

# postgraduate

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SWINBURNE  
UNIVERSITY OF  
TECHNOLOGY

Postgraduate courses in  
**Information Technology**



Today, more than ever before, organisations are reliant on information technology for the conduct of their business.

Information Technologies offer tremendous opportunity to enhance business effectiveness and efficiency.

Swinburne's postgraduate IT programs have been designed to support those whose ambition is to assume senior technical or management roles in organisations. These programs aim to provide the knowledge and skills required to ensure that graduates can design, develop and maintain complex systems using state-of-the-art technologies and methodologies.

# Information Technology

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# Graduate Certificate

## Graduate Certificate of Information Technology

### Program overview

The Graduate Certificate of Information Technology provides a practical introduction to students who have no formal qualification but have significant relevant experience in the IT industry.

Alternatively, working professionals and continuing students who have already completed a bachelor degree in IT are able to supplement their existing knowledge with postgraduate coursework in a focused discipline.

A wide range of electives are available for students adding to existing qualifications or wishing to continue on to the Graduate Diploma of Information Technology.

The program aims to:

- ▶ Provide an introduction to IT for those without qualifications or experience
- ▶ Deliver a program that complements and builds on previous studies or experiences
- ▶ Allow for articulation into the Graduate Diploma of Information Technology, Master of Information Technology, and the Master of Technology (Information Technology)

Swinburne's program also offers a range of features, including:

- ▶ The option for students to study between one and four units per semester
- ▶ Full-time or part-time delivery
- ▶ A student may elect to study any four of Swinburne's postgraduate IT units, subject to timetabling and prerequisite requirements. However, those students continuing on to the Graduate Diploma of Information Technology should tailor their choices accordingly
- ▶ Students who have already studied IT at tertiary level may be eligible to select units from Swinburne's Master of Information Technology program with the purpose of augmenting their previous knowledge at an advanced level
- ▶ Course content designed to meet the needs of employers and industry demand
- ▶ Highly interactive and dynamic classes, delivered by experienced practitioners and academics

### Location

Hawthorn campus

### Program length

The program takes six months full-time or equivalent part-time to complete. Entry is possible in both semester one (February) and semester two (July).

### Admission requirements

A degree in any discipline from a recognised tertiary institution or approved equivalent **OR** four years of relevant work experience.

### Program structure

The graduate certificate involves the completion of four units of study to the value of 50 credit points. Subject to timetabling and prerequisite requirements, students may choose from any of Swinburne's postgraduate IT units. If considering articulation into the graduate diploma, students should ensure that they select units that will meet these requirements.

Please see below for a number of our graduate certificate groups:

### Introductory group

This is a typical introductory group for students with no formal qualifications or experience.

- HIT5404 Introduction to Programming in .NET
- HIT5091 Web Development
- HIT6402 Database Analysis and Design
- HIT6405 Requirements Analysis and Modelling (Prerequisite: HIT6402)

### Practical Software Engineering

Software engineers must continually strive to acquire new skills in conjunction with the rapid changes in computer technology. This group offers advanced studies in software process, quality and reliable software systems.

- HIT8066 Software Tools
- HIT8156 Software Process Improvement (Prerequisite: HIT8159)
- HIT8159 Software Quality Management
- HIT8166 Software Testing Processes and Automation

# Graduate Certificate

## **.NET Development**

This group is tailored to those seeking advanced .NET programming experience.

- HIT8304 Database Programming
- HIT8099 Enterprise .NET (Prerequisite: HIT8304)
- HIT8197 Advanced .NET Programming
- HIT8098 Agile Development Project

## **Networking**

This group provides advanced studies in network administration and management including CISCO CCNA and Microsoft MCSE.

- HET706 Networks and Routing
- HET708 Internetworking Technology
- HET710 Network Administration
- HET712 Enterprise Networking

## **Web development**

Developing an in-depth understanding of web development, this sequence also looks at usability and Internet technologies.

- HIT6323 Web Programming
- HIT6307 Internet Technologies
- HIT6316 Usability
- HIT8324 Web Application Development (Prerequisites: HIT6323, HIT6307)

## **Business Analysis**

This group provides advanced studies in the provision of IS services, and the management of information systems in organisations.

