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. 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 20.

Information systems subjects		Points
Core Subjects		
615-120	Information Systems in Organisations *(p.1)*	12.5
615-145	Concepts in Software Development I *(p.2)*	12.5
615-150	Organisational Processes *(p.2)*	12.5
615-160	Tools of Analysis *(p.2)*	12.5
615-230	Database Concepts *(p.2)*	12.5
615-237	Telecommunications Concepts *(p.2)*	12.5
615-240	Concepts in Software Development II *(p.3)*	12.5
615-245	Systems Analysis and Design *(p.3)*	12.5
615-251	Organisational Analysis and Change *(p.3)*	12.5
615-252	Electronic Commerce *(p.3)*	12.5
615-328	Managing the Impact of IS *(p.4)*	12.5
615-347	Application Environments *(p.5)*	12.5
615-350	Case Studies in Information Systems *(p.5)*	12.5
615-355	Legal & Ethical Frameworks *(p.5)*	12.5
615-370	Information Systems Project *(p.6)*	12.5
615-372	Project Management *(p.6)*	12.5
615-373	Industrial Project *(p.6)*	12.5
Elective subjects		
615-220	Current Issues in Information Systems I *(p.7)*	12.5
615-260	Enterprise Systems *(p.3)*	12.5
615-280	Multimedia and Communications *(p.4)*	12.5
615-330	Advanced Concepts in Database *(p.4)*	12.5
615-335	Distributed Systems *(p.4)*	12.5
615-348	Human Computer Interaction *(p.5)*	12.5
615-367	Information Systems Security *(p.5)*	12.5
615-380	Multimedia Design for Info. Systems *(p.6)*	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.1)* These requirements should be considered when planning your course.

Further Information

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Subject descriptions

No science credit will be granted for the business oriented subjects listed below from the Faculty of Economics and Commerce or the Faculty of Law.

100-level business oriented subjects (non-science credit)

325-101 Management
See full subject details on page 1.

306-102 Accounting Concepts
See full subject details on page 1.

306-104 Accounting 1B
See full subject details on page 1.

316-101 Introductory Macroeconomics
See full subject details on page 1.

316-102 Introductory Microeconomics
See full subject details on page 1.

732-103 Principles of Business Law
See full subject details on page 1.

325-102 Business in the Global Economy
See full subject details on page 1.

325-103 The Asian Economies
See full subject details on page 1.

100-level subjects

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.
- Student who have received a BOS mark of 40 or greater out of 50 for VCE Information Technology: Information Processing and Management may be exempt from doing this subject.

Credit points: 12.5 **HECS-band:** 2

Coordinator: To be announced

Contact: 36 lectures (three per week, one of which is a self-study session), 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. Various software packages are 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 test; a 2-hour practical examination; a 3-hour end-of-semester written examination; one individual assignment. 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:

- 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.
- Students may not gain credit for both this subject and 433-142 Computing Fundamentals B.

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 1, repeat 2).*

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:

- 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 both 615-150 and any of 615-255 Organisational Processes, 306-106 Enterprise Process Analysis, 306-207 Accounting Information Systems or 306-207 Enterprise Information Systems (in 2001).

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 1, repeat 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.

615-160 Tools of Analysis

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.
- Students may not gain credit for both this subject and 620-131.

Credit points: 12.5 **HECS-band:** 2

Coordinator: Prof L Sonenberg

Pre or Corequisites: 615-145 Concepts in Software Development 1 or 433-142 Computing Fundamentals B, or similar programming background.

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: modern security techniques, as used in products supporting digital signatures and facilitating email privacy, rely on number theory and abstract notions of complexity; the database query language SQL, used in many commercial products is linked to relational algebra and relation calculus and hence to logic; widely used spreadsheet applications provide sophisticated facilities for modelling and mathematical optimisation.

This subject introduces these and other applications, in order to motivate and study the underlying mathematical ideas and to introduce students to a different approaches to mathematical analysis. Topics will be drawn from counting principles and data complexity, public key cryptography, propositional and predicate logic, linear algebra, linear programming and decision-making.

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.

200-level subjects

615-230 Database Concepts

Note:

- This subject is regarded as a *non-science* subject for students enrolled in the BSc, BASc and combined BSc courses.
- Students may not gain credit for both this subject and 433-351 Database Systems.

