

Postgraduate

SWIN
BUR
* NE *

SWINBURNE
UNIVERSITY OF
TECHNOLOGY

Professional Certificates in
**Information and Communication
Technologies**

In today's world, organisations depend on information and communication technologies to drive business goals and objectives. The convergence of telecommunications and networks, computer science and software engineering and information systems has drastically changed how we communicate and operate. Today, local and global networks, complex software systems and information systems are essential for operational efficiency and effectiveness and future business sustainability.

Swinburne's Professional Certificates in Information and Communication Technologies (ICT) offer individuals and organisations highly flexible and customised professional education study options. A professional certificate in ICT provides students with an award that recognises the successful completion of formalised assessment tasks.

Each professional certificate consists of two postgraduate-level units. Upon completion of a Professional Certificate, credit exemptions into relevant diploma or master programs are available.

Swinburne provides flexible and customised delivery of Professional Certificates to organisations. Our team of consultants and project managers achieve the best outcomes for our clients by getting to know the organisation's goals, and by acknowledging and responding to our client's business and personal development objectives.

Upon commencement of a Professional Certificate program by an organisation, a project team is appointed to manage all aspects of the program delivery. This includes not only the design and conduct of training sessions, but also the collection of data to allow evaluation of the program, reporting, and the issuing of qualifications and records of attendance. Flexible on-campus delivery options are also available for individuals.

Swinburne's professional certificates in ICT aim to provide individuals and organisations with the skills and knowledge required to meet the growing needs and requirements of the current and future IT professional.

Areas of specialisation

Software testing, web applications, networking concepts, network security, business process analysis, business intelligence and knowledge management, information systems governance and management.

Location

Hawthorn campus. Flexible delivery options are available for organisations including on-site delivery and off-site locations.

Program length

One semester or the equivalent for part-time studies (25 credit points).

Program structure

Students undertake a total of 25 credit points consisting of two specified postgraduate units of study, each of 12.5 credit points.

Professional Certificate specialisations

Professional Certificate in Software Testing

Program overview

Software engineers must continually strive to acquire new skills in conjunction with the rapid changes in computer technology. This professional certificate offers advanced studies in software testing and software tools. The program examines a mix of fundamentals (software engineering activities and tools) and practical hands-on knowledge in software tools. A combination of tools breadth and depth approach will be used, covering the most important tools for testing and software configuration management.

Unit 1: Software Tools

This unit will cover software process models, methods and tools, requirements and design tools, construction/programming tools and software engineering process and management tools.

Unit 2: Software Testing Processes and Automation

This unit will cover test techniques; test-related measures; automated testing and automated testing life cycle; automated defect tracking and reporting; and automated performance testing. Upon completion students will be able to understand and apply software tools as well as software testing techniques.

Admission requirements

Completion of the required Swinburne postgraduate-level unit or completion of an equivalent university level unit.

Applicants who do not hold a degree must have at least three years relevant industry experience demonstrating potential to undertake work at this level.

Professional Certificate in Web Applications

Program overview

Web applications powered by embedded web servers have become commonplace in organisations. This professional certificate provides students with an in-depth understanding of web development, usability and internet technologies.

Unit 1: Web Application Development

This unit will cover ajax programming environment, XML, DOM and CSS used in javascript, asynchronous content update technologies, web services, APIs and mashups, design patterns, RSS and JSON. Students who successfully complete this unit of study will understand how client-side dynamic scripting works, understand how server-side programming technologies work with asynchronous update technologies and will also be able to develop interactive web applications.

Unit 2: Web Application Architectures

Students who successfully complete this unit will have built a scalable web application using a Service Oriented Architecture. The application will expose API over the web and will incorporate external web services. This unit will cover Service Oriented Architectures (SOAs), web services as an SOA, web service standards, Messaging – SOAP, service description and service composition. This unit also provides students with an overview of other issues – service discovery, transactions, reliability and security.

Admission requirements

Completion of the required Swinburne postgraduate-level unit or completion of an equivalent university level unit.

Applicants who do not hold a degree must have at least three years relevant industry experience demonstrating potential to undertake work at this level.