- HIT7406 Enterprise Systems
- HIT8409 Process Modelling (Prerequisite: HIT6405)
- HIT7412 Business Information Systems Analysis (Prerequisite: HIT6405)
- HIT8413 Business Intelligence (Prerequisite: HIT7406)

## **Database**

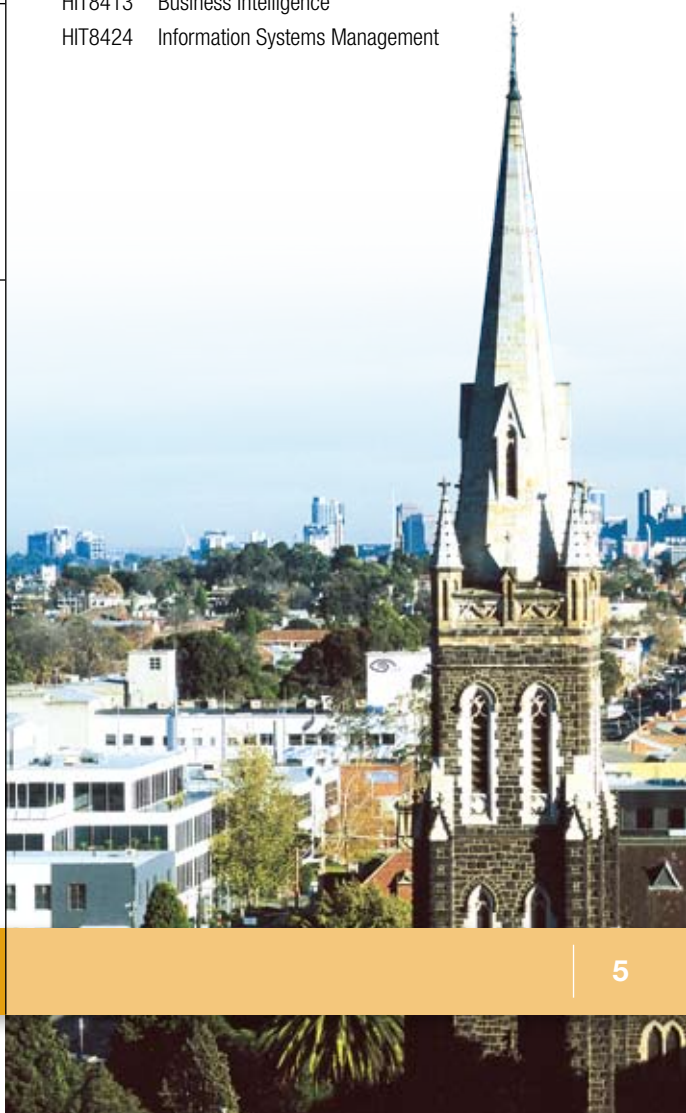
Providing advanced studies in database design, this sequence looks at implementation and management using Oracle.

- HIT6402 Database Analysis and Design
- HIT7420 Database Management Systems (Prerequisite: HIT6402)
- HIT7421 Database Implementation (Prerequisite: HIT7420)
- HIT8422 Database Performance Issues (Prerequisite: HIT7420)

## **IS Management**

This group provides a sound background in IS acquisition, security and management practices in organisations.

- HIT8408 Information Systems Risk and Security
- HIT8410 Systems Acquisition and Implementation Management
- HIT8413 Business Intelligence
- HIT8424 Information Systems Management



# Graduate Diploma

## Graduate Diploma of Information Technology

### Program overview

The Graduate Diploma of Information Technology provides the skills and knowledge to allow graduates to begin or progress in careers such as: software developer, web programmer, database developer or business analyst.

The program covers the important areas of programming, database, data communications, requirements analysis and the Internet.

The graduate diploma is particularly suited to graduates in disciplines such as business, arts, sciences and engineering, who wish to add IT to their skills. The program offers a general introduction to IT with an emphasis on web applications development or business information systems. Students study six mandatory skills areas which cover the core body of knowledge for an IT professional – introductory IT, programming, database, internet technologies, project management, and information analysis. Two electives are also chosen, allowing students to gain specialist skills in areas of interest.

The program has a number of features including:

- ▶ The option for students to undertake between one and four units per semester
- ▶ The choice between full-time and part-time study
- ▶ Students may exit the program after four units with the award of Graduate Certificate of Information Technology
- ▶ Course content designed to meet the needs of employers and industry demand
- ▶ Highly interactive and dynamic classes, delivered by experienced practitioners and academics
- ▶ Accreditation at associate level with the Australian Computer Society (ACS)

### Location

Hawthorn campus

### Program length

The program takes one year full-time or equivalent part-time to complete. Entry is possible in both semester one (February) and semester two (July).

### Admission requirements

A degree in any discipline from a recognised tertiary institution or approved equivalent **OR**

Applicants who do not hold a degree but have at least four years of relevant industry experience or who have undertaken appropriate training courses may enter the graduate diploma by first enrolling in the Graduate Certificate of Information Technology.

Of the eight units in the program, students may be granted up to a maximum of two unit exemptions on the basis of previous studies or prior knowledge.

