WE'VE MASTERED SECURITY

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MASTERS PROGRAM IN COMPUTER AND NETWORK SECURITY

SCHOOL OF COMPUTER SCIENCE AND MATHEMATICS

Victoria University offers a Computer Security stream as part of the postgraduate studies in the School of Computer Science and Mathematics. Prospective students do not require background knowledge in either networks or security. The Master of Science is a two-year (16 study units) course providing graduates with the required knowledge and tools to work as professionals in networks and in security areas.

WHY STUDY AT VICTORIA UNIVERSITY?

Victoria University is one of Australia's premier teaching institutions, obtaining the highest possible score for satisfaction with teaching and the students' experience in the Australian "Good Universities Guide".

Staff in the School of Computer Science and Mathematics have established international reputations for teaching and research in cryptography and security, with courses taught both locally and overseas. The School supports a high teacher/student ratio, and aims to provide a friendly atmosphere conducive to learning.

As well as teaching the subjects above, staff supervise many research projects in security and cryptography, from Honours, through to Masters and Doctorate level. Masters is the highest level coursework degree offered at Victoria University.

WHAT JOBS ARE AVAILABLE IN COMPUTER AND NETWORK SECURITY?

Computer and Network Security is currently one of the hottest computer areas in the world. Graduates can find employment in the banking and finance industries; in computer and network support; and in security analysis, training, auditing and implementation in the commercial, government or private sectors. There are also opportunities for employment with the telecommunications and defence industries.

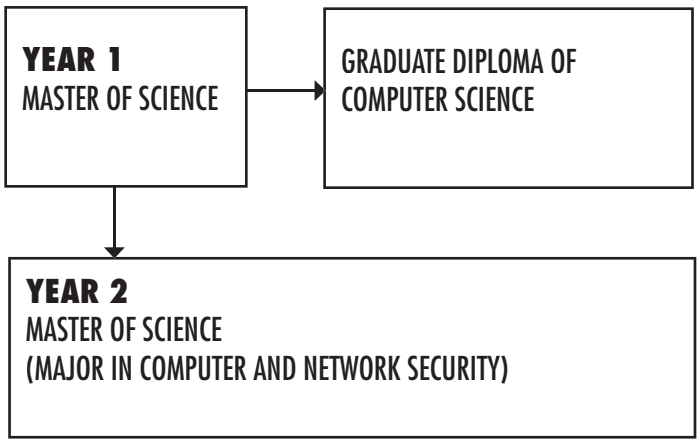
ENTRY REQUIREMENTS

Entry into the program is open to applicants with a first degree. Preference will be given to applicants whose degree contains major studies in a quantitative discipline. Other applicants whose occupation and experience indicate that they have the capacity to succeed may be accepted into the course as assessed by the VU course coordinator according to the VU policy.

The minimum English requirement for admission to the Master of Computer Science is an IELTS of 6.5 (with no subtest less than 6.0) or equivalent. Equivalence is to be assessed by VU.

STRUCTURE OF THE PROGRAM

The Master of Science is a two-year program. Students who successfully complete year one of the program will be eligible for the Graduate Diploma of Computer Science.



FIRST YEAR SUBJECTS (EQUIVALENT TO THE POSTGRADUATE DIPLOMA)

RCM5800: Object Oriented Programming GD1

This subject introduces students to problem solving with the aid of Java based computer programs. Emphasis is put on students' acquiring good programming techniques and writing programs of high quality using an Object Oriented programming language.

RCM5802: Information Systems

This subject covers the basic concepts of data modelling, designing a database, querying the database and maintaining the database. Students gain experience in working with a popular SQL database management system.

RCM5805: Communication and Networks

Students develop a clear understanding of how communications systems work and the standards used in modern data communication systems and computer networks.

RCM5820: Network Operating Systems Administration

The unit of study provide an overview of computer networks operating systems. This will include architecture of a specific network operating system, components of network operating systems and their installation. Network administration, including performance monitoring and server tuning will be covered.

RCM5822: Networked Multimedia Systems

This unit of study develops a clear understanding of the requirements for transmitting multimedia information over computer networks, and current multimedia networking technologies. An overview to wireless technology and various security issues are also covered.

RCM6812: Cryptography, Computer and Internet Security

An introduction to the theory of cryptography for computer security, emphasising the mathematics of cryptography, the algorithms involved with implementation, and appropriate uses of these algorithms.

RCM6813: Internet Security

The subject aims to introduce students to the principles and practices of secure computing over the Internet and other networks, with particular emphasis on the application of software to minimizing security risks.

RCM6814: Enterprise Wide Computing

Introduction to client/server applications, distributed systems and web applications development, modelling and design, database and web based applications. This subject also discusses some security aspects.

SECOND YEAR SUBJECTS

RCM5807 Advanced Information Systems

Students develop an understanding of the fundamental roles of data analysis, database design, transaction specification, and database security in the development of database applications. On completion of the unit, students will demonstrate good skills in data analysis and database design, proficiency in the mechanisms that protect a database against threats, as well as the ability to implement database transactions effectively.

RCM6810: Internet Data Management 1

The subject introduces students from beginning Web applications, to object-oriented programming, to building Data-Driven Web applications and deploying an ASP.NET application. This subject will also address web server and database security. Students gain experience in developing a fully functional e-Commerce system.

RCM6823: Database Design, Management and Administration

This is the third database unit in the course providing an insight into DBMS components such as distributed database design and management, services and multi-user architectures. The data base planning, transaction management, integrity and security provide the necessary skills required of a database administrator.

RCM6844: Software Engineering 1

This subject reviews software engineering topics of software process and software life-cycle models, software process improvement, requirement, classical analysis and design, object oriented analysis and design.

RCM6106 and RCM6107: Thesis

The aim of 4-unit thesis is to enable students to competently research an area of study utilising knowledge and skills gained in previous studies of networks and security. The Thesis is a large project carried out by students on an individual basis. The project is expected to be an investigation of an approved topic, followed by analysis of the results. Towards the end of the project, a suitably formatted thesis must be submitted in which the topic is introduced and formulated, the investigation described in detail, results and conclusions from the study are elaborated, and an extended discussion present.