279-BB Bachelor of Science and Bachelor of Information Systems

Year and Campus:	2009
Fees Information:	Subject EFTSL, Level, Discipline & Census Date, http://enrolment.unimelb.edu.au/fees
Level:	Undergraduate
Duration & Credit Points:	
Contact:	Science Student Centre Old Geology building University of Melbourne Victoria 3010 AUSTRALIA Telephone +61 3 8344 6404 Facsimile +61 3 8344 5803 Web: **http://www.science.unimelb.edu.au (http://www.science.unimelb.edu.au/)**
Course Overview:	There is no further new student intake into this course after 2007. The combined Bachelor of Science/Bachelor of Information Systems course provides a course of study for students who want to combine their training in a scientific discipline with the ability to imagine, design, build, and use information systems applications. As a knowledge-intensive discipline, science increasingly relies on these abilities as well as on specific content knowledge. The graduates of this course readily find employment across a spectrum of scientific careers, particularly those that involve the collection, analysis, reporting, and dissemination of data, and the technical and organisational skills to convert that data into useful information.
Objectives:	Upon completion of the course, students should: # have a broad knowledge of science across a range of disciplines, with a higher level of understanding in one or more of those disciplines; # understand how to use information technology, including hardware, software, databases and networks, as the technical foundation for other organisational systems; # have a solid theoretical grounding in both information technology and organisations; # have gained practical experience working both individually and in groups to turn scientific theory into practice; # be able to combine their knowledge of information technology and science to recognise opportunities for the use of information systems; # be able to locate, access, use, and add to the information necessary for the solution of scientific problems; # be able to place a value on the information created, by themselves as individual scientists and by the organisations of which they are a part, so that this information may be appropriately managed; and # be able to disseminate knowledge as required to their scientific peers, to the members of their organisations, and to the general public.
Course Structure & Available Subjects:	Students must complete a minimum (and maximum) of 500 points. Within the 500 points students must ensure that they satisfy the requirements of both the science component and the information systems component as specified below. The final first year intake into the Bachelor of Science/Bachelor of Information Systems course was at the start of 2007. In addition to the information below, current BIS students should refer to other resources regarding course requirements and appropriate subject selection:

- Previous years' handbooks (for each of the years that a student has been enrolled in the course).
- The course planning website of the Science Student Centre: **http://www.science.unimelb.edu.au/current/planning/index.php (http://www.science.unimelb.edu.au/current/planning/index.php)**

The description of the BSc/BIS course has changed over recent years. Students may complete this course as defined by the current structure or a structure detailed in a previous year's handbook, applicable to any year the student was enrolled in the course.

Majors/Minors/ Specialisations

Science majors available in this course

All students in the Bachelor of Information Systems/Bachelor of Science are required to complete a science major.

A science major is defined as 50 points at third year level in an approved science discipline.

- The psychology major is the clear exception to this rule as the psychology major requires completion of nine compulsory subjects and at least one elective (a minimum of 125 points in total). This major also only specifies 37.5 points at third year level. Although the major study in psychology only requires 37.5 points at third year level, all undergraduate science students must complete a minimum of 50 points of third year level science subjects to satisfy their degree requirements.
- The biotechnology major is also comprised of less than 50 points at third year level, but it can only be undertaken in conjunction with another life sciences major.
- The environmental science major can only be undertaken in conjunction with a second science major (which cannot be biotechnology or history and philosophy of science).
- The history and philosophy of science major can only be undertaken in conjunction with a second science major (which cannot be biotechnology or environmental science).

To complete a major, students complete one of the science majors listed below. Students may not complete alternative combinations of subjects to major unless approval is obtained from the Science Student Centre. Contact the Science Student Centre for further information.

The descriptions of science majors may vary from year to year. Students may complete a major as defined by the current structure or structure detailed in a previous year's handbook applicable to any year the student was enrolled in the course.