### Program structure

The graduate diploma involves the completion of eight units of study to the value of 100 credit points. Students must undertake six core units and two electives from those listed below.

Students planning to progress on to the Master of Information Technology should ensure that their elective choices meet the prerequisites of desired master level units.

### Units of study

#### Core units

- HIT5301 Algorithmic Problem Solving **OR**
- HIT5404 Introduction to Programming in .NET
- HIT5401 Introduction to Business Information Systems **OR**
- HIT6322 Enterprise Technologies and Architectures
- HIT6037 Software Development in Java
- HIT6307 Internet Technologies
- HIT6402 Database Analysis and Design
- HIT6405 Requirements, Analysis and Modelling
- HIT7407 Information Systems Project Management

#### Elective units

- HET706 Networks and Routing
- HET710 Networks Administration
- HIT6316 Usability
- HIT6323 Web Programming
- HIT7406 Enterprise Systems
- HIT7412 Business Information Systems Analysis
- HIT7420 Database Management Systems
- HIT7421 Database Implementation (summer semester only)
- HIT7425 Business Systems Programming in .NET

# Master programs

## Master of Technology (Information Technology)

### Program overview

The Master of Technology (Information Technology) provides a comprehensive postgraduate education in information technology targeted towards those who wish to add IT skills to their existing qualification or work experience.

This program aims to suit the needs of students who have completed degree studies in any discipline and wish to develop fundamental IT knowledge together with focused advanced knowledge.

Swinburne's program has a number of features, including:

- ▶ Equipping students with the tools to enter a range of technical and business focused IT careers
- ▶ The option to undertake between one and four units per semester
- ▶ Content designed in consultation with industry to meet the needs of employers and market demand
- ▶ Full-time and part-time delivery
- ▶ Flexible entry and exit points
- ▶ Small, highly interactive and dynamic classes, delivered by commercially experienced practitioners and academics
- ▶ Accreditation at Professional Level with the Australian Computer Society (ACS)

### Location

Hawthorn campus

### Program length

The program takes one and a half years full-time or equivalent part-time to complete. Entry is possible in both semester one (February) and semester two (July).

### Admission requirements

A degree or graduate diploma in any discipline from a recognised tertiary institution or approved equivalent. Students transferring from incomplete masters courses commenced elsewhere may be eligible for some credit.

### Program structure

In order to gain the Master of Technology (Information Technology) students must successfully complete 12 units of study to the value of 150 credit points. In addition to the requirements of the Graduate Diploma of Information Technology, students must undertake the unit, HIT8044 Professional Issues in Information Technology, one additional core unit from level three and two additional electives from level three. These units are listed on pages 9–10 of this publication.

Students also have the option of exiting the program after 50 credit points to obtain the Graduate Certificate of Information Technology, or 100 credit points to obtain the Graduate Diploma of Information Technology.



### Ankit Vyas

#### Master of Information Technology

I am currently studying Swinburne's Master of Information Technology and have developed a strong interest in software development and web design. The course has been rewarding and delivers a great mix of practical and theoretical studies.”

# Master programs

## Master of Information Technology

### Program overview

The Master of Information Technology (MIT) program provides a wide scope for IT specialists or recent graduates wishing to optimise their career path. Students may choose a general program of study or alternatively undertake a specialisation preparing graduates for focused career opportunities.

Currently the MIT offers units in a broad range of areas including Internet computing, advanced Java and J2EE, reliable software systems, information systems modelling and development, enterprise and systems architecture, eCommerce systems, network design and security, information systems management, human-computer interaction, .NET technology, computer networks, object oriented software development and service oriented computing. Students also have the opportunity to undertake a research project.

The program provides students with a broad range of studies enabling selection of units across a wide spectrum of disciplines. Specialisation opportunities include: Reliable Software Systems, Web Application Development, Information Systems and Network Design and Security. Each area provides students with the ability to consolidate their skills and adapt to change in the work place.

Swinburne's program has a range of features including:

- ▶ Equipping students with the tools to enter a range of technical and business focused IT careers
- ▶ Full-time and part-time delivery
- ▶ Course content designed in consultation with industry to meet the needs of employers and market demand
- ▶ Students may exit with the Graduate Certificate of Information Technology after completion of four units and the Graduate Diploma of Information Technology after completion of eight units
- ▶ Highly interactive and dynamic classes, delivered by experienced practitioners and academics
- ▶ Accreditation at the Professional Level with the Australian Computer Society (ACS)

### Location

Hawthorn campus

### Program length

The MIT is part of a nested suite of programs, which also includes the Graduate Certificate of Information Technology and Graduate Diploma of Information Technology. Completion of the entire program requires 16 units of study (200 cp).

