

Information systems

Information systems is the study of the application and use of information technology - hardware, software, networks, and database - by individuals and organisations. The Department of Information Systems is the University's newest department, founded in 1995 in recognition of the growing need to understand how information technology may be used in creative ways to enhance efficiency and effectiveness.

The Department's teaching and research cover those information technology and management topics that must be understood by any competent information systems professional. These topics are primarily technical, but also include accounting, economics, and organisational analysis and change. In addition, the Department strives to foster and encourage the ability to learn and re-learn, a necessary trait for career success in this rapidly changing field.

Bachelor of Information Systems

This course focuses on the design, specification, and creation of information systems, and on the human and organisational arrangements needed to use information systems to achieve organisational goals. To cover these increasingly interrelated topics, the course offers study in five key areas: information systems, information technology, organisations, analytical skills, and professional competencies.

Bachelor of Information Systems graduates will find employment in a variety of professional roles, ranging from the very technical to the very business oriented, in public and private organisations in Australia and overseas.

Information about the BIS course requirements can be found in the Bachelor of Information Systems entry on page 774.

Information systems subjects	Points
Core Subjects	
615-102 Accounting & Finance for Decision Making (p.829)	12.5
615-120 Information Systems in Organisations (p.829)	12.5
615-145 Concepts in Software Development I (p.830)	12.5
615-150 Organisational Processes (p.830)	12.5
615-155 Principles of Management (p.830)	12.5
615-160 Tools of Analysis (p.830)	12.5
615-230 Database Concepts (p.830)	12.5
615-237 Telecommunications Concepts (p.831)	12.5
615-240 Concepts in Software Development II (p.831)	12.5
615-245 Systems Analysis and Design (p.831)	12.5
615-251 Organisational Analysis and Change (p.831)	12.5
615-252 Electronic Commerce (p.831)	12.5
615-328 Managing the Impact of IT (p.832)	12.5
615-347 Application Environments (p.833)	12.5
615-350 Case Studies in Information Systems (p.833)	12.5
615-355 Legal & Ethical Framework (p.833)	12.5
615-370 Industrial Project (p.834)	12.5
615-372 Industrial Project A (p.834)	12.5
615-373 Industrial Project B (p.834)	12.5
Elective subjects	
615-220 Current Issues in Information Systems I (p.830)	12.5
615-250 Knowledge Management in Organisations (p.835)	12.5
615-253 Globalisation, Cultural Diversity & IS (p.835)	12.5
615-280 Multimedia and Communications (p.832)	12.5
615-325 Current Issues in Information Systems II (p.835)	12.5
615-330 Advanced Concepts in Database (p.832)	12.5
615-335 Distributed Systems (p.832)	12.5
615-340 Further Concepts in Software Development (p.836)	12.5
615-348 Human Computer Interaction (p.833)	12.5
615-354 Management Support Systems (p.836)	12.5
615-367 Information Systems Security (p.833)	12.5
615-380 Multimedia Design for Info. Systems (p.834)	12.5

BSc, BASc and BSc combined course students should check the subject entries that follow for information about which subjects are available for Science credit.

Bachelor of Information Systems (Honours)

For information about faculty and departmental entry requirements for Honours, please refer to *Bachelor of Science (Honours) and Bachelor of Information Systems (Honours) (p.883)*. These requirements should be considered when planning your course.

Subject descriptions for BIS program

615-102 Accounting & Finance for Decision Making

Note:

- This subject is regarded by the Faculty of Science as a *non-Science* subject for students enrolled in the BSc, BASc and combined BSc courses.
- This subject or 306-102 (Accounting Concepts) or 306-104 (Accounting 1B) is required for completion of the BIS. Students may not gain credit for this subject *and* either 306-102 or 306-104.

Credit points: 12.5

HECS-band: 2

Coordinator: Mr C Englezos; Mr J Carsten-Petersen

Contact: 24 lectures (two per week) and 11 tutorials (1 hour per week) (*Semester 1*).

Description: This subject equips information systems students with a basic understanding of the principles and the methodology employed in accounting and accounting information systems, so that they develop an appreciation of what represents a large proportion of information systems applications and so that they can usefully contribute to the justification, development and design of accounting information systems and other information systems that in some way involve accounting.

Topics include the basic and extended accounting equations, the basic financial and organisational structures of business, the concepts of accrual accounting and generally accepted accounting principles, financial statements, cost accounting, time value of money, relevant information for decision-making, systems requirements for accounting information systems, and planning and budgeting.

At the completion of this subject, students should:

- understand accounting concepts, terminology, and basic methodology;
- understand the basic structure and systems requirements of accounting information systems;
- be able to use discounted cash flow and other financial techniques for evaluating technology investments; and
- understand the uses, role, and nature of accounting systems for control, reporting, management information, and short- and long-term decision making.

Assessment: A 2-hour end-of-semester examination (70%), one assignment (15%) and a mid-semester test in class (15%). Satisfactory completion of this subject requires a pass in the examination.

615-120 Information Systems in Organisations

Note:

- This subject is regarded by the Faculty of Science as a *non-science* subject for students enrolled in the BSc, BASc and combined BSc courses.
- Students may not gain credit for 615-120 and any of 306-105 Business Computing, 306-205 Business Computing, 103-001 Computer Applications or 103-002 Internet Applications.

Credit points: 12.5

HECS-band: 2

Coordinator: To be announced

Contact: 36 lectures (three per week), 11 tutorials (1 hour per week) and 11 laboratory sessions (2 hours per week) (*Semester 1, repeat 2*).

Description: This foundation subject in the Bachelor of Information Systems is delivered through a combination of lectures, technology demonstrations, and laboratory exercises. A variety of software packages is used, including spreadsheets, database managers, and systems for collaborative work. To facilitate additional practical understanding of information systems, electronic messaging between students and faculty is used to distribute information, carry out discussion, complete assignments, and coordinate class activity. Typical commercial systems are examined, including financial, inventory, electronic markets, computer-aided design, manufacturing etc. Additional topics include a selection from introduction to computer organisation; local, wide area, and telecommunications networks; and programming paradigms including both procedural and object oriented.

