

# 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 one of the University's newest departments, 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 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 23.

Information systems subjects	Points
<b>Core subjects</b>	
615-110 Foundations of Information Systems (p.1)	12.5
615-140 Technologies for Information Systems (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.3)	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
615-346 Information Systems Architecture (p.4)	12.5
(Or 615-347 Business Systems Design, prior to 2007)	
615-355 Professional Issues in Info Systems (p.5)	12.5
615-372 Project Management (p.6)	12.5
615-373 Industrial Project (p.6)	12.5
<b>Elective subjects</b>	
615-260 Enterprise Systems (p.4)	12.5
615-280 Multimedia and Communications (p.4)	12.5
615-330 Advanced Concepts in Database (p.4)	12.5
615-348 Human Computer Interaction (p.5)	12.5
615-351 Strategic IS Management (p.5)	12.5
615-360 Organisational Information Security (p.5)	12.5
615-363 Mobile Computing Applications (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.

## Information systems subjects available for science credit

The following information systems subjects are available as science credit for students enrolled in the BSc, BAsC or a combined BSc course (except for the BSc/BIS). All other information systems are *non-science* for these courses.

Information systems subjects for science credit	Points
615-140 Technologies for Information Systems (p.1)	12.5
615-145 Concepts in Software Development I (p.2)	12.5
615-160 Tools of Analysis (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
615-346 Information Systems Architecture (p.4)	12.5
615-348 Human Computer Interaction (p.5)	12.5
615-363 Mobile Computing Applications (p.5)	12.5
615-373 Industrial Project (p.6)	12.5

## Bachelor of Information Systems (Degree with Honours)

For information about faculty and departmental entry requirements for honours, please refer to *Bachelor of Science (Degree with Honours)* and *Bachelor of Information Systems (Degree with Honours)* (p.1) These requirements should be considered when planning your course.

### Further information

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### Subject descriptions

#### 100-level subjects

#### 615-110 Foundations of Information 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.

Students may not gain credit for both 615-110 and any of 615-120 Introduction to Information Systems (prior to 2004), 103-100 or 103-001 Computer Applications or 103-002 Internet Applications.

Commerce degree students are not permitted to enrol in this subject, except BCom/BIS students, where this subject is a core component.

**Credit points:** 12.5

**Coordinator:** To be advised

**Prerequisites:** Nil.

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

**Description:** The subject presents the foundations of information systems. The subject focuses on conceptual (systems thinking), organisational (culture and competitiveness), economic (cost structures), managerial (outsourcing and strategic processes), and societal (legal, ethical and security issues) aspects of information systems.

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

- view the organisation as an information processing system designed to manage environmental uncertainty;
- discuss the use of IS for automation, integration, organisational learning, reengineering, and strategy;
- understand the economic characteristics of the information economy;
- explain the operating, managerial and strategic processes associated with IS management; and
- describe the ethical concerns associated with information privacy, accuracy, intellectual property, and accessibility.

In addition to these subject-related skills, students should acquire or extend other valuable, generic skills. These include:

- problem-solving skills; and
- working in teams to allocate duties and achieve specified goals.

**Assessment:** A group project (of 3-4 members) of 2000 words due during the semester (20%); a 2-hour written examination in the examination period (50%); an individual assignment of 1500 words due during the semester (20%); an individual assignment based on tutorial work during the semester (10%); Satisfactory completion of the examination and attendance of at least 80% of tutorials is necessary to pass the subject.

#### 615-140 Technologies for Information 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.

**Credit points:** 12.5

**Coordinator:** To be advised

**Prerequisites:** Nil.

**Contact:** 24 lectures (two per week) and 11 laboratory sessions (two hours per week) (*Semester 1*).

**Description:** This subject focuses on the technological aspects of Information Systems. On completion, students will gain an understanding of the components of modern technological infrastructures, such as relevant hardware, software, data structures, networks, telecommunications and internet systems. Students will also study appropriate development methods for creating and implementing Information Systems. Much of this knowledge is learned through XML constructs. Students develop practical XML-based skills

(including XML Schema, CSS, XHTML and XSLT) for building data repositories and managing their effective use.