Students who have a degree or graduate diploma in a relevant IT discipline will generally be granted eight exemptions and will be required to complete only eight units of study (100 cp) in one year full-time or equivalent part-time.

Entry is possible in both semester one (February) and semester two (July).

### Admission requirements

A degree or a graduate diploma in a relevant IT discipline from a recognised tertiary institution or approved equivalent. Students transferring from incomplete masters courses commenced elsewhere may be eligible for credit.

### Program structure

The Master of Information Technology consists of 16 units of study (200 credit points).

The initial eight units of study (100 credit points) requires completion of the Graduate Diploma of Information Technology program as outlined on page 6 of this brochure. Students with a degree or graduate diploma in a relevant IT discipline may be granted up to eight exemptions and will be required to complete only the final 100 credit points of the program.

The final eight units of study (100 credit points) comprise two core units of study and six electives of which at least four must be advanced level 3 units. Available units are listed on pages 9–10 of this publication. Units involved in available specialisations are listed on pages 10–11 of this publication.

Students who are able to present evidence of their capacity to do research may wish to undertake research units. Students who are approved to do so, may only undertake one of the research units on offer. These are:

- ▶ HIT8067 Minor Thesis
- ▶ HIT8069 Research Paper
- ▶ HIT8070 Research Report
- ▶ HIT9010 Research Methods

HIT8070 is worth 25 credit points (equivalent to two standard units) and HIT8067 is worth 50 credit points (equivalent to four standard units).

# Master programs

## Units of study

### Level two units

HIT6037	Software Development in Java
HIT6302	Object-Oriented Programming
HIT6316	Usability
HIT6322	Enterprise Technologies and Architectures
HIT6323	Web Programming
HIT6405	Requirements, Analysis and Modelling
HIT7037	Programming in Java
HIT7406	Enterprise Systems
HIT7407	Information Systems Project Management
HIT7412	Business Information Systems Analysis
HIT7420	Database Management Systems
HIT7421	Database Implementation
HET706	Networks and Routing
HET710	Network Administration

### Level three – core units

HIT8044	Professional Issues in Information Technology
HIT8071	Professional Project, <b>OR</b>
HIT8098	Agile Development Project, <b>OR</b>
HIT8427	Configuring Business Information Systems Solutions, <b>OR</b>
HIT9326	Internship Project

### Level three – elective units

HET708	Internetworking Technologies
HET712	Enterprise Networking
HIT7462	Contemporary Issues in Business Analysis *
HIT8023	Human Computer Interaction
HIT8057	Software Testing and Reliability
HIT8060	Systems Project Management *
HIT8066	Software Tools
HIT8078	Knowledge Management
HIT8087	Advanced Java
HIT8099	Enterprise .NET
HIT8119	Enterprise Java
HIT8121	Internet Security
HIT8156	Software Process Improvement
HIT8159	Software Quality Management
HIT8164	Internet Networking Infrastructure
HIT8166	Software Testing Processes and Automation



# Master programs

HIT8186	IS Governance and Strategy *
HIT8197	Advanced .NET Programming
HIT8243	Games Programming
HIT8303	Data Structures and Patterns
HIT8304	Database Programming
HIT8324	Web Application Development
HIT8325	Web Application Architectures
HIT8408	Information Systems Risk and Security
HIT8409	Process Modelling
HIT8410	Systems Acquisition and Implementation Management
HIT8413	Business Intelligence
HIT8419	Decision Analysis Systems
HIT8422	Database Performance Issues
HIT8423	Enterprise Systems Management
HIT8424	Information Systems Management
HIT8426	Enterprise Systems Implementation
HIT8463	Managing the IT Capability *
HIT8464	Delivering IT Business Value *
HIT8465	Managing IT-Enabled Transformation *
HIT9466	Advanced Topics in Information Systems Management *

\* These units are available to students who have at least 2 years relevant industry experience and with approval of the program coordinator.

## Specialisations

### Reliable Software Systems

The Reliable Software Systems specialisation offers a course of study focusing on the development of practical skills and theoretical knowledge in software engineering and software validation and verification. It focuses on methodologies, tools, techniques and management principles necessary to support the effective and efficient development of high quality software.

### Level two unit

HIT7407 IS Project Management

### Level three units

HIT8023	Human-Computer Interaction
HIT8057	Software Testing and Reliability
HIT8060	Systems Project Management (alternative to HIT7407 Information Systems Project Management)
HIT8066	Software Tools
HIT8156	Software Process Improvement
HIT8159	Software Quality Management (compulsory)
HIT8166	Software Testing Processes and Automation

### Web Application Development

Web applications powered by embedded web servers have become commonplace in organisations. This specialisation deals with emerging technologies such as Service Oriented Architectures, Web Services and Enterprise Computing, including J2EE and .NET.