At the completion of this subject, students should:

- understand the different types of information systems used in organisations, and the roles of these systems;
- understand the interaction of organisational and technical issues in the use of information systems;
- have hands-on experience in developing and using small personal information systems;
- appreciate the opportunities offered by information systems to create value in organisations, and appreciate as well some of the challenges in achieving that value;
- have a technical foundation for understanding the hardware and software components of information systems; and

- be able to describe the technical aspects of an information system, including capacity, scalability, reach and range, adherence to standards, fit with technical architecture, and inherent advantages and disadvantages.

Assessment: A 1-hour mid-semester written test; a 3-hour end-of-semester written examination; one group assignment; four individual assignments. Group and individual assignments together are expected to take about 25 hours. The weighting of assessment components will be announced at the commencement of the subject. Successful completion of this subject requires a pass in both the exam *and* the practical portion of the assessment.

615-145 Concepts in Software Development I

Note:

- 1 Students enrolled in the BSc, BAsC or a combined BSc course (except for the BSc/BIS) will receive science credit for the completion of this subject. This subject counts towards the Information Systems component for students enrolled in the BSc/BIS.
- 2 Students may not gain credit for both this subject and computer science 433-142.

Credit points: 12.5

HECS-band: 2

Coordinator: Ms T Linden

Prerequisites: 615-120 Information Systems in Organisations

Contact: 24 lectures (two per week); 12 tutorials (2 hours per week); 12 laboratory sessions (2 hours per week) (*Semester 2, repeat Summer*).

Description: On completing this subject, students should:

- be able to develop small applications using a state-of-art application framework and a high-level programming language;
- have an awareness of the processes of specifying, designing, writing, and testing a program;
- have a working knowledge of the structure of computer systems and the role of systems software;
- be able to formulate algorithmic solutions to small problems; and
- have an initial understanding of how to evaluate alternative approaches to solving problems algorithmically.

Assessment: A 2-hour end-of-semester exam, a 2-hour mid-semester practical test, and 25 hours worth of individual and group project work. The weighting of the assessment components will be announced at the commencement of the subject. Successful completion of this subject requires a pass in both the exam *and* the practical portion of the assessment.

615-150 Organisational Processes

Note:

- 1 This subject is regarded by the Faculty of Science as a *non-science* subject for students enrolled in the BSc, BAsC and combined BSc courses.
- 2 Students may not gain credit for 615-150 and any of 615-255 Organisational Processes, 306-106 Enterprise Process Analysis or 306-207 Accounting Information Systems.

Credit points: 12.5

HECS-band: 2

Coordinator: Dr P Seddon

Prerequisites: Nil

Contact: 24 lectures ((two per week), 11 tutorials (1 hour per week) (*Semester 2*).

Description: This subject focuses on a process view of organisations. A process is defined as a logically connected series of tasks that produce a defined output for a specified group of customers. Typically organisational processes cross functional boundaries within an organisation.

At the completion of this subject, students should be aware of major organisational processes (such as order management, billing, new product development etc.) found in many organisations; understand the advantages and limitations of a process view of organisations; and have experience with process and work flow analysis and measures of process effectiveness. Students should also understand the importance of human self-interest in organisations, and the need for controls in well-designed information systems. Finally, by the time they complete this subject, students should understand the fundamental premises and approaches of total quality management and business process (re)engineering; understand how vendors of enterprise software are attempting to provide software that can adapt as business needs change; and be aware of the implications of electronic commerce for supply chain processes.

Assessment: A 2-hour end-of-semester written examination, written work of up to 20 pages, group research and field projects taking approximately 20 hours in total. The weighting of the assessment components will be announced at the commencement of the subject.

615-155 Principles of Management

Note:

- 1 This subject is regarded as a *non-science* subject for students enrolled in the BSc, BAsC and combined BSc courses.
- 2 Students cannot gain credit for 615-155 and 327-101 or 325-101.

Credit points: 12.5

HECS-band: 2

Coordinator: Prof D Samson

Contact: 24 lectures (two per week), 11 tutorials (1 hour per week) (*Semester 1*).

Description: Subject description as for 325-101 Management (*p.415*).

Assessment: One 2-hour end-of-semester examination (70%) and an essay of up to 2000 words (30%).

615-160 Tools of Analysis

Note:

- 1 Students enrolled in the BSc, BAsC or a combined BSc course (except for the BSc/BIS) will receive science credit for the completion of this subject. This subject counts towards the Information Systems component for students enrolled in the BSc/BIS.
- 2 Students may not gain credit for both this subject and 620-131.

Credit points: 12.5

HECS-band: 2

Coordinator: Prof L Sonenberg

Contact: Two 1-hour lectures and a 1-hour supervised workshop per week. Additional unsupervised workshop time averaging 1 to 2 hours per week (*Semester 2*).

Description: Many software applications in everyday use have their foundation in mathematics. For example: the database query language SQL, used in many commercial products, is linked to relational algebra and relation calculus and hence to logic; modern security techniques, as used in products supporting digital signatures and facilitating email privacy, rely on number theory and abstract notions of complexity. This subject introduces these and other applications, in order to motivate and study the underlying mathematical ideas. Topics will include propositional and predicate logic, counting principles and data complexity, public key cryptography.

Assessment: One written exam of up to three hours, up to 15 pages of project work, and a test totalling no more than two hours, during the semester. The weighting of the assessment components will be announced at the commencement of the subject.

615-220 Current Issues in Information Systems I

Note: Students enrolled in the BSc, BAsC or a combined BSc course (except for the BSc/BIS) will receive science credit for the completion of this subject. This subject counts towards the Information Systems component for students enrolled in the BSc/BIS.

Credit points: 12.5

HECS-band: 2

Coordinator: To be announced

Prerequisites: 62.5 points of information systems subjects.

Contact: 24 lectures (two per week), seminar discussions (up to 2 hours per week) (*Semester 2*).