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

Description: Aspects of the following topics will be considered: 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.
- Students cannot gain credit for both 615-240 and 433-254 Software Design.

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.
- Students cannot gain credit for both 615-245 and 615-382 Business Systems Analysis and Design.

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:

- This subject is regarded as a *non-science* subject for students enrolled in the BSc, BASc and combined BSc courses.
- 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 (1 hour per week) *(Semester 1).*

Description: This subject explores the relationship between information systems and organisational change, focusing on managing the change process. Models for analysing and managing change will be examined. Topics include the drivers of change; the roles of power and politics; and planned and emergent change. 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 2-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:

- 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 615-252 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.

Corequisites: 615-237 Telecommunications Concepts

Contact: 24 lectures (two per week), 11 laboratory classes (2 hours per week) *(Semester 2).*

Description: This subject provides an introduction to the concepts and processes used in doing business electronically. The focus will be on the business value, rather than technical, aspects of electronic commerce. The subject will examine both business-to-business and business-to-computer electronic commerce. Topics that will be covered include the principles and use of e-Commerce technologies such as EDI, XML, automatic identification, standardised numbering, EFT, e-Hubs and e-Markets in managing and re-engineering supply chains. In addition, business models for e-Commerce, marketing, payment systems, security and the legal and ethical issues raise by e-Commerce will be discussed.

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.

615-260 Enterprise Systems

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 both 615-260 and either 306-318 Enterprise Resource Planning Systems or 306-207 Enterprise Information Systems (from 2002).

Credit points: 12.5 **HECS-band:** 2

Coordinator: Dr P Seddon

Prerequisites: 50 points of information systems subjects and either 615-150 Organisational Processes or 306-106 Enterprise Process Analysis

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

Description: Enterprise systems are computer-based information systems that support core organisational processes in most large organisations. Built on a shared, organisation-wide database, these robustly-engineered systems span functional boundaries, integrate business processes, and implement so-called 'industry best practice' processes within organisations.

This subject provides students with an understanding of the nature of enterprise systems, their implementation and use within organisations, and benefits enterprise systems can provide for organisations. Topics covered include characteristics of enterprise systems, the architecture of enterprise systems, process and workflow models, designing and implementing process improvements, as well as detailed discussion of some core modules and business processes supported by the enterprise systems software package, SAP R/3.

Practical work in this subject involves hands-on assignments using SAP R/3 throughout the semester.

Assessment: A 2-hour end-of-semester examination (50%), project work consisting of written work of up to 20 pages and computer-based projects (using SAP) taking approximately 30 hours in total (50%). The detailed weighting of the project components of assessment will be announced at the commencement of the subject.

615-280 Multimedia and Communications

Note:

- This subject is regarded as a *non-science* subject for students enrolled in the BSc, BASc and combined BSc courses.
- 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. Entry to this subject is restricted to students who have completed 50 points of first year information systems subjects.

Contact: 24 lectures (two per week), 24 hours of laboratory work, 11 hours of tutorials/seminars. 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 technology, evidence of appropriate application of such technology for internet communications and a critical appreciation of the issues involved in communicating ideas using internet technologies. Details of the weighting of the assessment components will be made known at the beginning of the subject.

300-level subjects

615-328 Managing the Impact of IS

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 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 615-351 prior to 2001

Contact: 24 lectures (two per week), 11 seminar discussions *(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, students 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 information systems 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 manage databases efficiently; 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: 615-240 Concepts in Software Development II or 433-254 Software Design

Corequisites: 615-237 Telecommunications Concepts or 433-353 Networks and Communications.

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 and 615-240 Concepts in Software Development II

Contact: 24 lectures (two per week), practical/tutorial sessions of up to 2 hours 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;
- used CSCW applications in support of the development process; and
- 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:

- 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 cannot be granted for both 615-348 and either 615-247 (prior to 2001) or 433-371

Credit points: 12.5 **HECS-band:** 2

Coordinator: Dr S Howard

Prerequisites: 50 points of 200-level subjects. Some familiarity with systems analysis and design 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: 2-hour end-of-semester written examination; individual and/or 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: To be advised

Prerequisites: Students must have completed 62.5 points of 200-level information systems subjects.