### Level two units

HIT6302	Object-Oriented Programming <b>OR</b>
HIT6037	Software Development in Java <b>OR</b>
HIT7037	Programming in Java
HIT6316	Usability
HIT6322	Enterprise Technologies and Architectures
HIT6323	Web Programming

### Level three units

HIT8087	Advanced Java
HIT8099	Enterprise .NET
HIT8119	Enterprise Java
HIT8121	Internet Security
HIT8197	Advanced .NET Programming
HIT8303	Data Structures and Patterns
HIT8304	Database Programming
HIT8324	Web Application Development
HIT8325	Web Application Architectures

# Master programs

## Information Systems

The Information Systems specialisation offers a course of study focusing on business analysis, information modelling, database design and information systems management.

### Level two units

- HIT6405 Requirements, Analysis and Modelling
- HIT7406 Enterprise Systems
- HIT7407 Information Systems Project Management
- HIT7412 Business Information Systems Analysis
- HIT7420 Database Management Systems
- HIT7421 Database Implementation

### Level three units

- HIT7462 Contemporary Issues in Business Analysis\*
- HIT8078 Knowledge Management
- HIT8186 IS Governance and Strategy\*
- HIT8408 Information Systems Risk and Security
- HIT8409 Process Modelling
- HIT8410 Systems Acquisition and Implementation Management
- HIT8413 Business Intelligence
- HIT8419 Decision Analysis Systems
- HIT8422 Database Performance Issues
- HIT8423 Enterprise Systems Management
- HIT8424 Information Systems Management
- HIT8426 Enterprise Systems Implementation
- HIT8427 Configuring Business Information Systems Solutions
- HIT8463 Managing the IT Capability\*
- HIT8464 Delivering IT Business Value\*
- HIT8465 Managing IT-Enabled Transformation\*
- HIT9466 Advanced Topics in Information Systems Management\*

*\* These units are available to students who have at least 2 years relevant industry experience and with approval of the program coordinator.*



**Racha Haddara**  
**Master of Information  
Technology**



I chose Swinburne's MIT after completing a Bachelor of Science (Computer Science). I have enjoyed the wide range of units in the program and am tailoring my postgraduate studies for work as an IT business analyst after graduation. Swinburne offered me generous credit exemption for previous studies and I have particularly enjoyed the mix of practical and theory based study with the MIT program."

## Network Design and Security

The specialisation focuses on the skills required for graduates preparing to work as network systems specialists. Units provide coverage of general networking principles with specific competencies including certification material from Cisco CCNA and CCNP, and Microsoft MCSE (Certification exams are not part of this course).

### Level two units

- HET706 Networks and Routing
- HET710 Network Administration

### Level three units

- HET708 Internetworking Technologies
- HET712 Enterprise Networking
- HIT8121 Internet Security
- HIT8164 Internet Networking Infrastructure
- HIT8408 Information Systems Risk and Security

## Master of Technology (Information Technology) and Master of Information Technology unit of study outlines

### Level two units

#### **HIT5401 Introduction to Business Information Systems**

This introductory unit identifies the role, purpose and contribution of information systems to modern organisations operating in business environments characterised by uncertainty, complexity and turbulence.

#### **HIT6037 Software Development in Java**

This unit introduces object-oriented development in Java. It assumes previous programming study.

#### **HIT6302 Object-Oriented Programming**

Students will produce a software solution using object oriented design principles and will be able to use advanced programming constructs to solve larger programming problems, including: encapsulation, inheritance, polymorphism and exceptions.

#### **HIT6316 Usability**

This unit covers the nature of human computer Interaction. Models of human behaviour: attention, memory, perception, communication and thinking will be covered in relation to user-centred principles in the software development process.

#### **HIT6322 Enterprise Technologies and Architectures**

This unit introduces enterprise technologies and their application to desktop, server and enterprise grade hardware. Other areas that will be covered include workstation and server operating systems, data organisation and web servers.

#### **HIT6323 Web Programming**

Students who successfully complete this unit will understand server-side development techniques, the technologies and techniques associated with web applications and be able to develop simple web applications that interact with databases.

#### **HIT6405 Requirements, Analysis and Modelling**

Students who successfully complete this unit will be able to apply analysis, modelling and design techniques in the context of solving practical problems. The unit will discuss alternative models and solutions to solve business information problems.



# Units of study

## **HIT7037 Programming in Java**

This unit provides an introduction to the facilities provided by the Java programming language and the core libraries. It assumes previous object-oriented programming in C++.

## **HIT7406 Enterprise Systems**

Through case studies students will examine the motivation, development and implications of Enterprise Systems in organisations.