Professional Certificate in Networking Concepts

Program overview

Students who successfully complete this professional certificate will be able to use the OSI model to describe direct point-to-point data communications, describe basic inter-network processes, conduct basic network audits, explain the function of network management tools, build a simple network of hosts, cables, switches and routers, and troubleshoot typical physical problems in a small network. Students will also be able to install and configure CISCO switches and routers in multi-protocol inter-networks, using LAN and WAN interfaces. Furthermore, students will have developed the knowledge and skills needed to provide level 1 troubleshooting service, improve network performance and security as well as perform entry-level tasks in the planning, design, installation, operation and troubleshooting of ethernet and TCP/IP networks.

Unit 1: Networks and Routing

This unit provides training to prepare for sitting the external CCNA certification examinations.

The following areas will be covered: networks and layers, networking devices, IP addressing, ARP and RARP, media and design, topology, structured cabling, network management, OSI Model, Layers 1–7, WANs, IOS, TCP/IP, IP addressing and subnetting, variable length subnet masking (VLSM), routing, routing protocols, classless routing protocols – RIPv2, OSPF and EIGRP, using the router and router components.

Note: the CCNA exam is conducted independently of Swinburne and there is a fee charged by the testing body.

Location: Hawthorn campus. Flexible delivery options are available for organisations including on-site delivery and off-site locations

Program length: One semester or the equivalent for part-time studies (25 credit points)

Program structure: Students undertake a total of 25 credit points consisting of two specified postgraduate units of study, each of 12.5 credit points

Unit 2: Internetworking Technologies

This unit provides training to prepare for sitting the external CCNA certification examinations.

The following areas will be covered: Switching concepts, switch design and switch configuration, spanning tree protocol (STP), virtual LANs, virtual trunking protocol (VTP), scaling networks with NAT and PAT, dynamic host configuration protocol (DHCP), WAN technologies, PPP, ISDN and DDR, frame relay, network management and network security via ACLs.

Note: the CCNA exam is conducted independently of Swinburne and there is a fee charged by the testing body.

Admission requirements

Completion of the required Swinburne postgraduate-level unit or completion of an equivalent university level unit.

Applicants who do not hold a degree must have at least three years relevant industry experience demonstrating potential to undertake work at this level.

Professional Certificate in Network Security

Program overview

The Professional Certificate in Network Security covers the technology of servers and networks and techniques for ensuring their robust operation. This program also explores the technology and management of internet security. Students who successfully complete this professional certificate will have developed skills and knowledge to evaluate security of networks and servers, develop management plans for system security, perform security audits, understand concepts of social engineering, use a variety of security-related tools, understand concepts of network monitoring and analyse and interpret logs.

Unit 1: Secure Networks

This unit provides an overview on operating systems (with an emphasis on Unix) with relation to management, performance, network connectivity and security. Content also includes network functionality, including methods of connection, maintenance of security and performance management.

Practical skills will be developed in design, security and monitoring.

Unit 2: Internet Security

This unit covers topics in security, networks and servers and also covers management issues, security models, case studies and risk assessment.

Students will gain a deep understanding on firewalls theory and practice, design and implementation; packet filtering and intrusion detection tools; design, testing, implementation and validation; web services and directory services.

Admission requirements

Completion of the required Swinburne postgraduate-level unit or completion of an equivalent university level unit. Applicants who do not hold a degree must have at least three years relevant industry experience demonstrating potential to undertake work at this level.

Professional Certificate in Business Process Analysis

Program overview

The Professional Certificate in Business Process Analysis covers advanced studies focusing on the provision of IS services, and the management of information systems in organisations. Students will gain a deep understanding of the techniques and approaches used for business information systems analysis. Students will also develop skills and knowledge in process modelling and mapping methodologies.

Unit 1: Business Information Systems Analysis

This unit covers the nature of systems, information systems, problem solving, techniques and approaches for business information systems analysis; hard vs soft approaches to intervening in IS analysis; issues and challenges in business information systems analysis; and the importance of this to information system success.

Unit 2: Process Modelling

This unit explores process modelling methodologies, tools, techniques and notations. Students will gain skills and knowledge in process innovation via the application of modern information systems and technology and will also gain an understanding of the role of IT in enabling, supporting and redesigning business processes. The unit also covers the implementation of software applications with embedded processes.

Admission requirements

Completion of the required Swinburne postgraduate-level unit or completion of an equivalent university level unit. Applicants who do not hold a degree must have at least three years relevant industry experience demonstrating potential to undertake work at this level.