**Assessment:** Assignments involving written answers to questions totalling approximately 4000 words (15%) and practical work (15%) due during the semester; a group assignment involving practical work (12%), two short presentations (5%) and a written report of 1000-2000 words (3%) due at the end of the semester; a 2-hour written examination in the examination period (50%). Satisfactory completion of the weekly assignments, group assignment and final examination is necessary to pass this subject.

### 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. Students may not gain credit for both this subject and any of 615-185, 433-171, 433-151 or 433-142.

**Credit points:** 12.5

**Coordinator:** To be advised

**Prerequisites:** 615-140 or 615-120 (prior to 2004).

**Contact:** 30 hours of lectures (minimum of 2 per week), 12 workshops and laboratory sessions (3 hours per week) (*Semester 1, repeat 2*).

**Description:** The object of this subject is for students to develop problem-solving skills and to demonstrate the use of these skills in software development, using a high level language. This subject will cover topics including the software development lifecycle; the main concepts of programming - selection, iteration and subroutines; software testing and debugging, modular design and file handling.

On completing this subject, students should:

- understand the concepts of software development;
- understand how to evaluate alternative algorithmic solutions to a problem;
- be able to put these concepts in practice to develop small applications using an application framework and a high-level programming language; and
- have a working knowledge of the structure of computer systems and the role of systems software.

In addition to these subject-oriented skills, students are exposed to and are expected to develop the following generic skills:

- the ability to identify a problem and logically pick it apart to generate a creative solution;
- the ability to establish a supportive network of peers and regular and effective study techniques;
- effective time management; and
- using other software such as electronic mail and web browsers.

**Assessment:** Ongoing assessment in the form of tutorial and laboratory assessment throughout the semester (50%); a 3-hour written examination in the examination period (50%). Satisfactory completion of tutorial and laboratory assessment in addition to the examination is necessary to pass the subject.

### 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 this subject and any of 615-181, 615-255, 306-106 or 306-207.

Commerce degree students are not permitted to enrol in this subject, except BCom/BIS students, where this subject is a core requirement.

**Credit points:** 12.5

**Coordinator:** To be advised

**Prerequisites:** Nil.

**Contact:** 24 lectures (two per week) and 11 tutorials (one 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 understand the fundamental premises and approaches of total quality management and business process (re)engineering; be aware of major organisational processes (such as order management, billing, new product development) found in many organisations; be able to analyse and document organisational processes using data flow diagrams and event process chains; understand the importance of human self-interest in organisations and the need for controls in well-designed information systems; understand how vendors of enterprise application software are attempting to provide software that can adapt as business needs change; and be ready to commence study of inter-organisational processes.

**Assessment:** Written work of up to 20 pages, group research and field projects taking approximately 20 hours in total due throughout the semester (40%); a 2-hour written examination in the examination period (60%). Satisfactory completion of both project work and the examination is necessary to pass 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.

**Credit points:** 12.5

**Coordinator:** To be advised

**Prerequisites:** Nil.

**Corequisites:** 615-145 or 433-171 or equivalent.

**Contact:** Two 1-hour lectures plus up to 1.5 hours of tutorial or laboratory work per week throughout the semester and additional unsupervised workshop time of up to two hours per week (*Semester 2*).

**Description:** Many software applications in everyday use have their foundation in mathematics. For example, security products, supporting digital signatures and facilitating email privacy, rely on number theory and abstract notions of complexity; and spreadsheet applications provide sophisticated facilities for modeling and mathematical optimisation.

The key objectives of the subject are to introduce you to mathematical concepts that provide a base for such software applications, and to convey a sense of excitement about the value of mathematical tools for addressing difficult analytical problems.

The topics have been chosen for their connection to information systems. The major topics are cryptography, covering basic mathematical techniques to ensure secure communication; and linear algebra and linear programming, including techniques for solving many types of decision problems that arise in business settings.

On completion of this subject, students should have extended their ability to comprehend abstract ideas and understand how theoretical concepts can be applied in practical settings to enhance security and privacy; and have refined their analytical skills so as to be able to model and solve different types of elementary decision problems. In addition, students should have enhanced their ability to self direct their learning and to take advantage of complementary forms of learning resources.

