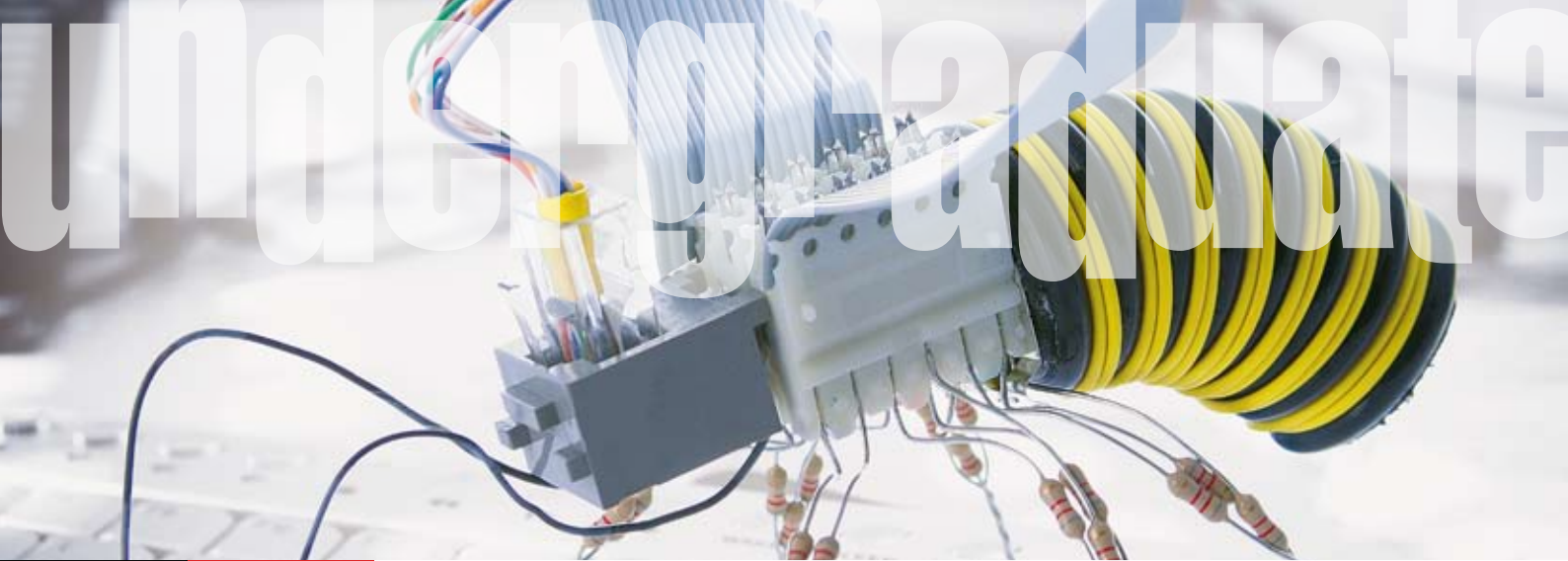


Study **Network Design and Security**  
at Swinburne



SWINBURNE  
UNIVERSITY OF  
TECHNOLOGY

## Network Design and Security

- ▶ course information hotline 1300 368 777
- ▶ [swinburne.edu.au/ict](http://swinburne.edu.au/ict)

### What is Network Design and Security?

Network Design and Security is concerned with the design, development, management and protection of computer networks. Security specialists are expected to have an in-depth understanding of network communication technologies, and have the ability to use hardware and software products to protect company assets. Businesses are constantly under threat from hackers seeking new ways to infiltrate businesses computer systems. A Network Design and Security expert is taught to take a proactive approach to security, anticipating system vulnerabilities and developing plans to mitigate the risks. Network Design and Security experts must be ready to respond decisively when an attack is detected. Here, they are expected to have strong technical skills and also an acute understanding of business requirements.

The program is designed to develop strength in multiple areas which will significantly enhance the attractiveness of graduates to employers and open up opportunities in a wide range of Information Technology related jobs.

### Key program elements

- ▶ A complete understanding of managing network security
- ▶ Practical skills in the deployment and management of computer networks
- ▶ Strong programming skills
- ▶ Sympathetic appreciation of business information systems
- ▶ Deployment of real applications
- ▶ Teamwork project skills
- ▶ Development of presentation and communication skills
- ▶ Experience in industry

### Career opportunities

Assessments of Information Technology skills specified in recent job applications have shown strong demand for knowledge of IT security. A Network Design and Security degree will help students to obtain graduate positions in departments that administer systems security. Swinburne graduates will be well equipped to apply their strong practical skills and thirst for life long learning to achieve their goals. This degree will deliver graduates with significant knowledge that will enable students to become valued employees.