Description: The topics covered in this subject vary to maintain currency with current thinking and discussion in the information systems profession. Examples of possible topics include computer-aided software engineering; the information super-highway; business opportunities on the Internet; information privacy; why information systems fail; emerging technologies; information ecology; and the role of information systems in organisational change; client server computing, object oriented approaches, information systems planning, open systems, evaluation and selection of software packages, information politics, information behaviour, and the value of information. Students will choose or be given topics to be investigated either individually or in groups, and will perform library, on-line, and field research, prepare and deliver reports and presentations, and analyse and critically evaluate the reports and presentations of other students.

At the completion of this subject, students should:

- be conversant with a range of current technical and organisational issues related to information systems; and
- have explored these current issues in information systems while developing analytical skills and personal competencies in research, data collection and analysis, writing, listening, presenting, and working in teams.

Assessment: Continuous assessment based on individual and group reports, presentations, and critiques. Student peer critiques will be a component of the assessment. Weighting of the assessment components will be announced at the commencement of the subject.

615-230 Database Concepts

Note:

- 1 This subject is regarded as a *non-science* subject for students enrolled in the BSc, BAsC and combined BSc courses.

2 Students who have completed 433-351 may not subsequently gain credit for 615-230.

Credit points: 12.5

HECS-band: 2

Coordinator: Dr S Milton

Prerequisites: 615-145 Concepts in Software Development I. Students who receive a credit or exemption for 615-145 should be aware that prior knowledge of and experience in using Delphi programming is assumed for students attempting 615-230. Students inexperienced in using Delphi will need to acquire this skill in their own time.

Contact: 36 lectures (three per week), 11 tutorials (1 hour per week), 11 laboratories (1 hour per week) (*Semester 1*).

Description: Topics may include, but are not restricted to, the following: the managerial view of data, information, and knowledge; data modelling for relational databases; SQL; database architectures and implementations; non-relational databases such as hierarchical, network, and object-oriented databases; data integrity; data warehousing; data administration; and alternative organisational memory technologies such as groupware.

On completing this subject, students should be familiar with:

- the role databases have within organisations;
- database design;
- database manipulation; and
- data administration.

Assessment: One 3-hour end-of-semester exam, and 40 hours of individual and group project work. The weighting of the assessment components will be announced at the commencement of the subject. Successful completion of this subject requires a pass in both the exam *and* the practical portion of the assessment.

615-237 Telecommunications Concepts

Note: This subject is regarded as a *non-science* subject for students enrolled in the BSc, BASc and combined BSc courses.

Credit points: 12.5

HECS-band: 2

Coordinator: Dr A B Ruighaver

Prerequisites: 615-145 Concepts in Software Development I

Contact: 36 lectures (three per week), 11 tutorial (1 hour per week) (*Semester 2*).

Description: Aspects of the following topics will be considered: aspects of data transmission (synchronous and asynchronous transmission, error detection and correction, and compression) and local and wide area networks (architectures, protocols, and issues); organisational options (data and telecommunications architectures, protocols, in-house networks, out-sourcing); and other telecommunications concepts and business applications.

At the completion of this subject, students should:

- understand the fundamentals of data communication and computer networks;
- understand the interface standards and protocols associated with the internet and other data networks;
- be aware of the range of international standard protocols that achieve open systems interconnection; and
- understand the options organisations have for building or purchasing telecommunications services including business applications.

Assessment: A 3-hour end-of-semester written examination, 40 hours of individual and group project work. The weighting of the assessment components will be announced at the commencement of the subject.

615-240 Concepts in Software Development II

Note: Students enrolled in the BSc, BASc or a combined BSc course (except for the BSc/BIS) will receive science credit for the completion of this subject. This subject counts towards the Information Systems component for students enrolled in the BSc/BIS.

Credit points: 12.5

HECS-band: 2

Coordinator: Ms T Linden

Prerequisites: 615-145 Concepts in Software Development I (or 433-142 and 615-120).

Contact: 36 lectures (three per week), 11 tutorials (1 hour per week), laboratory work (2 hours per week) (*Semester 1*).

Description: This subject consists of a survey of major programming paradigms, including object-oriented programming techniques; and discussion of the software development life-cycle and the tools available to facilitate software development.

At the completion of this subject, students should:

- be familiar with the use of common high-level language constructs;
- be familiar with the concepts of both procedural languages and some object-oriented languages;
- be able to select an appropriate language for a given problem;

- be able to design, write, test, and debug non-trivial programs; and
- be able to use a range of software development tools.

Assessment: End-of-semester written examination of 2 hours; group projects taking up to 40 hours per team member; continuous assessment. Successful completion of this subject requires a pass in the exam *and* the projects portion of the assessment. The weighting of assessment components will be announced at the commencement of the subject.

615-245 Systems Analysis and Design

Note: Students enrolled in the BSc, BASc or a combined BSc course (except for the BSc/BIS) will receive science credit for the completion of this subject. This subject counts towards the Information Systems component for students enrolled in the BSc/BIS.

Credit points: 12.5

HECS-band: 2

Coordinator: Mr J Cybulski

Prerequisites: 615-150 Organisational Processes, or equivalent; and 615-230 Database Concepts.

Contact: 24 lectures (two per week), laboratory work (2 hours per week), seminar discussion and preparation (1 hour per week) (*Semester 2*).

Description: This subject introduces the fundamental processes of identifying requirements, specifying, and designing information systems. Students will gain experience in the tools and techniques for all stages of the analysis and design cycle. Topics may include analysis techniques, data modelling, feasibility assessment, process modelling, automated support tools including Computer Aided Software Engineering (CASE), database design and specification, prototyping, and systems development methodologies.

At the completion of this subject, students should:

- understand structured and object-oriented software development;
- be able to apply appropriate techniques to different stages of software life-cycle;
- have hands-on experience with software development tools for systems analysis and design; and
- be able to participate in team projects involving analysis and design of medium-scale information systems.

