

Applications Development and Networks

Bachelor of Information Technology and Systems

This major is for technically-minded problem-solvers who like to get behind the scenes. Build your knowledge and skills in developing systems using networks and web technology.

While studying the Applications Development and Networks major, you'll learn how to build new systems and applications from the ground up using current technologies and tools. You will learn about analysing users' needs, designing and creating the software and databases and managing computer-based information systems and applications.

This major also focuses on network and internet technologies, their use and management, the design and development of networked systems, and networked applications in industry and government.

Networks are the single most powerful technology driving the present universal use of computers, and the internet is a vital part of daily life for almost all sectors of the community.

Some of the topics covered include advanced Java programming, information systems analysis and design, operating systems, software engineering, advanced data communications and networks, information and network security and commercial programming.

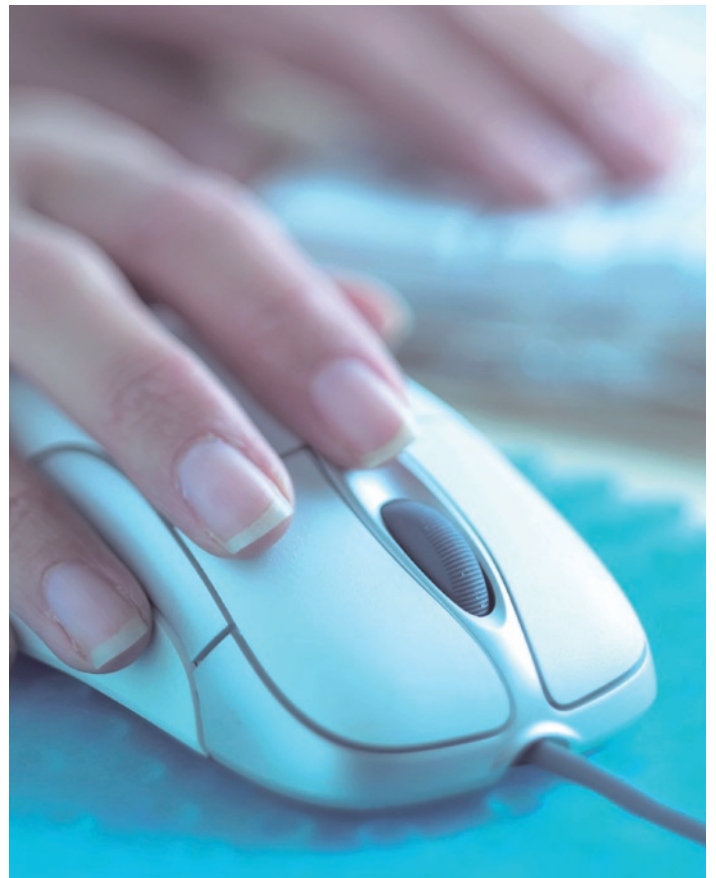
Options to study advanced topics in multimedia applications, data mining and infrastructure for e-commerce are also available at Gippsland.

This major may be combined with the Business systems major, to enhance your career opportunities. A double major is achieved in the same time as a single major, by substituting elective units for the core units of the second major.

Career information

Depending on available electives at your campus of study, graduates can choose career paths in areas such as education, graphic design, publishing, marketing, business or the entertainment sector. Possible careers are:

- Computer programmer
- Network manager
- Animator, 3D modeller
- Systems designer
- Multimedia and web developer
- Systems analyst
- Project leader
- Database designer and administrator
- Analyst programmer
- Systems programmer
- e-Commerce developer
- Multimedia programmer



Bachelor of Information Technology and Systems Applications Development and Networks major

Monash course code: 3334. CRICOS code: 054529J. Gippsland (on- and off-campus) and South Africa* campuses

Course structure

First year

FIT1001 Computer systems – Introduces basic computer hardware and operating systems software with emphasis on the concepts required to understand the low-level and internal operations of computer systems.

FIT1002 Computer programming – Provides an overview of programming and its role in problem-solving and strategies for meeting user requirements and for designing solutions to programming problems.

FIT1003 IT in organisations – Provides the organisational and social context for the technical core units, and introduces students to the professional roles and responsibilities of IT practitioners.

FIT1004 Database – Introduces the principles and concepts of database systems, including planning, designing, using and implementing a data model using an enterprise-scale relational database system.

FIT1005 Networks and data communications – Introduces the fundamentals of distributed networked environments, and provides knowledge of internetworking standards and understanding of the networking architecture, technology and operation.

FIT2034 Computer programming 2 – Introduces more advanced object-oriented programming topics and techniques, and gives students a deeper understanding of programming and data structures and practical skills in designing, building and testing computer programs.

Two elective units – These are free choice level 1, 2 or 3 units which may be taken from within the Faculty of Information Technology or from any other faculty in the university.

Second year

FIT2001 Systems analysis and design – Provides an overview of the main techniques used for carrying out analysis and specification of the design of a computer system, with a focus on the unified modelling language (UML).

FIT2002 IT project management – Provides both a theoretical and practical overview of processes involved in managing large projects, with particular emphasis on projects common to the IT industry.

FIT2005 Systems analysis and design 2 – Students learn about static and dynamic modelling, and component-based design, using unified modelling language (UML). This unit also examines common design patterns, system architecture and aspect-oriented analysis and design.

FIT2009 Data structures and algorithms – Students learn about application and implementation of (i) common data structures: stacks, queues, lists, priority queues, tables, sets and collections; and (ii) data representations: arrays, linked lists, heaps, trees and hashing. Study of advanced algorithms in areas such as: graph theory, pattern searching and data compression.

FIT2020 Networks and data communications 2 – Introduces students to advances in the distributed networked environment, provides knowledge of internetworking protocols, QoS for critical applications, network management and TCP/IP operation.

FIT2029 Web programming – Students learn about principles of commercial e-business and e-commerce programming using scripting and mark-up languages.

Two elective units – These are free choice level 1, 2 or 3 units which may be taken from within the Faculty of Information Technology or from any other faculty in the university.

Third year

FIT3047 and FIT3048 Industrial experience project – Students have the opportunity to experience working in a small project team and, under the direction of a supervisor, develop an information system in a network environment in response to a client's requirements.

FIT3037 Software engineering – Topics include: lifecycle models, sizing, estimation, planning and control of projects, functional specification and design of real-time systems, formal specification using Z, integration and testing strategies, configuration management and re-engineering.

FIT3046 Operating environments – Students learn about processes and threads, deadlocks, memory management, input/output principles, file systems, security, and case studies of major operating systems.

FIT3028 Multimedia concepts and applications** – Introduces the basic processes of analysis and design for developing a complete functional specification for a multimedia/web-based application.

OR

FIT3130 Computer network design and deployment – Students learn to build computer network models and understand performance evaluation.

** Not available at South Africa campus

One information technology level 3 unit – this must be taken from within the Faculty of Information Technology.

Two elective units – These are free choice level 2 or 3 units which may be taken from within the Faculty of Information Technology or from any other faculty in the University.

Find out more today!

Contact the Gippsland School of Information Technology:

Tel: +61 3 9902 6835
email: gsit@infotech.monash.edu.au

Contact the Monash South Africa School of Information Technology:

Tel: +27 11 950 4030
email: sit@infotech.monash.edu

*Degree name pending government approval.

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