## **HIT7407 Information Systems Project Management**

This unit is an introduction to IS project management, project life cycle and software process models. Areas covered include project time management and scheduling, project cost estimation, project quality management and project tracking and monitoring.

## **HIT7412 Business Information Systems Analysis**

This unit covers the nature of information systems and the requirements for analysis and problem solving. Business information systems analysis and understanding of some of the contemporary information systems problem solving methodologies and their applications will be covered in the unit.

## **HIT7420 Database Management Systems**

Focusing on different database models and their design and application, in this unit students will compare architecture and capabilities with a modern Relational Database Management System (DBMS).

## **HIT7421 Database Implementation**

Focusing on multi-tier database architecture in the context of an organisational environment, this unit will cover techniques and facilities such as stored procedures, database triggers and cursors.

## **HET706 Networks and Routing**

The unit covers the techniques and technologies of modern Internet Protocol (IP) based LAN and computer communications.

## **HET710 Network Administration**

This unit is designed to introduce administration issues in an information systems environment. Areas covered include: network planning, installation, user and domain management, system performance monitoring and tuning, security, intranet/Internet connectivity and hardware considerations.

## **Level three units – core**

### **HIT8044 Professional Issues in Information Technology**

This unit introduces the roles and responsibilities of IT professionals in organisations and society. It includes an appreciation of ethics, the impacts of business compliance imperatives and an overview of industry structures and key drivers and trends within the IT industry.

### **HIT8071 Professional Project**

This unit involves students in a team project for an industry client. It includes lectures and tutorials to extend prior knowledge of teamwork and project processes.

### **HIT8098 Agile Development Project**

This unit looks at the development of software systems within a changing environment. It examines approaches such as extreme Programming (XP) and SCRUM. Students will participate in a development project using one of these methods.

### **HIT8427 Configuring Business Information Systems Solutions**

Working within project teams students specify business and information requirements for package software solutions, select appropriate tools and techniques and configure package solutions to meet business requirements.

### **HIT9326 Internship Project**

Students will undertake a project two days per week in a workplace under the supervision of an academic staff member. The project may involve system design and development, research and development projects, business analysis, testing, user liaison. Places are competitive and are intended for International students.

## **Level three units – electives**

### **HET708 Internetworking Technologies**

This unit covers CISCO switches, improving network performance and security and performing entry level tasks in the planning, design, installation, operation and troubleshooting of Ethernet and TCP/IP Networks.

### **HET712 Enterprise Networking**

Students are introduced to Windows Server 2003 Network Infrastructure Planning, Tools, and Documentation.

### **HIT7462 Contemporary Issues in Business Analysis**

Upon completion, students will understand the nature and characteristics of business problems, systems and the tools techniques and skills for business and information analysis. Students will identify and appreciate contemporary issues and problems associated with information requirements analysis in an organisational context.

### **HIT8023 Human Computer Interaction**

Concentrating on the design of highly useable interactive systems, this unit covers usability testing and evaluation, user modelling and profiling, participative design techniques and visual interface design.

### **HIT8057 Software Testing and Reliability**

This unit aims to provide students with the concepts and methodologies of software testing and reliability. Key areas covered include selection of test cases, program instrumentation, data flow analysis, domain testing strategy, mutation analysis, basics of reliability theory and reliability modelling.

### **HIT8060 Systems Project Management\***

This unit covers project management and its importance to improving the success of information technology projects. Project management terms and techniques are covered including: the constraints of project management; and project management knowledge areas and process groups, as specified in the Project Management Body of Knowledge (PMBOK).

### **HIT8066 Software Tools**

The aim of this unit is to examine theoretical and practical issues relating to the use of tools in software development. It includes practical experience with tools for analysis and design, automated testing tools, configuration management tools and performance testing and analysis tools.

### **HIT8067 Minor Thesis – 50 cp**

Students will work on an approved project under staff supervision. Projects will require a literature survey and a theoretical or experimental investigation. A preliminary proposal of the project to be undertaken must be submitted for approval by the Program Manager and it is expected that topics will be related to the current research interests of staff.

### **HIT8069 Research Paper – 12.5 cp**

This unit requires research into a topic that is relevant to the course but alternative to the prescribed units in Stage 2. Students will prepare a 5,000 word article on their chosen topic.

### **HIT8070 Research Report – 25 cp**

This unit requires research into a topic that is relevant to the course but alternative to the prescribed units in Stage 2. Students will prepare a 8,000-word article on their chosen topic.

### **HIT8078 Knowledge Management**

Students in this unit will look at the nature of knowledge, knowledge creation and organisational context and the contribution of IT to knowledge management practice.