Assessment: A 2-hour end-of-semester written exam; group projects. The project work is expected to take up to 40 hours in total. The weighting of the assessment components will be announced at the commencement of the subject. Successful completion of this subject requires a pass in both the exam *and* the practical portion of the assessment.

615-251 Organisational Analysis and Change

Note:

- 1 This subject is regarded as a *non-science* subject for students enrolled in the BSc, BASc and combined BSc courses.
- 2 Students cannot receive credit for 615-251 and any of 615-351 Organisational Analysis and Change, 615-352 Organisational Analysis and Change (prior to 2001) or 325-304 Organisational Analysis.

Credit points: 12.5

HECS-band: 2

Coordinator: To be announced

Prerequisites: 615-150 Organisational Processes, or equivalent.

Contact: 24 lectures (two per week), 11 seminar discussions (2 hours per week) (*Semester 1*).

Description: This subject explores the relationship between information systems implementation and organisational change, focusing on managing the change process. Topics may include techniques for organisational assessment and the role of sponsors, targets, change agents, and external parties such as consultants. The subject will be taught with a combination of lectures and tutorials.

At the completion of this subject, students should understand the relationship between information systems implementation and organisational change; be familiar with some techniques of organisational assessment and diagnosis; have explored the process of change in organisations, including resistance to change; and understand the range of actions that can be taken to facilitate organisational change.

Assessment: A 3-hour end-of-semester written examination; individual projects; group project. The project work is expected to take an average of 6 hours per week. Weighting of the assessment components will be announced at the commencement of the subject.

615-252 Electronic Commerce

Note:

- 1 This subject is regarded by the Faculty of Science as a *non-science* subject for students enrolled in the BSc, BASc and combined BSc courses.
- 2 Students may not gain credit for 615-252 and either 615-325 Current Issues in Information Systems II (Electronic Commerce) or 306-316 Electronic Commerce.

Credit points: 12.5**HECS-band:** 2**Coordinator:** Ms J Carroll**Prerequisites:** 615-150 Organisational Processes, or equivalent; and 615-155 Principles of Management**Corequisites:** 615-237 Telecommunications Concepts**Contact:** 24 lectures (two per week), 11 tutorials (1 hour per week) (*Semester 2*).

Description: This subject provides a detailed overview of the concepts and processes used in doing business electronically. This will include information exchange processes (EDI) and inter- and intra-organisational communications; electronic exchange and business including EFT, smart cards and electronic money; security issues and networks; internets, intranets and extranets; business models and e-commerce; the internet customer and marketing; economics and e-commerce; taxation, business and exchange issues in e-commerce; and legal and ethical issues in e-commerce. Students will receive experience in using and adapting existing WWW and electronic commerce software in developing applications of e-commerce in real-world contexts.

Assessment: A 2-hour end-of-semester written examination, written work of up to 20 pages, group research and field projects taking approximately 20 hours in total. The weighting of the assessment components will be announced at the commencement of the subject.

615-280 Multimedia and Communications

Note:

- 1 This subject is regarded as a *non-science* subject for students enrolled in the BSc, BASc and combined BSc courses.
- 2 Students may not gain credit for 615-280 and 103-002 Internet Applications.

Credit points: 12.5**HECS-band:** 2**Coordinator:** Mr J Pearce**Prerequisites:** 615-120 Information Systems in Organisations or equivalent. Entry to this subject is restricted to students who have completed 62.5 points of first year subjects.**Contact:** 24 lectures (two per week), 24 hours of laboratory work, 11 hours of tutorials/seminar. Some of these contact hours will be offered as on-line interactions (*Semester 1*).

Description: This subject deals with the advanced application of multimedia, networking and related technologies to areas such as learning, research, data acquisition, making simulations, publishing and communication.

digital text, sound, graphics, movies, web documents and internet communications strategies will be developed and used for the presentation of information and lead into an exploration of the benefits that these technologies offer. A feature of the subject will be project work through teams. Students will be required to form a critical evaluation of the way in which multimedia technologies and networking are changing communication and practice in the fields of science and information technology.

A project component of the subject will allow students to focus on an area of research or development and communicate this through the use of web-based multimedia. Students will be expected to spend significant time 'on-line' where subject outlines, discussion forums and exercises will be described. Computing facilities will be made available for this.

Assessment: An electronic folio that will include material compiled during the subject. The assessment will take into account advanced skills developed in the use of multimedia and networking technology, evidence of appropriate application of such technology for science communications and a critical appreciation of the issues involved in the impact of new communication strategies on science and technology communication and practice. Details of the weighting of the assessment components will be made known at the beginning of the subject.

615-328 Managing the Impact of IT

Note:

- 1 This subject is regarded as a *non-science* subject for students enrolled in the BSc, BASc, and combined BSc courses.
- 2 Students cannot gain credit for 615-328 and either 615-327 Management of Information Systems, or 615-302 The Economics of Information and Information Technology.

Credit points: 12.5**HECS-band:** 2**Coordinator:** Ms M Sandow-Quirk**Prerequisites:** 615-251 Organisational Analysis and Change or 615351 Organisational Analysis and Change.**Contact:** 24 lectures (two per week), 11 seminar discussions (up to 2 hours per week) (*Semester 2*).

Description: This is a capstone subject which integrates the learning undertaken in earlier information systems subjects. It encourages students to explore and reflect upon the nature and consequences of information systems.

Topics may include a critical examination of information systems as socio-technical systems which combine people, information and technology; human information behavior; the characteristics of information, in particular its economic aspects; the characteristics of information technology, its transformational potential, and its organisational and social consequences. Particular emphasis will be placed on alternatives to the dominant information systems paradigm, such as the soft systems and postmodernist approaches. The subject will be taught with a combination of lectures and tutorials.

At the completion of the subject, should:

- understand the complexities of the relationships between people, information and technology in an information system;
- be familiar with a range of techniques for conceptualising organisational information systems;
- be able to manage the organisational consequences of developing and implementing information systems; and
- understand the potential social consequences of choices made in the development and implementation of information systems

Assessment: Assessment is by a combination of individual and group projects, and an end-of-semester written examination. Group and individual assignments together are expected to take about four hours per week. The weighting of assessment components will be announced at the commencement of the subject.

