of Postgraduate level IT units is assumed knowledge.
Credit points: 24    Campus: Gardens Point    Teaching period: 2011 SEM-1, 2011 SEM-2 and 2011 SUM
INN694 PROJECT 1
This unit enables you to carry out an independent or group project addressing a research question or practical problem in theoretical or practical information technology. It provides an opportunity to individualise your studies by concentrating on a specific problem. The aims of this unit are to help you acquire necessary skills in a problem domain, and to enable you to conduct a well-defined project with specific outcomes within a precisely defined project plan. This unit also teaches you how to prepare a well written project report.

Assumed knowledge: Completion of at least 48 credit points of Postgraduate level IT units is assumed knowledge. Students must enrol in INN694-2 to receive a result.

Other requisites: Students must complete INN694-2 to receive a grade for this unit

Credit points: 12
Campus: Gardens Point
Teaching period: 2011 SEM-1, 2011 SEM-2 and 2011 SUM

INN694 PROJECT
This unit enables you to carry out an independent or group project addressing a research question or practical problem in theoretical or practical information technology. It provides an opportunity to individualise your studies by concentrating on a specific problem. The aims of this unit are to help you acquire necessary skills in a problem domain, and to enable you to conduct a well-defined project with specific outcomes within a precisely defined project plan. This unit also teaches you how to prepare a well written project report.

Prerequisites: INN694-1
Assumed knowledge: Completion of at least 48 credit points of Postgraduate level IT units is assumed knowledge.

Credit points: 12
Campus: Gardens Point
Teaching period: 2011 SEM-1, 2011 SEM-2 and 2011 SUM

INN695 MAJOR PROJECT
The aims of this unit are to help you acquire necessary skills in a problem domain, and to enable you to conduct a well-defined project with specific outcomes within a precisely defined project plan. This unit also teaches you how to prepare a well written project report.

Assumed knowledge: Completion of at least 48 credit points of Postgraduate level IT units is assumed knowledge.

Credit points: 48
Campus: Gardens Point
Teaching period: 2011 SEM-1, 2011 SEM-2 and 2011 SUM

INN696 MAJOR PROJECT 2
The aims of this unit are to help you acquire necessary skills in a problem domain, and to enable you to conduct a well-defined project with specific outcomes within a precisely defined project plan. This unit also teaches you how to prepare a well written project report.

Prerequisites: INN696-1
Assumed knowledge: Completion of at least 48 credit points of Postgraduate level IT units is assumed knowledge

Credit points: 24
Campus: Gardens Point
Teaching period: 2011 SEM-1, 2011 SEM-2 and 2011 SUM

INN696 MAJOR PROJECT 1
The aims of this unit are to help you acquire necessary skills in a problem domain, and to enable you to conduct a well-defined project with specific outcomes within a precisely defined project plan. This unit also teaches you how to prepare a well written project report.

Assumed knowledge: Completion of at least 48 credit points of Postgraduate level IT units is assumed knowledge. Students must enrol in INN696-2 to receive a result.

Other requisites: Students must complete INN696-2 to receive a grade for this unit

Credit points: 24
Campus: Gardens Point
Teaching period: 2011 SEM-1, 2011 SEM-2 and 2011 SUM

INN700 INTRODUCTION TO RESEARCH
This unit is aimed at students undertaking a major research project (see corequisites above). In order to pursue such a project, you must have some insight into the range of possible approaches to research available. Before commencing the research proper, it is necessary to review related literature in depth and prepare a detailed proposal outlining the research question, design and project plan. Quality control and good project management must be exercised throughout the research project. Main items of assessment pertain to each student's unique, research project being pursued in parallel. This unit aims to give you insight into the range of possible approaches to research, to develop the skills needed to prepare your literature review and research proposal and to assist you in planning and managing time and resources.

Assumed knowledge: Must be con-currently enrolled in either full-time or part-time Higher Research Degree (i.e. PhD, ProDoc, Research Masters, or Honours) or, if coursework masters then a 48cp research project. In all instances, must have a formal Principle Supervisor

Equivalents: ITN100
Other requisites: Unit Coordinator Approval and a course GPA of at least 5.5 is required to enrol.