A broad range of employment opportunities exist in the following areas:

- ▶ Network administration
- ▶ Network security
- ▶ Software development
- ▶ Web development

- ▶ Computer systems analysis
- ▶ Computer systems audit
- ▶ Security appraisal and audit
- ▶ Business risk analyst
- ▶ Database administration
- ▶ Network support in any medium to large businesses with a presence on the Internet

Typically graduates would work for:

- ▶ Police and intelligence services
- ▶ Criminal justice
- ▶ Banking, finance and insurance
- ▶ Private investigation
- ▶ Internet service providers
- ▶ Medium to large organisations
- ▶ Managing their own consulting business

### Feature degree and major study areas

#### Bachelor of Computing (Network Design and Security)

The Bachelor of Computing (Network Design and Security) comprises 24 units taken over three years. Opportunities exist to accelerate completion by taking units in summer and winter terms. Advanced standing may be available for students who have completed tertiary study elsewhere. The program includes sequences of study in programming, networking and information systems.

Development of networking skills is covered in six units. Students learn how to setup, administer, maintain and secure network servers. Cisco Network Academy Program course material (1, 2, 3 and 4) is studied in year one. In second year, students are exposed to a detailed review of network security threats, security policy issues, encryption, firewalls, VPN, IDS technologies and wireless technologies.

Students take three programming units. The first unit introduces C programming, the second introduces object oriented programming using C++ and the third covers advanced programming.

Employers look for students who are good communicators and are able to work well in teams. This program includes units that require significant team work, initially under the close supervision of university staff and later with real clients. Students are allowed to practice what they have learnt in early units and to develop products (web sites, windows applications) which they can use to demonstrate their skills when seeking employment.

Seven of the required units for this program focus on security. While security is explored in the context of computer networks and also in terms of data communications systems there is also a strong focus on the needs of business and particularly how to manage business information systems.

### Scholarships

Swinburne offers several scholarships that provide a HECS waiver to new students.

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

### International experience

Swinburne offers opportunities to study overseas as part of your degree program. Study tours or IBL placements are available in many locations including Asia, Europe and North America.

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

### Location

Hawthorn campus.

### Application procedure

Applications for semester one places must be made through VTAC. Visit [www.vtac.edu.au](http://www.vtac.edu.au)

Mid-year applications are made directly to Swinburne. Visit [www.swinburne.edu.au/midyear](http://www.swinburne.edu.au/midyear)

### Fees

**Commonwealth Supported Places** – All students enrolled in higher education courses are required to contribute to the cost of their education. The former Higher Education Contribution Scheme (HECS) has been replaced by HECS-HELP, a loan that helps eligible students pay their student contribution. Student contributions will vary according to the course and higher education provider.

**Full fee places** – Swinburne also offers full fee paying places to domestic undergraduate students.

For further information on CSP and full fee places visit [www.swinburne.edu.au/fees](http://www.swinburne.edu.au/fees)

### Postgraduate courses

To find out more about Swinburne postgraduate courses by coursework or research, telephone 1300 368 777 or 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 1800 897 973 (within Australia) or +61 3 8676 7002 (outside Australia) or visit [www.swinburne.edu.au/international](http://www.swinburne.edu.au/international)

### Student services

Swinburne provides a range of services to its students including career advice, child care, counselling, employment, equity, finance and housing. For more information visit [www.swinburne.edu.au/stuserv](http://www.swinburne.edu.au/stuserv)

### Further information

Telephone: 1300 368 777

Email: [info@ict.swin.edu.au](mailto:info@ict.swin.edu.au)

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

Course	VTAC code*	Duration	VCE prerequisites
Bachelor of Computing (Network Design and Security)	34211	3 years plus optional IBL year	Units 3 and 4 – a study score of at least 20 in English (any) and at least 25 in Mathematics (any)
Bachelor of Engineering (Telecommunication and Network Engineering)	34201	4 years plus optional IBL year	Units 1 and 2 – Mathematics (any), and a study score of at least 20 in English (any)
Bachelor of Engineering (Telecommunication and Network Engineering)/Bachelor of Science (Computer Science and Software Engineering)	34191	5 years plus optional IBL year	Units 3 and 4 – English and a study score of at least 25 in one of Mathematical Methods (either) or Specialist Mathematics

\* Separate course codes exist for full-fee paying and international entry – check the VTAC Guide

Visit: [www.swinburne.edu.au/coursefinder](http://www.swinburne.edu.au/coursefinder) for more information on courses and subjects

The material in this brochure was correct at the time of printing, (August 2007) but is subject to alteration or amendment without notice by Swinburne.

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Let's get on with it.