615-330 Advanced Concepts in Database

Note: This subject is regarded as a *non-science* subject for students enrolled in the BSc, BASc and combined BSc courses.

Credit points: 12.5**HECS-band:** 2**Coordinator:** Mr S Maynard**Prerequisites:** A grade of at least H3 for 615-230 Database Concepts and successful completion of 62.5 200-level IS subjects.**Contact:** 24 lectures (3 hours per week), 11 laboratory based seminars (2 hours per week) (*Semester 2*).

Description: Topics may include, but are not restricted to the following: database administration; advanced data modelling (focusing on relational but possibly including network, hierarchical and object oriented); relational database issues (query processing, and optimisation); data management; and database application development. This subject may include heavy involvement from one of the department's industry partners.

At the completion of this subject, students should:

- have an in-depth knowledge of the relational database model;
- be able to write efficient database administration; and
- be able to build moderately complex database applications and SQL queries.

Assessment: A 3-hour end-of-semester written examination and assigned project work expected to average 8 hours per week. Weighting of the assessment components will be announced at the commencement of the subject.

615-335 Distributed Systems

Note: Students enrolled in the BSc, BASc or a combined BSc course (except for the BSc/BIS) will receive science credit for the completion of this subject. This subject counts towards the Information Systems component for students enrolled in the BSc/BIS.

Credit points: 12.5**HECS-band:** 2**Coordinator:** Prof I Morrison**Prerequisites:** 615-237 Telecommunications Concepts and 615-240 Concepts in Software Development II**Contact:** 24 lectures (two per week) plus practical/tutorial sessions of up to 2 hours per week (*Semester 2*).

Description: Aspects of the following topics will be considered: distributed systems (typical examples, database and application design, reliability and security); client server architectures (design, planning, reliability, security, and performance); distributed systems development environments and implementation using Java and CORBA; and distributed object-based systems.

At the completion of this subject, students should:

- have a firm understanding of the significant issues involved in the design, implementation, and management of distributed systems in organisations; and
- be able to build small client-server applications using an application development framework based on Java and CORBA technologies and frameworks.

Assessment: A 3-hour end-of-semester written examination and assigned project work expected to average 8 hours per week. The weighting of the assessment components will be announced at the commencement of the subject.

615-347 Application Environments

Note: This subject is regarded as a *non-science* subject for students enrolled in the BSc, BASc and combined BSc courses.

Credit points: 12.5

HECS-band: 2

Coordinator: Mr S Maynard

Prerequisites: 615-230 Database Concepts, 615-240 Concepts in Software Development II, 615-237 Telecommunications Concepts.

Contact: 24 Lectures (two per week), 11 tutorials (1 hour per week) (*Semester 1*).

Description: Implementation of an information system on a computer requires documentation, coding, testing and commissioning of a suite of programs, the applications, in a chosen hardware, software and business environment. The information systems development processes must be matched to the development methodology, and the application environment and implementation be tailored to suit not just organisational structure but characteristics of the underlying computer systems and associated support software.

This subject provides an overview of the main elements of the information systems applications environment including: computer supported cooperative work; the structure of common applications environments; and the tools available within these environments. The subject provides valuable practical experience in the development, management and use of information systems applications in a number of common environments.

At the successful conclusion of the subject, the student should:

- have developed an understanding of the importance of teams within IS development;
- have used CSCW applications in support of the development process; and
- have developed an understanding of the major characteristics of computer systems and the ways these support the development and management of information systems.

Assessment: A 2-hour end-of-semester written examination. Group and Individual Project work to average 4 hours per week throughout the semester. Weighting of assessment components to be announced at the commencement of the subject.

615-348 Human Computer Interaction

Note:

- 1 Students enrolled in the BSc, BASc or a combined BSc course (except for the BSc/BIS) will receive science credit for the completion of this subject. This subject counts towards the Information Systems component for students enrolled in the BSc/BIS.
- 2 Credit cannot be granted for 615-348 and 615-247 (prior to 2001)

Credit points: 12.5

HECS-band: 2

Coordinator: Dr S Howard

Prerequisites: 50 points of 200-level subjects. Some familiarity with software engineering would be an advantage.

Contact: 24 lectures (two per week), workshops (2 hours per week) (*Semester 1*).

Description: Aspects of the following topics will be considered: theoretical foundations (conceptual theories, user characteristics, user modelling); UI technology (human-computer dialogues and input technology); and usability engineering (user-centred design; user needs analysis; participatory design and usability evaluation). Other issues in HCI will also be introduced.

At the completion of this subject, students should:

- have knowledge of the technical, cognitive and social factors that can make interactive software effective;
- understand and be able to apply user-centred design techniques;
- be aware of the range of design principles and guidelines that can assist user interface designers, and understand the limitations of such guidelines;
- understand the advantages and disadvantages of usability engineering and various approaches available.

Assessment: End-of-semester written examination; individual and group project work. Weighting of the assessment components will be announced at the commencement of the subject.

615-350 Case Studies in Information Systems

Note: This subject is regarded as a *non-science* subject for students enrolled in the BSc, BASc and combined BSc courses.

Credit points: 12.5

HECS-band: 2

Coordinator: Dr P Seddon

Prerequisites: 615-245 Systems Analysis and Design and 615-251 Organisational Analysis and Change.

Contact: 24 lectures (two 2-hour lectures per week) (*Semester 2*).

Description: This is an integrative subject intended to incorporate the principles that have been addressed in earlier parts of the course. A combination of Australian and overseas case studies will be used.

At the completion of this subject, students should:

- be familiar with the experiences of a variety of organisations as they design, develop, implement, and use information systems;
- have experience in dealing with the complexity, politics, and reality of information systems in actual organisational contexts;
- have experience with the case method of learning to develop analytical, synthesis, listening, and presentation skills;
- know how to learn and generalise from the experiences of individual organisations; and
- be exposed to the operations and culture of organisations, both well and poorly run, in various countries.