Professional Certificate in Business Intelligence and Knowledge Management

Program overview

The Professional Certificate in Business Intelligence and Knowledge Management provides students with an understanding of the relationship between corporate strategy, business intelligence strategy and knowledge management strategy. Students who successfully complete this professional certificate will have a thorough understanding of information value, types, sources and data modelling as well as the use of particular business analytics with particular business intelligence strategies.

Unit 1: Business Intelligence

This unit will provide students with a deep understanding of the nature and value of business intelligence, the business intelligence environment, and how types of data processing can add value to corporate data sources. The concept of business value from corporate data will be explored, as well as the exploitation of information for advantage and the types and sources of information value. Knowledge discovery, data mining, data warehousing and business analytics will also be covered.

Unit 2: Knowledge Management

This unit covers the nature of knowledge, knowledge creation and the knowledge management processes. The organisational context of knowledge management will be explored as well as the guidelines for undertaking personal, group and corporate knowledge management.

The contribution of IT to knowledge management practice and the social, technical and business-oriented views of knowledge management will also be explored.

Admission requirements

Completion of the required Swinburne postgraduate-level unit or completion of an equivalent university level unit.

Applicants who do not hold a degree must have at least three years relevant industry experience demonstrating potential to undertake work at this level.

Professional Certificate in Information Systems Governance and Management

Program overview

The Professional Certificate in Information Systems Governance and Management addresses information systems and their impact on business environments. It covers the IS/IT strategy and the need for alignment to business strategy and managing IS/IT to ensure the delivery of business value. It covers the foundations of strategic information systems planning and addresses how best to deliver value from IS/IT investments in relation to business objectives and organisational strategies. Students will 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.

Unit 1: Information Systems Management

This unit introduces IS/IT strategy, IS/IT architectures, managing IS infrastructure and developing and managing organisation-wide IT capability. Students will also develop skills and knowledge in evaluating investments in IS, decision-making about IT, managing realisation of benefits from IT investments and managing delivery of IS services.

Unit 2: Information Systems Governance and Strategy

This unit provides a sound understanding of the concepts of IS governance and the importance of linking IS planning to business strategy and objectives, and its contribution to the delivery of value from IS/IT investments. Students will gain skills and knowledge in structures, processes, and relational mechanisms for effective IS governance. Furthermore, this unit covers IT governance approaches (ITIL, COBIT), governance tools, mechanisms and processes.

Admission requirements

Completion of the required Swinburne postgraduate-level unit or completion of an equivalent university level unit.

Applicants who do not hold a degree must have at least three years relevant industry experience demonstrating potential to undertake work at this level.

Professional Certificates in ICT

General information

Location

Hawthorn campus. Flexible delivery options are available for organisations including on-site delivery and off-site locations.

Program length

One semester or the equivalent for part-time studies (25 credit points).

Program structure

Students undertake a total of 25 credit points consisting of two specified postgraduate units of study, each of 12.5 credit points.

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, fees for these programs are based on \$1900 per 12.5 credit point unit of study. Organisations seeking customised workplace training should contact Swinburne Industry Solutions on (03) 9214 5438 for rates.

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, it is available to Australian citizens and holders of a permanent humanitarian visa. For further information visit www.goingtouni.gov.au

Application procedure

Application forms for postgraduate study can be downloaded at www.swinburne.edu.au/postgrad

Further information

Swinburne Information Office
Telephone: 1300 ASK SWIN (1300 275 794)
Email: postgrad@swin.edu.au or info@ict.swin.edu.au
Website: www.swinburne.edu.au/ict

Submit an online enquiry or download an application form at www.swinburne.edu.au/postgrad

ANY QUESTIONS?

www.swinburne.edu.au

1300 ASK SWIN (1300 275 794)

postgrad@swin.edu.au

Postgraduate Information Day

Swinburne Hawthorn campus

October 2009

www.swinburne.edu.au/postgrad

The material in this brochure was correct at the time of printing, (September 2008) but is subject to alteration or amendment without notice by Swinburne.

CRICOS provider code 00111D

This brochure was printed on recycled paper manufactured under the ISO 14001 environmental management systems standard.

Designed and produced by Swinburne Press Design Studio
SP1122-06-0908