Credit points: 12
Campus: Gardens Point
Teaching period: 2011 SEM-1 and 2011 SUM

INN701 ADVANCED RESEARCH TOPICS
All research students need an appreciation of a wide variety of potential approaches to conducting research and an understanding of the key issues that bear on such approaches. INN701 is an advanced unit aimed at research students who are soon to complete a detailed, rigorous and defensible design of their intended research project (e.g. Stage 2). Research students, coursework masters students and honours students intending undertaking a major
research project should pursue INN701 either subsequent to, or in parallel with INN700.

**Prerequisites:** INN700 which can be studied in the same teaching period as INN701  
**Assumed knowledge:** INN700 may be waived for invited, advanced, high-performing undergrads  
**Equivalents:** ITN269  
**Other requisites:** GPA of at least 5.5 is required to enrol  
**Credit points:** 12  
**Campus:** Gardens Point  
**Teaching period:** 2011 SEM-1 and 2011 SEM-2

**INS040 PROFESSIONAL EXPERIENCE (POSTGRADUATE)**  
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.

**Antirequisites:** INS352  
**Equivalents:** ITS703  
**Credit points:** 12  
**Contact hours:** 3 per week  
**Campus:** Gardens Point

**INS452 CCNP1: BUILDING SCALABLE INTERNETWORKS**  
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:** INS350  
**Equivalents:** ITS701, ITS601, ITB011, ITN011  
**Credit points:** 12  
**Campus:** Gardens Point  
**Teaching period:** 2011 SEM-1 and 2011 SEM-2

**INS451 CCNA 3 AND 4 LAN SWITCHING**  
This unit provides you with generic solutions and implementation considerations to address those challenges. Students will learn about PSTN, Voice over IP network architecture, Voice over IP system components, features, and Quality of Service (QoS) technologies. In particular this unit focuses on developing understanding on the latest VoIP technologies and skills to build VoIP network for campus networking environment. The aim of this unit is to prepare students for the topics covered in CISCO CCNA Voice Exam (640-460 IIC Implementing Cisco IOS Unified Communications OR 642-436 CVOICE 6.0 Cisco Voice

**Prerequisites:** INS450 which can be studied in the same teaching period as INS451  
**Antirequisites:** INS351  
**Credit points:** 12  
**Contact hours:** 3 per week  
**Campus:** Gardens Point  
**Teaching period:** 2011 SEM-1 and 2011 SEM-2

**INS454 CCNP3: BUILDING MULTI LAYERED SWITCHED NETWORKS**  
This unit provides professional knowledge and skills focusing on securing LANs and WANs environment.

**Antirequisites:** INS354  
**Credit points:** 12  
**Contact hours:** 3 per week  
**Campus:** Gardens Point

**INS455 CCNP4: 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:** INS454  
**Antirequisites:** INS355  
**Credit points:** 12  
**Contact hours:** 3 per week  
**Campus:** Gardens Point

**INS456 VOICE OVER IP 1**  
This unit provides internet technology skills for converged voice and data networks as well as the challenges faced by its various technologies. This unit presents generic solutions and implementation considerations to address those challenges. Students will learn about PSTN, Voice over IP network architecture, Voice over IP system components, features, and Quality of Service (QoS) technologies. In particular this unit focuses on developing understanding on the latest VoIP technologies and skills to build VoIP network for campus networking environment. The aim of this unit is to prepare students for the topics covered in CISCO CCNA Voice Exam (640-460 IIC Implementing Cisco IOS Unified Communications OR 642-436 CVOICE 6.0 Cisco Voice

**Prerequisites:** INS450  
**Antirequisites:** INS356  
**Equivalents:** ITS703  
**Credit points:** 12

**INS457 CISCO VOIP**  
This unit presents generic solutions and implementation considerations to address those challenges. Students will learn about PSTN, Voice over IP network architecture, Voice over IP system components, features, and Quality of Service (QoS) technologies. In particular this unit focuses on developing understanding on the latest VoIP technologies and skills to build VoIP network for campus networking environment. The aim of this unit is to prepare students for the topics covered in CISCO CCNA Voice Exam (640-460 IIC Implementing Cisco IOS Unified Communications OR 642-436 CVOICE 6.0 Cisco Voice

**Prerequisites:** INS450  
**Antirequisites:** INS356  
**Equivalents:** ITS703  
**Credit points:** 12
Over IP). This unit aims to build important knowledge and skills necessary to build the VoIP integrated campus network.

**Prerequisites:** INS450  
**Antirequisites:** INS357  
**Equivalents:** INS350  
**Credit points:** 12  
**Campus:** Gardens Point  
**Teaching period:** 2011 SEM-2