

## Bachelor of Information Technology (Faculty of Sciences) (BINT) - BIT

CRICOS code (International applicants): 007490J

**This program is offered only to continuing students. No new admissions will be accepted. Students who are interested in this study area should consider the new Bachelor of Information Technology (BITC) which will be offered from Semester 1, 2009.**

	On-campus	Distance education
<b>Campus:</b>	Fraser Coast, Toowoomba	-
<b>Fees:</b>	Commonwealth supported place International full fee paying place	Commonwealth supported place International full fee paying place
<b>Standard duration:</b>	3 years full-time, 6 years part-time	

### Contact us

Current students

Contact the Administration Officer (Mathematics and Computing), telephone +61 7 4631 2384, email [sciences.enrolment@usq.edu.au](mailto:sciences.enrolment@usq.edu.au) or submit a question via [USQAssist](#).

### Applied computer science major study

This major develops students' skills and knowledge in software development, programming languages, networking and the design and implementation of computer and information systems.

### Career opportunities

Computer Programmer, Computer Analyst, Project Leader, Web Designer, Business Analyst, IT Manager, Computer Network Specialist, Database Administrator, Database Designer.

### Networking and Security major study

The Networking major aims to equip students with the skills required to manage networks of computers, of the sort that exist today in nearly all organisations. Graduates will be able to design, install, configure and maintain such networks and the systems that operate on them.

### Career opportunities

Network Administrator, Network Designer, Network Security Specialist.

### Professional accreditation

This program is accredited by the [Australian Computer Society](#).

### Program aims

The Bachelor of Information Technology is a vocationally oriented program emphasising the resolution of technological problems leading to the effective management and analysis of information in both the private and public sectors. Graduates should be familiar with relevant major academic disciplines and possess knowledge and skills in problem resolution and communication, as well as specific attributes enabling them to work effectively in their chosen area(s) or specialisation(s).

Achievement of the objectives of the student's area of specialisation will result in a graduate of high academic standard who is capable of competing for employment in a chosen professional area and pursuing career development in that or other related areas.

## Program objectives

Graduates of this program will be able to:

- work as a professional in the Information Technology industry
- demonstrate sound presentation and communication skills which are required in the computing industry
- acquire specific knowledge and skills relevant to their disciplines and careers
- develop appropriate intellectual, professional and personal attributes
- become good problem-solvers and innovative thinkers, who are able to learn new skills independently and efficiently and consequently to succeed in a competitive professional environment
- demonstrate a basic understanding of the principles of information technology
- identify information needs appropriate to their area of specialisation and apply the techniques required to gather and interpret such information
- demonstrate skills in the analysis and determination of technological issues at management level
- identify, analyse and solve problems in one or more areas of information technology by selecting and using either quantitative or qualitative techniques appropriate to the resolution of technical problems
- satisfy academic admission requirements for membership of relevant professional bodies
- understand the ethics of their profession and the need for a commitment to that profession
- proceed to higher studies
- be capable of working with people from other disciplines towards the solution of common problems.

## Admission requirements

For entry into the Bachelor of Information Technology program, applicants will require Queensland Senior School Certificate (Year 12) or equivalent with the following:

- English (four semesters Sound Achievement) or equivalent. International applicants must have met the [University's English language requirements](#) or have completed the University's [ELICOS/UNIPREP](#).
- Mathematics A (four semesters Sound Achievement) or equivalent

Candidates for admission into this program must satisfy the normal USQ entry requirements for undergraduate programs. Please refer to Academic Regulation 5.4.2 of the University Calendar, Section 1. (for Australian students)

## Program fees

### Commonwealth supported place

A Commonwealth supported place is where the Australian Government makes a contribution towards the cost of your higher education and you as a student pay a [student contribution amount](#), which varies depending on the courses undertaken. You are able to calculate the fees for a particular course via the [Course Fee Finder](#).

Commonwealth Supported students may be eligible to defer their fees through a Government loan called [HECS-HELP](#).