**Assessment:** Four practical tasks totalling up to three hours during the semester (18%); written project work totalling up to 5 pages due during the semester (7%); a 2-hour written examination in the examination period (75%). Satisfactory completion of both practical work and the examination is necessary to pass 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 either 433-351 or 433-258.

**Credit points:** 12.5

**Coordinator:** To be advised

**Prerequisites:** 615-145 Concepts in Software Development I (*p.2*).

**Contact:** This subject involves twenty-four lectures (two 1-hour lecture per week), 11 tutorials (one hour per week), 11 laboratory sessions (one hour per week), a minimum of 12 hours of unsupervised project group work during the semester and up to 5 hours of additional study per week (*Semester 1*).

**Description:** This subject provides an introduction to the concepts of database management. The subject will examine the development of database management which include database analysis, design and implementation. In addition, advanced database topics such as data warehousing, online analytical processing, and data mining are also covered.

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

- perform conceptual data modelling using the basic and enhanced entity-relationship modelling techniques and implement developed models in a relational database management system;
- create, define, enter data, and query (using SQL) a relational database;
- develop client-server applications;
- describe the role databases play in modern enterprises; and
- list and describe the key activities in information resource management and their relationship to the organisation.

**Assessment:** Individual data modelling work during semester (15%); a group project due during the semester (20%); ongoing tutorial/laboratory work during the semester (5%); a 2-hour written examination in the examination period (60%). Satisfactory completion of the examination, modelling, project and tutorial work is necessary to pass the subject.

### 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

**Coordinator:** To be advised

**Prerequisites:** 50 points in total including at least 25 points of 100-level information systems subjects.

**Contact:** 24 lectures (two per week) and 12 tutorials (two hours per week) plus up to 6 hours of additional study per week (*Semester 2*).

**Description:** This subject provides participants with an understanding of the concepts of information and communication technologies (ICTs) within a contextual framework.

Subject topics are predominantly technical pertaining to communications networks.

At the completion of this subject, students should understand and be able to discuss:

- the fundamentals of communications networks;
- the international standards and protocols required to achieve network interconnection and interoperability;
- network and organisational security; and
- the emerging technologies and issues in the telecommunications environment.

**Assessment:** Individual and group tasks comprising active participation (30%), seminar papers (15%) and presentations (15%) due throughout the semester; a 2-hour written examination in the examination period (40%).

### 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. Students cannot gain credit for both this subject and either 615-241 or 433-254.

**Credit points:** 12.5

**Coordinator:** To be advised

**Prerequisites:** 615-145 Concepts in Software Development I (*p.2*).

**Contact:** 24 lectures (two per week), 12 group consultations (two hours per week) and laboratory work (one hour per week). Additional, optional demonstration lectures to assist students with technical concepts will be provided during the semester (*Semester 1*).

**Description:** This subject is an introduction to object-oriented design and 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 basic concepts of object-oriented languages;
- be familiar with the basic constructs of the Unified Modelling Language;
- have gained a better understanding of Software Developer work practices;
- be able to design, write, test, and debug non-complex OO programs; and
- be able to use a range of software development tools.

**Assessment:** Individual and group project work of up to 6 hours per week during the semester (50%); a 3-hour written examination in the examination period (50%). Submission of all assignments during semester and satisfactory completion of the examination are necessary to pass 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. Students cannot gain credit for both this subject and 615-382.

**Credit points:** 12.5

**Coordinator:** To be advised

**Prerequisites:** 615-230 Database Concepts (*p.2*) and 615-240 Concepts in Software Development II (*p.3*).

**Contact:** 2 lectures per week; a 2-hour workshop and a 1-hour practical per week (*Semester 2*).

**Description:** This subject introduces the fundamental processes of identifying requirements for 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 modeling, 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.

In addition to the subject-related skills, students should acquire or extend other valuable, generic skills. These include:

- analytical skills that help them structure complex systems into manageable pieces; and
- team management skills.

**Assessment:** Group project work due during the semester (50%); a 2-hour written examination in the examination period (50%). Satisfactory completion of both project work and the examination is necessary to pass the subject.