Assessment: Class participation, individual case study analysis and presentation, group case study assignment, end-of-semester examination of up to two hours. Student peer critiques will be a component of the assessment. The individual and group case study assignments are expected to take up to ten hours per week. The weighting of the assessment components will be announced at the commencement of the subject.

615-355 Legal & Ethical Framework

Note:

- 1 This subject is regarded as a *non-science* subject for students enrolled in the BSc, BASc and combined BSc courses.
- 2 Students cannot receive credit for 615-355 and Computer Science 433-343.

Credit points: 12.5

HECS-band: 1

Coordinator: To be announced

Prerequisites: 62.5 points of 200-level subjects.

Contact: Three scheduled sessions per week with occasional additional sessions for guest lecturers (*Semester 1*).

Description: This subject introduces some of the legal and ethical issues associated with the effective use of information systems in a complex organisational and societal framework. Alternative legal business entities and types of contracts are defined. The subject then explores the development and implementation of information systems in ways that satisfy legal, ethical and business requirements.

Topics may include business entities (companies, partnerships, trusts etc.), contracts, copyright and patents, privacy and confidentiality, and computer crime.

At the completion of this subject, students should:

- have an understanding of the legal framework of business with respect to information systems, including business entities, intellectual property, contracts, and privacy;
- be exposed to, and have grappled with, a series of practical ethical questions; and
- have constructed a personal frame of reference for ethical practice.

Assessment: Assessment is based on performance in a combination of requirements that may include participation in tutorials, written assignments (not exceeding 10 000 words in total), oral presentation, and exams. Weighting of the assessment components will be announced at the commencement of the subject.

615-367 Information Systems Security

Note: This subject is regarded as a *non-science* subject for students enrolled in the BSc, BASc and combined BSc courses.

Credit points: 12.5

HECS-band: 2

Coordinator: Dr A B Ruighaver

Prerequisites: 615-237 Telecommunications concepts

Contact: 24 Lectures (two per week) and up to 8 hours of project work per week (*Semester 1*).

Description: On completion of this subject a student should:

- demonstrate an understanding of the complexity of information security;
- be familiar with the issues in the management of information security;
- be able to identify and assess the critical threats to an information system;
- be able to perform a preliminary security audit of a computer system;
- have developed the skills to plan for and react to a security incident.

Topics to be covered include: introduction to computer security; issues in network and system security; physical security; inter-network security and firewalls; viruses and worms; management of computer security; auditing; risk analysis; incident handling; recovery; legal issues in computer security.

Assessment: A mixture of continuous assessment based on assignments, mid-term and final examinations, and project work. The precise composition

and weighting of assessment components will be made known at the beginning of the subject.

615-370 Industrial Project

Note:

- 1 Students enrolled in the BSc, BAsC or a combined BSc course (except for the BSc/BIS) will receive science credit for the completion of this subject. This subject counts towards the Information Systems component for students enrolled in the BSc/BIS.
- 2 Students cannot receive credit for both 615-371 Information Systems Project and 615-370 Industrial Project.

Credit points: 12.5

HECS-band: 2

Coordinator: Mr J Pearce

Prerequisites: 615-245 (Systems Analysis and Design) and 615-275 (Project Management).

Contact: Tutorials (1 hour per week), project work (4 hours per week). One 3-hour meeting per month (*Summer semester*).

Description: This subject is based around the completion of a significant information systems project that is of immediate practical use. Clients of the project will be both external and internal to the University. Students may work in teams, depending on the size of the project. Regular meetings of the entire group of students in the subject will be the occasion for students to provide progress reports. There will be lectures and discussions on such topics as project selection, the project process, relevant Australian standards, and information technology architectures.

At the completion of this subject, students should have gained experience in:

- applying the tools and techniques covered in the course;
- selecting, planning, executing, managing, reporting on, documenting, and completing a substantial information systems project; and
- working alone and using a support group of fellow students and an academic staff member.

Assessment: End-of-semester project report and presentation. Students may be assessed on individual contributions to group work. Weighting of the assessment components will be announced at the commencement of the subject.

615-372 Industrial Project A

Note:

- 1 This subject is regarded as a *non-science* subject for students enrolled in the BSc, BAsC and combined BSc courses.
- 2 Students cannot gain credit for both 615-372 and 615-275 Project Management.

Credit points: 12.5

HECS-band: 2

Coordinator: To be announced

Prerequisites: 615-245 System Analysis Design, this subject should be taken in sequence with 617-373

Contact: 24 lectures (two per week), 11 tutorials (1 hour per week), project work (7 hours) (*Semester 1*).

Description: This subject will include aspects of the following topics: introduction to software requirements, project management, the project life cycle, project tasks and deliverables, defining projects and establishing project contracts, requirements analysis, feasibility analysis, cost estimation and cost/benefit analysis, project scheduling, activity networks, critical path analysis, resource leveling, risk management, quality assurance, managing project phases and project resources, testing and project delivery, post implementation review, and human aspects, interpersonal communication, teamwork, project leadership.

At the completion of this subject, students should:

- understand the motivation for use of good management practice in IS projects;
- be familiar with the various stages of the project life cycle, and the tasks and deliverables for each stage;
- have an appreciation of the risks involved in large projects and be familiar with techniques of risk management;
- be familiar with the various scheduling techniques available for project management, and be able to apply techniques such as PERT, CPM, and resource leveling to project plans;
- be capable of undertaking project costing and estimation; and
- recognise that human resources are an integral part of IT projects and need to be carefully managed.

Assessment: End-of-semester written examination of up to three hours, one individual assignment, one group project and one group presentation. Project work of 7 hours per week. The weighting of the assessment components will be announced at the commencement of the subject.

615-373 Industrial Project B

Note:

- 1 Students enrolled in the BSc, BAsC or a combined BSc course (except for the BSc/BIS) will receive science credit for the completion of this subject. This subject counts towards the Information Systems component for students enrolled in the BSc/BIS.
- 2 Students cannot gain credit for both 615-373 and 615-370 or 615-371.