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 Frameworks

Note:

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

Credit points: 12.5 **HECS-band:** 1

Coordinator: Dr M Gibbs

Prerequisites: 62.5 points of 200-level information systems 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 6000 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 Information Systems Project

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.
- Students cannot receive credit for more than one of 615-371 Information Systems Project (prior to 2000), 615-373 Industrial Project B (prior to 2002), 615-370 Industrial Project (prior to 2002) and 615-370 Information Systems Project.

Credit points: 12.5 **HECS-band:** 2

Coordinator: Mr J Pearce

Prerequisites: 615-245 Systems Analysis and Design and 615-275 Project Management (prior to 2000) or 615-372 Industrial Project A (prior to 2002) or 615-372 Project Management. Students must have completed 62.5 points of 200-level information systems subjects.

Contact: Tutorials (1 hour per week), project work (4 hours per week). One 3-hour meeting per month *(Semester 1, repeat 2).*

Description: This subject is based around the completion of a significant information systems project. Clients of the project will normally be 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: Progress and end-of-semester reports and end-of-semester 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 Project Management

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 615-372 and 615-275 Project Management.
- Students normally take this subject and either one of 615-370 Information Systems Project or 615-373 Industrial Project in consecutive semesters.

Credit points: 12.5 **HECS-band:** 2

Coordinator: To be announced

Prerequisites: Students are required to have completed 62.5 points of 200-level information systems subjects.

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: 2-hour end-of-semester written examination. There will be individual and group assignments. The weighting of the assessment components will be announced at the commencement of the subject.

615-373 Industrial Project

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.
- Students cannot gain credit for more than one of 615-370 Industrial Project (prior to 2002), 615-370 Information Systems Project (from 2002), 615-371 Information Systems Project (prior to 2000), 615-373 Industrial Project B (prior to 2002), or 615-373 Industrial Project.

Credit points: 12.5 **HECS-band:** 2

Coordinator: To be announced

Prerequisites: 615-245 Systems Analysis and Design and 615-275 Project Management (prior to 2000) or 615-372 Industrial Project A (prior to 2002) or 615-372 Project Management. Students must have completed 62.5 points of 200-level information systems subjects.

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: Progress and end-of-semester reports and end-of-semester 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.

615-380 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.

Credit points: 12.5 **HECS-band:** 2

Coordinator: Mr J Pearce

Prerequisites: 615-280 Multimedia and Communications

Contact: 24 lectures (2 per week), 12 seminars (1 per week), 7 hours of project work per week, which will include some formal workshops *(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, multimedia development processes (for example, design and evaluation, management and planning), issues relating to new technologies (for example, streaming video, SMIL, DHTML, XML), and applications of multimedia. Students will acquire advanced knowledge and skills in some 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: Continuous assessment contributions from seminars and workshops. End-of-semester 3000-word project report or equivalent 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.

615-382 Business Systems Analysis and Design

Note:

- 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.
- 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.

- 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: 615-181 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.

600-311 Research Project A

See full subject details on page 1.

600-312 Research Project B

See full subject details on page 1.

Subjects not offered in 2002

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: 50 points of 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 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, and an end-of-semester 2-hour examination. Student peer critiques will be a component of the assessment. Weighting of the assessment components will be announced at the commencement of the subject.

Subjects available in the Graduate Diploma in Information Systems

615-181 Business Processes

Note:

- This subject is regarded as a *non-science* subject for students enrolled in the BSc, BASc and combined BSc courses.
- Students may not receive credit for this subject and for 615-150 Organisational Processes, 615-381 Business Processes, 306-106 or 306-107
- This subject is taken by Graduate Diploma students. Undergraduate students may be permitted to undertake the subject with written approval of the Head of Department.

Credit points: 12.5 **HECS-band:** 2

Coordinator: Dr P Seddon

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

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

After completion of this subject, students should be aware of major organisational processes (such as order management, billing, new-product development, etc.) found in many organisation; 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 that can adapt as business needs change, and be aware of the implications of electronic commerce for supply chain proceses

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.

615-185 Introduction to Programming

Note:

- Students may not receive credit for this subject and 615-145 Concepts in Software Development 1 or 433-142
- This subject is taken by graduate diploma students

Credit points: 12.5 **HECS-band:** 2

Coordinator: To be announced

Prerequisites: Eligibility for the Graduate Diploma in Information Systems

Contact: 24 lectures (two per week); 12 tutorials (2 per week); 12 laboratory sessions (2 hours per week) *(Semester 1).*

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 up to 40 hours worth of individual and group projects 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.