The following science majors are available to BIS/BSc students:

Major/Minor/Specialisation
Anatomy
Atmosphere and Ocean Sciences
Biochemistry and Molecular Biology
Biotechnology
Botany
Cell Biology
Chemistry
Computer Science
Conservation and Australian Wildlife
Ecology
Environmental Science
Genetics
Geography
Geology
History and Philosophy of Science

Immunology
Marine Biology
Mathematics and Statistics (Applied Mathematics specialisation)
Mathematics and Statistics (Pure Mathematics specialisation)
Mathematics and Statistics (Statistics specialisation)
Mathematics and Statistics (Operations Research specialisation)
Mathematics and Statistics (Financial Mathematics specialisation)
Mathematics and Statistics (Mathematical Physics specialisation)
Mathematics and Statistics (Discrete Mathematics specialisation)
Microbiology
Neuroscience
Neuroscience (Behavioural Neuroscience specialisation)
Pathology
Pharmacology
Physics
Physics (Mathematical Physics specialisation)
Physiology
Psychology
Reproduction and Development
Vision Science
Zoology

Subject Options:

Course requirement

Science component

A minimum of 237.5 science points is required, which must include at least 237.5 science points, comprising:

- between 75 and 125 science points at the first year subject level;
- completion of 50 points of a prescribed science major at the third year subject level.

Note that:

- at least 75 science points at first year subject level must be completed;
- a maximum of 125 points of science and non-science subjects at first year subject level can be included;
- at least 50 points at the first year subject level must be completed before proceeding to second year level subjects;
- there are no second year subject level requirements;
- students completing a major in psychology must complete 50 science points at the third year subject level (37.5 points of prescribed third year subject level psychology subjects plus an additional 12.5 points of third year level science subjects)

Course requirement

Information systems component

Students must complete a minimum of 212.5 points of information systems studies, comprising:

- 175 points of core subjects in information systems at first, second and third year level (or approved alternatives);
- 25 points of information systems elective subjects at third year level;
- a 12.5 point subject in a business-oriented discipline (see below for list of options)

First year level Core information systems subjects and approved alternatives offered in 2009

615-110 Foundations of Information Systems (/view/2009/615-110) *(enrolment by invitation of Head of Department)*

615-150 Organisational Processes (/view/2009/615-150) (/view/2009/615-150) *(enrolment by invitation of Head of Department)*

600-151 Informatics 1: Practical Computing (/view/2009/600-151) *(replaces 615-145)*

600-152 Informatics 2: People, Data and the Web (/view/2009/600-152) *(replaces 615-240)*

Students must include either 615-160 Tools of Analysis (prior to 2008) or any first year level mathematics and statistics subject as part of the total 500 course points in the BSc/BIS.

Second year level Core information systems subjects and approved alternatives offered in 2009

600-206 Informatics 3: Content Management (/view/2009/600-206) *(replaces 615-230)*

615-237 Telecommunications Concepts (/view/2009/615-237)

615-240 Concepts in Software Development II (/view/2009/615-240) *(enrolment by invitation of Head of Department)*

615-245 Systems Analysis and Design (/view/2009/615-245)

615-251 Organisational Analysis and Change (/view/2009/615-251)

Please note: the core subject 615-252 Electronic Commerce will not be offered in 2009. It will be replaced by a new third year level subject *ICT Based Inter-organisational Processes* to be offered for the first time in 2010 (subject to approval).

Third year level Core information systems subjects offered in 2009

615-346 Information Systems Architecture (/view/2009/615-346)

615-355 Professional Issues in Info Systems (/view/2009/615-355)

615-372 Project Management (/view/2009/615-372)

615-373 Industrial Project (/view/2009/615-373)

Second year level Elective information systems subjects offered in 2009

615-201 Information Visualisation (/view/2009/615-201)

615-202 Reasoning with Informatics (/view/2009/615-202)

615-281 Emerging Technologies for Transformation (/view/2009/615-281)

615-282 Shaping the Organisation with ICT (/view/2009/615-282)

Third year level Elective information systems subjects offered in 2009

615-330 Advanced Concepts in Database (/view/2009/615-330)

615-348 Human Computer Interaction (/view/2009/615-348)

615-351 Strategic IS Management (/view/2009/615-351)

615-360 Organisational Information Security (/view/2009/615-360)

615-363 Mobile Computing (/view/2009/615-363)

Business-oriented subjects offered in 2009

Select one business-oriented subject from this list.