Credit points: 12.5

HECS-band: 2

Coordinator: To be announced

Prerequisites: 615-372 Industrial Project A

Contact: 12 lectures (1 hour per week), project work (9 hours) (*Semester 2*).

Description: This subject is based around the completion of a significant information systems project that is of immediate practical use. Clients of the project will be both external and internal to the University. Students may work in teams, depending on the size of the project. Regular meetings of the entire group of students in the subject will be the occasion for students to provide progress reports. There will be lectures and discussions on such topics as project selection, the project process, relevant Australian standards, and information technology architectures.

At the completion of this subject, students should have gained experience in:

- applying the tools and techniques covered in the course;
- selecting, planning, executing, managing, reporting on, documenting, and completing a substantial information systems project; and
- working alone and using a support group of fellow students and an academic staff member.

Assessment: End-of-year project report and presentation. Weighting of the assessment components will be announced at the commencement of the subject.

615-380 Multimedia Design for Info. Systems

Note:

- This subject is regarded as a *non-science* subject for students enrolled in the BSc, BAsC and combined BSc courses.
- This subject is quota restricted for 2001. Selection into quota subjects is based on academic merit, refer to quota *Selection process* (p.760).

Credit points: 12.5

HECS-band: 2

Coordinator: Mr J Pearce

Prerequisites: 615-280 Multimedia and Communications

Contact: 24 lectures (two per week), 8 hours of project work per week, which will include formal workshops and seminars (*Semester 2*).

Description: Multimedia and the web are becoming increasingly important in the application of information systems to commerce, education, communications, media, health, government, hospitality, manufacturing, distribution and other industries. In this subject, students will examine, develop and implement multimedia for information systems in these contexts and consider future trends.

The subject will consider theoretical foundations of multimedia (for example, visual and graphical theory), multimedia development processes (for example, design and evaluation, management and planning), advanced technical issues (for example, streaming video, DHTML and XML), and applications of multimedia. Students should acquire advanced knowledge and skills in each of these areas.

Part of the work over the semester will be carried out in teams which assess the needs of industry groups for multimedia treatment of their information systems and devise appropriate solutions.

Assessment: End-of-semester project report and presentation. An electronic folio that will include material compiled during the subject. Details of the weighting of the assessment components will be made known at the beginning of the subject.

615-381 Business Processes

Note:

- 1 This subject is regarded by the Faculty of Science as a *non-science* subject for students enrolled in the BSc, BAsC and combined BSc courses.
- 2 Students may not receive credit for this subject and for 615-150 Organisational Processes, 615-255 Organisational Processes, or 306-207 Accounting Information Systems.
- 3 This subject is taken by graduate diploma students. Undergraduate students may be permitted to undertake the subject with written approval from the head of department.

Credit points: 12.5

HECS-band: 2

Coordinator: Dr P Seddon

Contact: 24 lectures (two per week), tutorials (1 hour per week) (*Semester 2*).

Description: This subject focusses on a process view of organisations. Here, a process is defined as a logically connected series of tasks that produce a defined output for a specified group of customers. Typically these processes cross functional boundaries within the organisation.

At the completion of this subject, students should be aware of major organisational processes (such as order management, billing, new-product development etc.) found in many organisations; understand the advantages and limitations of a process view of organisations; and have experience with process and work-flow analysis and measures of process effectiveness. Students should also understand the importance of human self-interest in organisations, and the need for controls in well-designed information systems. Finally, by the time they complete this subject, students should understand the fundamental premises and approaches of business process (re)engineering; understand how vendors of enterprise software are attempting to provide software than can adapt as business needs change; and be aware of the implications of electronic commerce for supply chain processes.

Assessment: A 2-hour end-of-semester written examination, one 2000 word essay, written work of up to 20 pages, group research and field projects taking approximately 20 hours in total. The weighting of the assessment components will be announced at the commencement of the subject.

615-382 Business Systems Analysis and Design

Note:

- 1 This subject is taken by graduate diploma students. Undergraduate students may be permitted to undertake the subject with written approval from the head of department.
- 2 Students enrolled in the BSc, BASc or a combined BSc course (except for the BSc/BIS) will receive science credit for the completion of this subject. This subject counts towards the Information Systems component for students enrolled in the BSc/BIS.
- 3 Students may not receive credit for this subject and for 615-245 Systems Analysis and Design.

Credit points: 12.5

HECS-band: 2

Coordinator: Mr J Cybulski

Prerequisites: 615-230 Database Concepts

Corequisites: 615-381 Business Processes

Contact: 24 lectures (two per week), laboratory work (2 hours per week), seminar discussion and preparation (1-hour per week) (*Semester 2*).

Description: This subject introduces the fundamental processes of identifying requirements, specifying, and designing information systems. Students will gain experience in the tools and techniques for all stages of the analysis and design cycle. Topics may include analysis techniques, data modelling, feasibility assessment, process modelling, automated support tools including computer-aided software engineering (CASE), database design and specification, prototyping, and systems-development methodologies.

At the completion of this subject, students should:

- understand structured and object-oriented software development;
- be able to apply appropriate techniques to different stages of software life-cycle;
- have hands-on experience with software development tools for systems analysis and design; and
- be able to participate in team projects involving analysis and design of medium-scale information systems.

Assessment: A 2-hour end-of-semester written exam; group projects. The project work is expected to take up to 40 hours in total. The weighting of the assessment components will be announced at the commencement of the subject. Successful completion of this subject requires a pass in both the exam and the practical portion of the assessment.

Subjects not offered in 2001

615-250 Knowledge Management in Organisations

Note: This subject is regarded by the Faculty of Science as a *non-science* subject for students enrolled in the BSc, BASc and combined BSc courses.

Credit points: 12.5

HECS-band: 2

Coordinator: Ms M Sandow-Quirk

Prerequisites: 615-251 Organisational Analysis and Change

Contact: 24 lectures (two per week), seminars (1 hour per week) (*Not Offered*).

Description: This subject deals with knowledge as an organisational resource and its importance for innovation and organisational learning.