### 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 both this subject and either 615-351 Organisational Analysis and Change (prior to 2004) or 325-304 Organisational Analysis.

Commerce degree students are not permitted to enrol in this subject, except BCom/BIS students, where this subject is a core requirement.

**Credit points:** 12.5

**Coordinator:** To be advised

**Prerequisites:** 615-110 Foundations of Information Systems (*p.1*).

**Contact:** 12 lectures (one 2-hour lecture per week) and 12 tutorials (one per week) (*Semester 1*).

**Description:** This subject explores the relationship between information systems and organisational change, focusing on managing the change process. Topics include the drivers of change, the roles of power and politics, planned and emergent change, and the roles of learning in organisational innovation and change. Models for analysing and managing change will be examined (such as organisational development and learning organisations).

At the completion of this subject, students should:

- understand the relationship between information systems implementation and organisational change;
- be familiar with case study techniques;
- 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:** Three components of individual written work totalling up to 2000 words due during the semester (30%); a group project involving practical and written work during the semester (20%); a 2-hour written examination in the examination period (50%). Satisfactory completion of the examination, submission of all assessment tasks and attendance of at least 80% of tutorials is necessary to pass 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 both this subject and either 615-325 or 306-316.

Commerce degree students are not permitted to enrol in this subject, except BCom/BIS students, where this subject is a core requirement.

**Credit points:** 12.5

**Coordinator:** To be advised

**Prerequisites:** 615-150 Organisational Processes (*p.2*), or equivalent.

**Contact:** Two 1-hour lectures per week, a combination of 5 laboratory sessions and 6 tutorials during the semester, a minimum of 10 hours of unsupervised project group work during the semester and up to 4 hours of unsupervised study per week (*Semester 2*).

**Description:** This subject provides an introduction to electronic commerce. It focuses on the managerial rather than technical aspects of electronic commerce. In the B2C section, the importance of creating an effective web presence and strategies to attract and retain customers are discussed. Some of the key issues when establishing a web presence, including the options for hosting, development and integration, will be outlined. In the B2B section of the subject, topics that will be covered include the principles and use of e-Commerce technologies such as EDI, automatic identification, standardised numbering, EFT, e-Hubs and e-Markets in managing and re-engineering supply chains.

At the completion of this subject, students should:

- understand the main concepts underlying electronic commerce;

- be familiar with the different ways that electronic commerce can add business value to an organisation;
- be able to list and analyse the key decision faced by an organisation when establishing or updating a web presence;
- have an appreciation of the principles and use of key technologies applied in electronic commerce;
- understand the processes involved in doing business electronically; and
- be able to design and develop a good quality web presence for business purposes.

The subject will be taught with lectures and a combination of tutorial and laboratory sessions.

**Assessment:** Individual written work of up to 2000 words due during the semester (20%); a group project involving practical and written work due during the semester (20%); ongoing tutorial/laboratory work during the semester (10%); a 2-hour written examination in the examination period. Satisfactory completion of the examination, project work and tutorial work is necessary to pass 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.

**Credit points:** 12.5

**Coordinator:** To be advised

**Prerequisites:** Fifty points of information systems subjects and either 615-150 Organisational Processes (*p.2*) or 306-106 Business Process Analysis (*p.1*).

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

**Description:** Enterprise systems are computer-based information systems based on packaged enterprise application software 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 a good understanding of the nature and role of enterprise systems and how they may be successfully implemented within organisations. Topics covered include characteristics of enterprise systems; the architecture of enterprise application software; enterprise application integration; process and workflow modelling; design of systems around, and implementation of, enterprise application software; and assessment of benefits from enterprise systems. During the semester, students are expected to complete three projects using a number of core modules from one of the most widely used ERP packages, namely SAP R/3. At the conclusion of this subject, students should have a good working knowledge of the core functionality provided by enterprise application software products like SAP R/3.

Students should develop generic skills in:

- reading and communicating results found in the related literature;
- independent learning; and
- working in a team.