### **HIT8086 Information Systems Governance and Strategy\***

Covering the foundations of strategic information systems planning, the unit addresses how best to deliver value from IS/IT investments in relation to business objectives and organisational strategies. Students gain an understanding of the framework of IS governance, governance principles and practices, and its contribution to the delivery of value from IS/IT investments.

### **HIT8087 Advanced Java**

The aims of this unit are to extend skills and understanding in the Java language especially in the area of its underlying architecture, performance and human computer interface. Topics covered include the JVM, performance, threads, Swing and the Graphics 2D class libraries.

### **HIT8099 Enterprise .NET**

This unit covers the development of distributed enterprise systems within the .NET framework. It involves the use of .NET technologies and architectural and security issues.

### **HIT8119 Enterprise Java**

This unit focuses on the skills and understanding required to build secure, N-Tier web-based systems using J2EE including RMI, JDBC, EJB, Java Server Pages and Java Servlets.

### **HIT8121 Internet Security**

This unit examines Internet security from both a management and technical perspective. Technically, the broad range of security technologies are investigated with specific examples from a range of web sites and software. There will be some practical work with security and monitoring tools.

# Units of study

## **HIT8156 Software Process Improvement**

Looking at technical and organisational processes necessary to develop or acquire high-quality software-based systems, this unit covers the Software Engineering Institute's CMMI, ISO 15504 (SPICE) and contemporary 'agile' methods.

## **HIT8159 Software Quality Management**

Developing high quality software requires close attention to the process used. In this unit key areas of the software process are studied in detail, for example software quality assurance, software process improvement and metrics.

## **HIT8164 Internet Networking Infrastructure**

In this unit MAN and WAN technologies currently in use such as DQDB, FDDI and SDH/SONET are reviewed and the protocols of the Internet are studied in detail. Emphasis is placed on TCP/IP protocol suite, routing in the Internet, RIP and OSPF, Internet multicasting, DNS, Internet security and firewall design. New developments such as IP over ATM and next generation Internet are also covered.



**Gregorius Lesmana**

**Master of Information Technology**

I initially commenced a Bachelor of Science (Information Technology) and on completion began Swinburne's Master of Information Technology (MIT). I am undertaking the Network, Design and Security specialisation in the MIT and have enjoyed being able to tailor my studies by selecting my own units. I am currently preparing to sit for the CCNA Certification and will look for a position as a network engineer following my graduation. I would recommend Swinburne to future students"

## **HIT8166 Software Testing Processes and Automation**

Students in this unit will gain an understanding of the features and application of commercial testing tools.

## **HIT8197 Advanced .NET Programming**

This unit investigates the implementation of applications using VB.NET and the C# programming language. It focuses on advanced programming concepts such as multi-threaded applications, delegates, events, custom controls, GDI+, cryptography, and other .NET framework elements.

## **HIT8243 Games Programming**

This unit aims to introduce the implementation of high performance 2D and 3D programming and games software platforms.

## **HIT8303 Data Structures and Patterns**

This unit is concerned with with the design, implementation and application of data structures as a means for algorithmic problem solving. It includes analysis of the impact of algorithms and data structures on performance and common patterns.

## **HIT8304 Database Programming**

This unit covers both user perspectives and architectural issues. Students will be able to implement three-tier systems in the Java and .NET world as well as manage security issues and suggest mechanisms to ensure the safety of applications and data.

## **HIT8423 Enterprise Systems Management**

This unit demonstrates IS management issues involved with enterprise systems. Students will learn to apply basic techniques, tools, methods and principles in the control of enterprise systems.

## **HIT8324 Web Application Development**

Students who successfully complete this unit will be able to build web applications using Ajax techniques.

## **HIT8325 Web Application Architectures**

This unit covers the use of a scalable web application using a Service Oriented Architecture. Building of the application will expose an API over the web and will incorporate external web services.

#### **HIT8408 Information Systems Risk and Security**

This unit covers the importance of identifying and managing IS-related risk and security issues in organisations, and the relationship between these and the achievement of business value from IS/IT investments.

#### **HIT8409 Process Modelling**

This unit will deliver an understanding of the benefits of conceptualising an organisation in terms of its core business processes, articulating process architecture, and ensuring alignment between process modelling and innovation initiatives, and IT strategy and innovation.

#### **HIT8410 Systems Acquisition and Implementation Management**

Providing an overview, this unit looks at the issues and options available for providing organisational IT services in relation to acquiring systems, package selection, IS vendor selection and management, IS contract negotiation and management and managing IS-related organisational transformation.

#### **HIT8413 Business Intelligence**

This unit identifies current business intelligence strategies and their application. Areas covered include information value and business intelligence relating to different organisational contexts.

#### **HIT8419 Decision Analysis Systems**

This unit identifies the nature and characteristics of decision making in organisational contexts and the relationship between problem solving and decision analysis, and their links to business analysis and requirements analysis.