Topics to be covered include types of knowledge and knowledge processes in organisations; the impact of organisational structure and culture on the distribution and exploitation of organisational knowledge; the relationship between tacit and codified knowledge; the development and content of knowledge

management policies; techniques of information and knowledge mapping; and means of acquiring and evaluating social and corporate intelligence.

At the completion of the subject, the student should be able to:

- demonstrate an understanding of the nature of knowledge as an organisational resource;
- identify the different kinds of knowledge found in organisations and those aspects of organisational structure, policy and culture that enhance its value;
- use a selection of tools and techniques for mapping organisational knowledge; and
- apply information technology to problems of knowledge management in organisations.

Assessment: A 2-hour end-of-semester written examination; one individual assignment; one individual or group class presentation. The weighting of assessment components will be announced at the commencement of the subject.

615-253 Globalisation, Cultural Diversity & IS

Note: This subject is regarded as a *non-science* subject for students enrolled in the BSc, BASc and combined BSc courses.

Credit points: 12.5

HECS-band: 2

Coordinator: To be announced

Prerequisites: 615-120 Information Systems in Organisations

Contact: 24 lectures (two per week), 11 seminar discussions (up to 2 hours per week) (*Not Offered*).

Description: Topics covered in this course will include, but are not limited to, the technical and managerial aspects of information systems development and implementation in terms of globalisation and different cultural impacts; definitions of globalisation and culture and an analysis of the Hofstede model of cultural impact and behaviour; application of the Hofstede model to information systems development in practice in Asian, African and European contexts to both describe and explain deviation from expected 'Western practice'; the impact of culture on all types of information systems including executive information systems, expert systems and decision support systems; and the nature of national policy on IT and IS development will frame a detailed development of managerial responses to cultural impact.

At the conclusion of this subject students will have:

- understood the concepts of globalisation and cultural diversity and evaluated the impact of those concepts on information systems development and implementation;
- described and defined the elements of culture that impact on information systems decision making;
- described the impact of culturally formed behavior on the systems development life cycle;
- described and explained how cultural behavior influences the nature of information systems, executive information systems, expert systems and decision support systems; and
- practiced workplace simulations reflecting cultural difference in information system development.

Assessment: A 3-hour end-of-semester exam and assigned project work expected to average 6-8 hours per week. Weighting of the assessment components will be announced at the commencement of the subject.

615-325 Current Issues in Information Systems II

Note: Students enrolled in the BSc, BASc or a combined BSc course (except for the BSc/BIS) will receive science credit for the completion of this subject. This subject counts towards the Information Systems component for students enrolled in the BSc/BIS.

Credit points: 12.5

HECS-band: 2

Coordinator: To be announced

Prerequisites: 62.5 points from information systems subjects

Contact: 24 lectures (two per week), seminar discussions (up to 2 hours per week) (*Not Offered*).

Description: The topics covered in this subject vary to maintain currency with change in the information systems profession. Examples of possible topics include computer-aided software engineering; the information super-highway; business opportunities on the internet; information privacy; why information systems fail; emerging technologies; information ecology; the role of information systems in organisational change; client server computing, object oriented approaches, information systems planning, open systems, evaluation and selection of software packages, information politics, information behaviour, and the value of information. Students will choose or be given topics to be investigated either individually or in groups, and will perform library, on-line, and field research, prepare and deliver reports and presentations, and analyse and critically evaluate the reports and presentations of other students.

At the completion of this subject, students should:

- be conversant with a range of current technical and organisational issues related to information systems; and
- have explored these current issues in information systems while developing analytical skills and personal competencies in research, data collection and analysis, writing, listening, presenting, and working in teams.

Assessment: Continuous assessment based on individual and group reports, presentations, and critiques. Student peer critiques will be a component of the assessment. Two-hour end-of-semester examination. Weighting of the assessment components will be announced at the commencement of the subject.

615-340 Further Concepts in Software Development

Note: This subject is regarded as a *non-science* subject for students enrolled in the BSc, BASc and combined BSc courses.

Credit points: 12.5

HECS-band: 2

Coordinator: Mr J Cybulski

Prerequisites: 615-245 Systems Analysis and Design and 615-240 Concepts in Software Development II

Contact: 24 lectures (two per week) (*Not Offered*).

Description: Topics may include Australian and international standards for software and documentation quality; joint application design (JAD), rapid application delivery (RAD), and other development methods; computer-aided software engineering (CASE) and other development tools; management of the software development process.

At the completion of this subject, students should:

- understand a range of modern software development standards, methods, and tools, and be aware of how these are applied in the production of software;
- have experience in team-oriented approaches to software development; and
- have developed a greater understanding of software design and testing.

Assessment: A 3-hour end-of-semester written examination; group software project work (6 hours per week). The weighting of the assessment components will be announced at the commencement of the subject.

615-354 Management Support Systems

Note:

- This subject is regarded as a *non-science* subject for students enrolled in the BSc, BASc and combined BSc courses.
- Students cannot gain credit for both 615-354 and 306-307 Management Information Systems.

Credit points: 12.5

HECS-band: 2

Coordinator: Mr S Maynard; Dr G Shanks

Prerequisites: 615-251 Organisational Analysis and Change, 615-245 System Analysis and Design

Contact: 12 lecturers (two per week) (*Not Offered*).

Description: Information systems are used extensively in organisations for supporting managerial work. Several levels of management are supported by a variety of tools including decision support systems (DSS), expert systems (ES), executive information systems (EIS), and management information systems (MIS). Aspects of the following topics will be considered: managerial work, decision making approaches, decision quality, systems for managerial work (MIS, DSS, EIS, ES), group support, data warehousing, and data mining.

At the completion of this subject students should be able to:

- understand and evaluate how managers work;
- understand and evaluate how decisions are made; and
- understand and evaluate the types of information systems designed for managerial work.

Assessment: A 2-hour end-of-semester exam and assigned project work expected to average up to 8 hours per week. Weighting of the assessment components will be announced at the commencement of the subject.