### International full fee paying place

International students pay [full fees](#). Full fees vary depending on the courses that are taken and whether they are studied on-campus, via distance education/online. You are able to calculate the fees for a particular course via the [Course Fee Finder](#).

## Program structure

Students shall complete the Common Core (eight units) together with one of the BIT majors described in the accompanying tables (this will be known as the first major). Each major contains eight courses. The majors available are:

- Applied Computer Science
- Networking and Security

The remaining eight units shall be completed in one of three ways as listed below. The first two minors will result in the award of a BIT degree with a double major.

- (1) Complete an eight-unit second major chosen from one of the following:
  - the Creative Multimedia major from the Faculty of Arts
  - any eight-unit major identified in the BSc rules
  - subject to approval from the Program Coordinator, an eight-unit major identified as part of a USQ degree program that is not listed above.
- (2) Complete a second BIT major from this program together with up to four electives chosen, subject to pre-requisite requirements, from any Faculty of the University. Depending on the choice of majors, which governs the amount of common courses, between one and four elective courses may be undertaken.
- (3) Complete a minimum of four IT electives together with a maximum of four non-IT electives. An IT elective is defined as any CSC course code that is not included in the major. Non-IT electives may be chosen, subject to pre-requisite requirements, from any Faculty of the University.

### Unsuitable electives

For various reasons, the following courses will not be approved as electives: [CIS1000](#), [CIS1001](#), [CSC1402](#), [CIS2002](#), [MGT2100](#), [MGT2102](#).

In addition, only one of the courses [STA3300 Experimental Design](#) and [STA3302 Statistics for Researchers](#) may be credited towards a Bachelor of Information Technology program unless approved by the Program Coordinator.

### Required time limits

Students have a maximum of 9 years to complete this program.

### Core courses

Course	Semester(s) Offered	Mode	Year of Offer
<a href="#">CMS1000 Communication and Scholarship</a>	1, 2, 3	ONC, EXT	All
<a href="#">CSC1401 Foundation Programming</a>	1, 2	ONC, EXT	All
<a href="#">CSC2401 Algorithms and Data Structures</a>	1	ONC, EXT	All
<a href="#">ELE1301 Computer Engineering</a>	1	ONC, EXT	All
<a href="#">MAT1100 Foundation Mathematics*#</a>	1	ONC, EXT	All
<a href="#">MAT1101 Discrete Mathematics for Computing</a>	1	ONC, EXT	All
<a href="#">CIS1000 Information System Concepts</a>	1,2,3	ONC, EXT	All
<a href="#">STA2300 Data Analysis</a>	1, 2, 3	ONC, EXT	All

#### Footnotes

\* Students who have gained an Exit Level of Very High Achievement (VHA) in Mathematics B in Queensland Grade 12 or its equivalent OR an Exit Level of High Achievement (HA) in Mathematics B AND High Achievement (HA) in Mathematics C in Queensland Grade 12 or its equivalent, may be given the opportunity to replace [MAT1100 Foundation Mathematics](#) with an additional elective as approved by the Program Coordinator.

# Students in the Games and Creative Technologies major should replace this course with [MAT1102 Algebra and Calculus I](#)

### Games and Creative Technologies, Multimedia Technology, Software Engineering, and Web Information Systems

The following majors in the Bachelor of Information Technology (BINT): Games and Creative Technologies, Multimedia Technology, Software Engineering, and Web Information Systems are no longer available for entry. Students who are currently enrolled in those majors have been contacted and provided with information about minors to complete their nominated major. Any students who require further advice regarding their study options should contact the Computing Undergraduate Coordinator within the Department of Mathematics and Computing.