#### **HIT8422 Database Performance Issues**

Outlining database performance analysis, this unit includes performance requirements and appropriate database structures for a given database system.

#### **HIT8424 Information Systems Management**

Information systems and their impact on business environments are addressed in this unit. It also looks at IS/IT strategy and the need for alignment to business strategy and managing IS/IT to ensure the delivery of business value.

#### **HIT8426 Enterprise Systems Implementation**

This unit will cover technology areas such as data base systems, legacy systems, application packages, ecommerce and messaging systems. Students will develop a plan of an enterprise application and integration standards as part of their coursework.

#### **HIT8463 Managing the IT Capability\***

This unit will identify structuring the IT organisation giving particular focus to key IT processes, IT budgets, outsourcing and offshoring, vendor management, systems development issues and leveraging IT infrastructure.

#### **HIT8464 Delivering IT Business Value\***

IT investment and its link to business value will be covered in this unit as well as financial management, including cash flow, capital expenditure analysis, cost allocation, charge out and evaluation of IT investments.

#### **HIT8465 Managing IT-Enabled Transformation\***

Change management techniques will be outlined in relation to technology adoption issues. In this unit case examples will be examined including IT solutions used for the organisational models outlined.

#### **HIT9466 Advanced Topics in Information Systems Management\***

This unit investigates key contemporary issues facing CIO's and other IT executives. It covers building effective relationships between IT and business operations; enterprise architectures and their interconnection with IS strategy; IT risk and security and managing an effective IT organisation.

*\* These units are available to students who have at least 2 years relevant industry experience and with approval of the program coordinator.*

## Units of study



**Alston Soares**  
**Master of Information Technology**

I enjoy the way the course is structured. It is tough and very rigorous, but you don't want to go into the workforce unprepared, the master program focuses on many areas I am interested in like systems development and analysis, so it's been a good preparation for my move into the IT industry. This is particularly true given the course is accredited at Professional Level (the highest level) towards membership with the Australian Computer Society."



## General information

### Facilities

As a Swinburne student you will automatically gain access to a range of facilities to assist your studies. These include a well-resourced library and computer laboratories.

There is also a sports association with fitness and health facilities on campus, plus a wide range of clubs to join.

Other services available include personal counselling, health services, careers counselling, housing, employment and financial advice.

### Fees for local students

In 2009, tuition fees for this program are based on \$1,900 per 12.5 credit point unit of study. In the event that a unit of study is derived from another program, the applicable fee will be that of the other program. All fees are reviewed each year and may increase without notice.

FEE-HELP is a government funded loan that helps eligible fee paying students pay their tuition fees.

FEE-HELP is not available to New Zealand citizens and most holders of Australian permanent visas, however is available to Australian citizens and holders of a permanent humanitarian visa.

For further information visit: [www.goingtouni.gov.au](http://www.goingtouni.gov.au)

### Application procedure

Entry is possible in both Semester 1 (February) and Semester 2 (July).

Application forms can be obtained by phoning 1300 368 777 or can be downloaded from the web at:  
[www.swinburne.edu.au/postgrad](http://www.swinburne.edu.au/postgrad)

Applications must be accompanied by a certified copy of original transcripts of official results and a curriculum vitae.

For the next round of closing dates visit:  
[www.swinburne.edu.au/postgrad](http://www.swinburne.edu.au/postgrad)

### International students

If you want to study at Swinburne but are not an Australian resident, telephone Swinburne International on (+61 3) 8676 7002 or 1800 897 973 from within Australia, or visit: [www.swinburne.edu.au/international](http://www.swinburne.edu.au/international)

### Further information

Telephone: 1300 368 777

Email: [postgrad@swinburne.edu.au](mailto:postgrad@swinburne.edu.au)

Website: [www.swinburne.edu.au/ict](http://www.swinburne.edu.au/ict)

“

Victoria produces the largest number of IT graduates of all states in Australia. ICT contributes to many strategic, high performing industries such as transport, automotive, agriculture, biotechnology and financial services. These sectors are increasingly seeking innovative ICT solutions to enhance and improve their core business functions and to pursue new business opportunities.”

— *Victorian Government*  
*ICT Industry Plan 2005–2010*

# ANY QUESTIONS?

[www.swinburne.edu.au](http://www.swinburne.edu.au)

**1300 ASK SWIN (1300 275 794)**

[postgrad@swin.edu.au](mailto:postgrad@swin.edu.au)

## **Postgraduate Information Day**

Swinburne Hawthorn campus

October 2009

[www.swinburne.edu.au/postgrad](http://www.swinburne.edu.au/postgrad)

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