306-108 Accounting Transactions and Analysis (/view/2009/306-108)

316-101 Introductory Macroeconomics (/view/2009/316-101)

316-102 Introductory Microeconomics (/view/2009/316-102)

333-101 Finance 1 (/view/2009/333-101)

325-101 Managing People and Organisations (/view/2009/325-101)

	732-103 Principles of Business Law (/view/2009/732-103) **Balance of points towards the 500 points of the BSc/BIS** Students must select Faculty of Science subjects to complete the remaining 50 points and must include either 615-160 Tools of Analysis (prior to 2008) or any first year level mathematics and statistics subject as part of the total 500 course points in the BSc/BIS.
Entry Requirements:	There is no new student intake into this course after 2007. For enquiries about admission requirements for later year entry into this program, please contact the Science Student Centre.
Core Participation Requirements:	It is University policy to take all reasonable steps to minimise the impact of disability upon academic study and reasonable steps will be made to enhance a student's participation in the University's programs. Students who feel their disability may impact upon their active and safe participation in a subject are encouraged to discuss this with the relevant subject coordinator and the Disability Liaison Unit.
Further Study:	Honours and Masters level studies are available as indicated at **http://www.science.unimelb.edu.au (http://www.science.unimelb.edu.au)**
Graduate Attributes:	In science/information systems at the University of Melbourne, we expect to educate our students in the fundamental skills of transforming information into knowledge and using technology to manage knowledge in organisations. These outcomes are fully consistent with the University's general ambition for our graduates, and emphasise the transferability of the skills practised in science and in information systems. The Bachelor of Science and Bachelor of Information Systems degrees aim to educate and train students in both science and information technology areas of study. Through their scientific training, these graduates have a broad knowledge of science across a range of disciplines, with a higher level of understanding in one or more of these disciplines. They also have an appreciation of the historical background and evolution of scientific concepts. They have the knowledge, skills and attitude to enable them to adapt to scientific, technological and social change and have a sense of intellectual curiosity and a desire for lifelong learning. Through their training in information systems, these graduates also understand the issues involved in the design, specification, and creation of information systems, and the human and organisational arrangements needed to use information systems to achieve organisational goals. Science/information systems graduates are particularly strong in their cognitive skills. They are able to: synthesise and evaluate information from a range of sources and add new ideas to their existing knowledge; observe, record and evaluate data or evidence appropriately; classify and model data, and undertake information mapping and representation; make effective use of information to identify and solve problems; synthesise and integrate disparate elements into a meaningful whole; analyse and evaluate the organisational environment and its impact on information systems; undertake systems analysis and design; implement information systems efficiently and effectively in organisations; and analyse and understand the functions, processes, environments, characteristics, and cultures that give rise to a complete organisation. These and other analytical skills are essential for understanding, and effectively communicating with others on issues relating to complex organisational situations and the potential and performance of information systems. As information systems graduates they will have the skills necessary to: ensure that effective design, development, and implementation of information systems in organisations occurs; comprehend the larger picture of how information systems collect, process, store, and distribute information so that it can be used to make decisions, keep track of resources, and plan for the future; and imagine, specify, design, justify, build, implement, manage, and use information systems to add value in a wide variety of public and private organisations. Graduates are familiar and comfortable working with computer hardware and software, telecommunications, databases and data structures, information technology architectures, and information technology infrastructures. They have practical experience in these areas enabling them to assess the current and future capability of information technology. They therefore know the potential of information technology to add value in an organisation, knowledge that is vital to the successful implementation and use of information systems. Graduates in science/information systems are able to be creative in their approach to scientific or technology-related issues. They are used to formulating hypotheses which can be tested for validity. They can extrapolate from the known to the unknown and are comfortable working with analogues rather than needing to deal with literal situations. The science and technology disciplines value clear reporting. Consequently, the science/information systems graduate has developed skills of efficient and effective communication of ideas and results, whether in the accepted modes of scientific and business report writing or through

	more informal oral presentations. Graduates recognise the need to present information and ideas in an effective written form that is appropriate to the purpose and the reader. These graduates are adept at activity planning as well as the application of theory to practice. Some students will have found collaborative learning an efficient tool, while others will find their practical work enhanced by effective teamwork. Through the need to manage the multiplicity of tasks (lectures, laboratory and assignment work) and the professional skills program these graduates have developed professional skills within their program of study. They: are aware of the need to structure and manage time effectively and efficiently; can retain balance and prioritise their activities; can juggle several tasks simultaneously; take responsibility for their own work, independently or within a group, and plan their schedule appropriately; are able to interact effectively with people across the broad spectrum of technical and business interests and skills; and have a set of personal competencies, including listening, collecting and synthesising information, writing, presenting, and working in teams, which are vital in any organisational context.
Generic Skills:	A detailed description of the generic skils expected of a graduate of the Bachelor of Science/ Bachelor of Information Systems is included under 'Graduate Attributes'.