## Applied computer science major study

On completion of the Applied Computer Science major, graduates should be able to:

- demonstrate abilities in the fundamentals of structured programming techniques
- demonstrate ability in the fundamentals of discrete mathematics, numerical computing and basic statistics, calculus and algebra
- display detailed knowledge of and be competent in the application of basic algorithms and data structures
- demonstrate sound knowledge of operating systems principles and display familiarity with the most frequently used operating systems
- understand the principles which underlie the design of programming languages and demonstrate highly developed programming skills in procedural, logic, and object-oriented languages
- demonstrate a sound knowledge of user interface design and be competent in developing graphical user interfaces in windowing environments
- understand and apply methods for planning and managing large software projects, including design, development and maintenance aspects
- display a detailed knowledge of the fundamental principles of data base systems and be able to apply these using data base software
- research, design and develop people-oriented information systems using appropriate strategies for data management, statistical analysis and graphical reporting
- systematically analyse problems, formulate and evaluate potential solutions with reference to current literature and design, develop and report feasible solutions.

### Major Aims

The Applied Computer Science major equips the graduate with effective problem solving skills using computers. Graduates should be familiar with Database, up-to-date programming, software design, fundamental networking and professional skills to apply them in problem resolution and communication in the workplace.

Achievement of the objectives will result in a graduate of high academic standard who is capable of competing for employment in a professional area and pursuing career development in government establishments and IT industries.

### Major Courses

Course	Semester(s) Offered	Mode	Year of Offer
<a href="#">CSC2402 Object-Oriented Programming in C++</a>	1,3	ONC, EXT	All
<a href="#">CSC2404 Operating Systems</a>	2	ONC, EXT	All
<a href="#">CSC2407 Introduction to Software Engineering</a>	2	ONC, EXT	All
<a href="#">CSC2408 Software Development Tools</a>	2,3	ONC, EXT	All
<a href="#">CSC3400 Database Systems</a>	1	ONC, EXT	All
<a href="#">CSC3403 Comparative Programming Languages</a>	1	ONC, EXT	All
<a href="#">CSC3419 XML and the Web</a>	2	ONC, EXT	All
<a href="#">CSC3407 Network Fundamentals and Routing</a>	1,3	ONC, EXT	All

## Networking and Security major study

On completion of the Networking major, graduates should:

- be able to design, install, configure, and maintain networks and their operating systems
- have acquired skills in development of new systems to operate networks
- be able to interface networks with wide area networks such as the Internet and newer network architectures

- have a sound understanding of the operating systems that are used to provide services on networks, including at least Unix and Windows NT.

### Major Aims

The Networking major equips the graduate with state-of-the art skills in networking design, management, security and development. Graduates should be familiar with problem solving in computer networks, VoIP, video conferencing, network system administration and professional skills to apply them in the communication sector, healthcare, government establishments and IT firms.

Achievement of the objectives will result in a graduate of high academic standard who is capable of competing for employment in communication, education, healthcare, business departments and IT industries.

Course	Semester(s) Offered	Mode	Year of Offer
<a href="#">CSC2404 Operating Systems</a>	2	ONC, EXT	All
<a href="#">CSC2406 Web Publishing</a>	1,3	ONC, EXT	All
<a href="#">CSC2408 Software Development Tools</a>	2,3	ONC, EXT	All
<a href="#">CSC3400 Database Systems</a>	1	ONC, EXT	All
<a href="#">CSC3407 Network Fundamentals and Routing</a>	1,3	ONC, EXT	All
<a href="#">CSC3412 System and Security Administration</a>	2	ONC, EXT	All
<a href="#">CSC3413 Network Design and Analysis</a>	2	ONC, EXT	All
<a href="#">CSC3427 Switching, Wireless and WAN Technologies</a>	2	ONC, EXT	All

### Double Major Study

Students are able to also elect to take a double major in this program. The following combinations are available

- Applied Computer Science and Networking and Security

### IT requirements

Students should visit the USQ [Recommended Hardware](#) and [Recommended Software](#) sites to check that their computers are capable of running the appropriate software and versions of Internet web browsers and to check the minimum and recommended standards for software.

### Residential schools

Some Mathematics and Computing courses in the Bachelor of Information Technology program have optional [residential schools](#). Students are strongly encouraged to attend these residential schools. See the relevant section of this Handbook for dates of residential schools.

### Recommended enrolment pattern

Students still in the Bachelor of Information Technology (BINT) should contact their Undergraduate Coordinator if they have questions about enrolment patterns.