**Assessment:** Project work due during the semester (50%); a 2-hour written examination in the examination period (50%). Satisfactory completion of both project work and the examination is necessary to pass 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 both 615-280 and 103-002 Internet Applications.

**Credit points:** 12.5

**Coordinator:** To be advised

**Prerequisites:** Fifty points of 100-level information systems subjects.

**Contact:** 24 lectures (two per week), 24 hours of laboratory work and 11 hours of tutorials/seminars (*Semester 1*).

**Description:** This subject deals with the concepts and applications of multimedia technologies and communications, and with other contemporary ICT trends. The focus of the subject is the user-centred design of web sites that use multimedia for effective communication.

Skills in the development of digital media and communications are addressed via independent and group projects. Students have the opportunity to use established multimedia authoring tools for digital presentations and animation, and to develop a range of on-line skills for interactive tasks.

Features of the subject include the application of web publishing skills as well as being part of a multimedia team to develop an interactive web site. Critical thinking and knowledge of innovations in the fields of information and communication technologies are encouraged.

**Assessment:** Individually written evaluation of up to 1500 words due during the semester (15%); team web design project involving approximately 30 hours work due during the semester (35%); multimedia component design due during semester (20%); class participation (10%); a 90-minute laboratory examination held during the semester (20%). Satisfactory completion of individual assessments and attendance of at least 80% of seminars is necessary to pass the subject.

## 300-level subjects

### 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

**Coordinator:** To be advised

**Prerequisites:** A grade of at least H3 for 615-230 Database Concepts (*p.2*) and successful completion of 62.5 points of 200-level information systems subjects.

**Contact:** 24 lectures (three hours per week) and 11 laboratory-based seminars (two hours per week) (*Semester 2*).

**Description:** Topics will include database administration; physical database design and implementation; emerging database technologies; relational database issues (development, query processing and optimisation); and database and data management. Some of the department's industry partners may provide assistance in the subject's delivery. This subject builds upon students' understanding of topics such as logical database design and SQL.

At the completion of this subject, students should:

- be able to develop the physical design required of a large database system;
- be able to implement a large database; and
- be able to manage large databases efficiently.

Students will also acquire and extend other valuable, generic skills through solving the problems encountered throughout the subject. These include:

- analytic and problem-solving skills;
- application of theory to practice in IS database management;
- written and oral communication skills; and
- confidence to tackle unfamiliar problems.

**Assessment:** Assigned project work expected to average six hours per week due during the semester (40%); a 3-hour written examination in the examination period (60%). Satisfactory completion of both project work and the examination is necessary to pass the subject.

### 615-346 Information Systems Architecture

**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.

Students cannot gain credit for both this subject and 615-347.

**Credit points:** 12.5

**Coordinator:** To be advised

**Prerequisites:** 615-245 Systems Analysis and Design (*p.3*), 615-237 Telecommunications Concepts (*p.3*) or 433-254 Software Design (*p.17*)

**Contact:** 2 lectures and up to 2 hours of tutorial/practical sessions per week plus up to 6 hours per week of additional study and group work (*Semester 1*).

**Description:** Modern information systems development places a premium on the separation of the logical application and information architecture from implementation detail. In this subject, we study the principles of high-level design and architecture of distributed information systems. We focus on current architectures that use XML and web services in development of a new generation of e-commerce applications. Topics covered include component-based design, client-server and n-tier architectures, web applications design and application development frameworks.

At the completion of this subject, students should:

- understand the issues involved in the architecture and design of complex inter- and intra-organisational systems;
- develop the skills to produce high-level models and designs for complex distributed systems;
- gain exposure to modern application development frameworks such as .NET and J2EE;
- understand the rationale behind emerging distributed systems technologies such as J2EE, XML, Web Services and .NET;
- understand the complexities underlying enterprise level distributed systems by designing and architecting for reliability, scalability and security and;
- develop an understanding of business processes and how these are being matched to underlying e-Commerce applications and services.

**Assessment:** Ongoing assessment of individual (20%) and group (20%) project work throughout the semester; a 2-hour written examination in the

examination period (60%). Satisfactory completion of both project work and the examination is necessary to pass 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. Credit cannot be granted for both this subject and 433-371.

**Credit points:** 12.5

**Coordinator:** To be advised

**Prerequisites:** 50 points of 200-level subjects. Some familiarity with systems analysis and design would be an advantage.

**Contact:** 24 lectures (two per week) and one tutorial per week (*Semester 1*).

**Description:** This subject focuses on the analysis, design and testing of the usability and usefulness of information systems. As such, it complements many other Information Systems subjects that concentrate on business and organisational analysis and post implementation issues. A key focus is the IS development process and specifically, use and user-centered functions.

Aspects of the following topics will be considered: theoretical foundations (conceptual theories, user characteristics, user modelling), and usability engineering (user-centered design, user needs analysis, participatory design and usability evaluation).

At the completion of this subject, student should:

- have knowledge of the 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; and
- understand the advantages and disadvantages of usability engineering and various approaches available.

**Assessment:** A single project (individual and/or group) totalling up to 6000 words due during the semester (50%); a 2-hour written examination in the examination period (50%). Satisfactory completion of both project work and the examination is necessary to pass the subject.

**Prescribed texts:** J Preece et al, *Interaction Design: Beyond Human Computer Interaction*, John Wiley 2002.

### 615-351 Strategic IS 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 this subject and 615-352 Managing the IT Function.

**Credit points:** 12.5

**Coordinator:** To be advised.

**Prerequisites:** 62.5 points of level-200 information systems subjects which must include 615-251.

**Contact:** 12 lectures (one per week), twelve 90-minute case-study discussion classes and additional unsupervised case-study preparation averaging 120 minutes per week (*Semester 1*).

**Description:** Creating business advantage with IT: forces that shape business strategy, business models and IT, IT strategic alignment; IT and organisational structure: building networked businesses, making the case for networked business; Managing IT: understanding organisational requirements for IT, organising and leading the IT function; IT infrastructure: understanding IT infrastructure, designing IT architecture, managing diverse IT infrastructures, assuring reliable and secure IT services; IT outsourcing.

In addition to the subject-related knowledge, students should acquire or extend other valuable generic skills, particularly the ability to identify key arguments presented in both writing (in the text and cases) and orally (in class) and assess the strength of evidence provided to support those arguments.

**Assessment:** Up to 11 written responses of 1-2 pages each to preparation questions for topics and cases due during the semester (20%); participation in class discussions during the semester (10%); a written assignment of between 1500 and 2000 words due during the semester (20%); a 2-hour written examination in the examination period (50%). Satisfactory completion of the examination is necessary to pass the subject.

### 615-355 Professional Issues in Info Systems

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

Previously known as 615-355 Legal & Ethical Frameworks.

Students cannot receive credit for both this subject and 433-343.

**Credit points:** 12.5

**Coordinator:** To be advised

**Prerequisites:** 62.5 points of 200-level information systems subjects.

**Contact:** Twelve 90-minute lectures and nine 90-minute seminars during the semester together with additional unsupervised seminar preparation averaging 90 minutes per week (*Semester 2*).

**Description:** This subject introduces students to some of the ethical and legal issues associated with the use of information systems in Australia in the 21st century. Issues associated with ethics, social responsibility and professional practice are discussed. The subject also explores the ethical and legal challenges presented to organisations and Australian society by recent developments in information and communication technologies. Topics may include contracts, intellectual property, internet content control, computer crime, information privacy and safety critical systems.

At the completion of this subject, students should:

- have an understanding of the current 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.

In addition to the subject-related skills, students should acquire or extend other valuable, generic skills. These include:

- written communication skills;
- oral communication skills; and
- the ability to think critically about the implications of information technology for individuals, organisations and society.

**Assessment:** Written assignments, group project work, and in-class exercises totalling up to 4500 words due during the semester (60%); a 2-hour written examination in the examination period (40%). Satisfactory completion of both project work and the examination is necessary to pass the subject.

### 615-360 Organisational Information 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

**Coordinator:** To be advised

**Prerequisites:** 62.5 pts of second year information systems or computer science subjects.

**Contact:** 2 lectures and up to 2 hours of tutorial sessions per week plus up to 6 hours per week of additional study and project work (*Semester 1*).

**Description:** This subject will expose students to the multi-faceted security models and strategies employed in the security of organisations. The subject will discuss issues such as critical infrastructure protection, information security, risk, emergency management, security governance, and the strategies defining security within organisations.

Students interested in enhancing their studies by understanding security within organisations will benefit greatly from this subject. Students will be encouraged to analyse security issues from multiple perspectives across physical and logical boundaries.

At the end of this subject, students will also have improved their collaborative work, research and analytical skills.

**Assessment:** Ongoing assessment of project work throughout the semester (40%); a 3-hour written examination in the examination period (60%). Satisfactory completion of both project work and the examination is necessary to pass the subject.

### 615-363 Mobile Computing Applications

**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.

**Credit points:** 12.5

**Coordinator:** To be advised

**Prerequisites:** 615-240 Concepts in Software Development II, 615-237 Telecommunication Concepts, 615-252 Electronic Commerce.

**Contact:** 1 lecture and up to 4 hours of tutorial/practical sessions per week plus up to 5 hours per week of additional study and project work (*Semester 2*).

**Description:** Mobile and wireless computing technologies have opened up new possibilities in terms of where, when, and how information technology is used. The application domains of mobile computing span individual, organisational and societal contexts. The aim of this subject is to expose students to mobile computing from the perspectives of underlying technology, wireless environments, application design, and evaluation of the derived business benefits.

Students should develop the necessary technical skills to design, implement and evaluate the business benefits of a prototype application based on mobile and wireless technologies. In addition, students will be exposed to various forms and uses of these technologies. Students interested in the interaction

design and usability issues of mobile appliances should also consider enrolling in the complementary subject, 615-348.

A component of the work undertaken is a group-based project.

**Assessment:** Ongoing assessment of project work throughout the semester: group work of up to 5000 words (20%) and individual work of up to 2000 words (20%); a 2-hour written examination in the examination period (60%). Satisfactory completion of both project work and the examination is necessary to pass 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 may not gain credit for both this subject and 325-208 Project Management.

**Credit points:** 12.5

**Coordinator:** To be advised

**Prerequisites:** 50 points of 200-level information systems subjects.

**Contact:** 24 lectures (two per week) and 11 tutorials (one hour per week) (*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 levelling, 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 levelling 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.

Generic skills acquired include report writing; advanced critical decision making; presentations; advanced problem solving; teamwork; and self-directed study.

**Assessment:** Scheduling and planning assignment of up to 1000 words due during the semester (25%); project manager's report of approximately 2000 words due at the end of semester (25%); ongoing assessment of tutorial work throughout the semester (10%); a 2-hour open book written examination in the examination period (40%). Satisfactory completion of both project work and the examination is necessary to pass 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.

Students cannot gain credit for both this subject and 615-370.

Students must enrol in this subject before the close of the prior semester to enable the subject coordinator to secure industry projects for students. Students are required to attend a subject information session before the end of the prior semester to arrange project team placement. This is a requirement and must be considered in the student's planning. Check the DIS website for preliminary details.

**Credit points:** 12.5

**Coordinator:** To be advised

**Prerequisites:** 615-372 Project Management (*p.6*).

**Corequisites:** 615-346 or 615-347.

**Contact:** 6 lectures during the semester and regular team, mentor and client meetings which require a large amount of time; in addition to lectures and the various stakeholder meetings, a minimum of 6 hours per week per student should be scheduled for this subject (*Semester 1, repeat 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 will work in teams of 6 with a staff member allocated to the team as a mentor. 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, documentation and writing reports.

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

- applying the tools and techniques covered in prior Information Systems subjects;
- managing client relationships and expectations;
- selecting, planning, executing, managing, reporting on, documenting, and completing a substantial information systems project; and
- working with a support group of fellow students and an academic staff member.

**Assessment:** Written progress reports on the project due throughout the semester (15%); project planning and management (30%); a final report, product and presentation due at the end of semester (55%). Students may be assessed on individual contributions to group work.

### 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

**Coordinator:** To be advised

**Prerequisites:** 615-280 Multimedia and Communications (*p.4*).

**Contact:** 24 lectures (two per week), 12 seminars (1 per week) and a two-hour workshop each week for the first half of the semester (*Semester 2*).

**Description:** In this subject students will explore some of the current and new technologies that support multimedia systems on the Web as well as some of the theoretical issues that underlie their development and use. Part of this subject aims to help students improve their technical skills in digital media by exploring the scripting language underlying technologies such as Flash, and to give students an opportunity to explore issues relating to new technologies.

Much of the subject addresses the issue of how information *should* be presented rather than how it *can* be presented. To this end, the subject will present some of the cognitive underpinnings of the use of multimedia and apply these in a practical project. In recognition of the rapidity with which multimedia technologies are changing, students will have some choice in the technical aspects of some of their assignment work.

Students should improve their ability to work in and collaborate with a team as well as their ability to write a report. Seminar classes will support the development of skills in critical reading and analysis of the research literature in this area as well as in presenting an oral review of such literature.

**Assessment:** A written research paper of up to 2000 words and a seminar presentation due during the semester (30%); workshop and seminar participation (10%); an individual assignment relating to learning technical skills due mid-semester (30%); a group assignment relating to appropriate design and application of multimedia components due at the end of semester (30%). Satisfactory completion of individual assessment components and attendance of at least 80% of seminars is necessary to pass the subject.

### 600-311 Research Project A

See full subject details on page 1.

### 600-312 Research Project B

See full subject details on page 1.

## Professional Skills Program

### 615-103 PSP: Business Communication

**Note:** This subject is only available to students enrolled in an Information Systems single degree, combined degree or Diploma course.

Students will have completed 615-101 before enrolling in this subject.

Together with 615-203, this subject is designed to lead to the next level of the Professional Skills Program. It can be undertaken before or after 615-203.

**Coordinator:** Dr S Balbo

**Contact:** A 1-hour workshop each week for 11 weeks (*Semester 2*).

**Description:** This is the first of the Professional Skills Program (PSP) for Information Systems subjects. It focuses on providing a range of social and commercial skills and enhancing business communication capabilities. This includes various forms of communication in a range of situations. The subject also offers the benefit of building confidence through practice.

The program includes workshops focusing on:

- effective communication,
- non-verbal communication,
- negotiation,
- conflict resolution, and
- effective writing in business environments.

**Assessment:** None.

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**615-203 PSP: Teamwork**

**Note:** This subject is only available to students enrolled in an Information Systems single degree, combined degree or Diploma course.

Students will have completed 615-101 before enrolling in this subject.

Together with 615-103, this subject is designed to lead to the next level of the Professional Skills Program. It can be undertaken before or after 615-103.

**Coordinator:** Dr S Balbo

**Contact:** A 1-hour workshop each week for 11 weeks (*Semester 1*).

**Description:** This is the second of the Professional Skills Program (PSP) for Information Systems subjects. It has been designed to further each student's range of social and commercial skills. The subject covers a number of areas seen as important or critical by employers. It includes various forms of team and workplace related issues covering a range of situations. The subject also builds students' confidence in their people skills and business relationships.

The program includes workshops focusing on:

- team communication issues,
- working with differences,
- leadership,
- decision making,
- different workplace roles,
- collaborative writing, and
- making meetings work.

**Assessment:** None.

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**615-303 PSP: Workplace Transition**

**Note:** This subject is only available to students enrolled in an Information Systems single degree, combined degree or Diploma course.

Students will have completed both 615-103 and 615-203 before enrolling in this subject.

**Coordinator:** Dr S Balbo

**Contact:** 6 lectures held throughout the semester (*Semester 2*).

**Description:** This is the third of the Professional Skills Program (PSP) for Information Systems subjects. It has been designed to expand each student's range of social and commercial skills in readiness for roles in business environments and includes highlighting the student's value to an organisation. The subject covers various forms of communication and presentation to highlight the individual's skills and personality. Presenters from industry will be a major contribution to the subject.

The program includes lectures focusing on:

- creating your portfolio,
- great resumes,
- employers' expectations,
- cover letters,
- selection criteria, and
- interviews.

**Assessment:** None.

