Bachelor of Liberal Studies (BLibStud) degree program

Summary of requirements

In the Bachelor of Liberal Studies students will undertake a broad liberal education which emphasises communication and problem-solving skills. The Faculties of Arts and Sciences jointly administer the degree. The requirements for the degree are set out in the Senate and Faculty Resolutions (see chapter 5) which should be read by all intending candidates.

Enrolment guide

To qualify for the award of the degree a student shall complete units of study having a total value of at least 192 credit points, including:

- at least 120 intermediate or senior credit points
- at least one Arts major and one Science major
- at least 28 credit points, including 16 intermediate or senior credit points, from units of study in one language subject area other than English from Part A of the table of units of study for the degree of Bachelor of Arts
- a 6 credit point unit of study in communication and analytical skills or in other academic skills as may be prescribed from time to time (currently, ENGL 1050 Language in Context or LNGS 1005 Introduction to English Linguistics)
- a minimum of 6 credit points from units of study in Mathematics and Statistics.

All students, notwithstanding any credit transfer, must complete a major from each of the Faculties of Arts and Science taken at the University of Sydney.

A major in an Arts subject area requires 32 credit points from senior units of study in an Arts subject area listed in Part A of the table of units of study for the Bachelor of Arts, including any units of study specified in the table of units of study as compulsory for that major, or of at least 16 senior credit points from a Part A subject area combined with no more than 16 senior credit points from units of study approved by the Dean of the Faculty of Arts for cross-listing with the major, except in the case of Semiotics, Medieval Studies, and European Studies where the entire major may be cross-listed, and in such other subject areas as may be approved by the Dean of the Faculty of Arts.

A major in a Science subject area normally requires the completion of 24 credit points of senior units of study in that area, including any units of study specified in the table of undergraduate units of study I as compulsory for that major.

Students are required to nominate their choice of majors no later than the beginning of the fifth semester of candidature, but with the permission of the Deans of Arts and Science as appropriate, may change the majors during the candidature.

A maximum of 28 credit points may be counted towards the degree requirements from units of study offered by faculties other than the Faculties of Arts and Science.

Units of study completed at the University of Sydney Summer School which correspond to units of study in Part A of the table of units of study for the Bachelor of Arts or from the table of undergraduate units of study I for the Bachelor of Science may be credited towards the course requirements.

If a student fails or discontinues enrolment in one unit of study twice, a warning will be issued that if the unit is failed a third time, the student may be asked to show good cause why he or she should be allowed to re-enrol in that unit of study.

Honours

There will be honours courses in all Arts and Science subject areas. To qualify to enrol in honours, students must be have:

- completed the requirements for the award of the Bachelor of Liberal Studies with the grade of Distinction or High Distinction, or be a pass graduate holding an equivalent qualification from another institution
- completed a major at credit average in the subject area relating to the intended honours course (or equivalent at another institution)
- satisfy any additional criteria set by the Head or Chair of Department concerned.

To qualify for the award of an honours degree, students shall complete 48 credit points of honours units of study in the table of units of study for the Bachelor of Arts or in the table of undergraduate units of study for the Bachelor of Science, as prescribed by the Head or Chair of Department concerned.

The grade of honours and the honours mark are determined by performance in the honours course.

Transfer to the Bachelor of Arts or the Bachelor of Science

Students who at the end of at least four semesters of candidature have completed at least 96 credit points in total, and who intend to satisfy the requirements for entry to a Fourth Year Honours unit of study or joint Honours unit of study for the Bachelor's degrees in Arts or Science, may apply to transfer to candidature for one of these degrees.

Students who at the end of at least six semesters of candidature have completed units of study which correspond to the entry requirements for Fourth Year Honours for the Bachelor's degrees in Arts or Science may apply to transfer to candidature for one of these degrees.

Students for the degree may, with the permission of the Faculty concerned, transfer to candidature for the pass degrees of Bachelor of Arts or Bachelor of Science no later than the end of the fourth semester of candidature.

If a student has completed the normal requirements for the pass degree of Bachelor of Arts, Bachelor of Arts (Asian Studies) or Bachelor of Science, he or she may apply to take one of these degrees provided that candidature for the Bachelor of Liberal Studies is abandoned.

The maximum enrolment in a single Arts subject area is 18 junior credit points and 64 senior credit points.

Universities Admissions Index (UAI)

The minimum UAI for admission to the Faculty varies from year to year.

Degree resolutions

See chapter 5.

Bachelor of Liberal Studies units of study

ENGL 1050 Language in Context

6 credit points
Dr Williams (Coordinator)
Offered: February, July. **Classes:** Two 1 hour lectures and one 1 hour tutorial. **Assessment:** Two short class exercises, one essay, end of semester exam.

The unit provides an introduction to the systematic study of English language for a variety of practical, interpretive purposes. Major topics include: relations between different varieties of English, the study of grammatical structures from a meaning perspective, speech and writing variation, relationships between visual images and language, and the relevance of historical changes to the English language to contemporary practice. The major concepts introduced in this unit will enable students to analyse texts systematically, and to critique the significance of linguistic variation.

Textbooks

A resource book will be available.

LNGS 1005 Introduction to English Linguistics

6 credit points
Prof W Foley

Offered: February. Prohibition: may not be taken as well as LNGS 1001 or LNGS 1004. Classes: three 1 hr lec & one 1 hr tut/wk. Assessment: one 3hr exam, various written assignments or essays.

This course looks at the structure of English from the point of view of modern structural linguistics. It will be especially valuable to non-native speakers of English in giving them an overview of how and why English works the way it does. Topics covered include: English phonetics; intonation; word types; count and mass nouns; verb types and sentence structures; auxiliary verbs and tense and mood; voice, topicality and information structure.

Degree of Bachelor of Computer Science and Technology (BCST)

Summary of requirements

The requirements for the degree are set out in the Senate and Faculty Resolutions (see chapter 5) which should be read by all intending candidates. In particular it is important to ensure that any proposed course of study will comply with the basic requirements for the degree. Important aspects of the Resolutions are summarised below. The Resolutions should be consulted for any clarification of the summary points. The Resolutions in force prior to 2001 are contained in the *Faculty of Science Handbook 2000*, which can be inspected at the Faculty Office.

Enrolment guide

To complete your degree you must gain credit for at least 144 credit points. The 144 credit points required for the degree must include:

- at least 78 credit points from Science subject areas
- a major in Computer Science
- in addition to the 24 credit points required for the major, either a further 12 credit points from senior units of study each of which is either offered in the BSc in the subject areas of Computer Science or Information Systems; or listed in Table III (ii) OR 12 credit points from senior units of study offered in the BSc in a single subject area other than Computer Science or Information Systems
- at least 26 credit points from the Science subject areas of Mathematics and Statistics
- at least 12 credit points of junior units of study from a single Science subject area other than Computer Science, Mathematics, Statistics or .Information Systems
- no more than 72 credit points from junior units of study
- no more than 18 credit points from units in which a grade of Pass (Concessional) has been awarded.

A major in Computer Science normally requires the completion of 24 credit points of senior units of study in Computer Science, including at least 4 credit points from units of study in Table III(i).

Note: units of study listed with an alpha code of INFO can be counted toward either of the Science subject areas of Computer Science or Information Systems. However any unit may only be counted once.

You should also note the following:

- a maximum of 66 credit points may be counted towards the degree requirements from units of study offered by faculties other than the Faculty of Science
- units of study completed at the University of Sydney Summer School which correspond to units of study in the table of undergraduate units of study may be credited towards the course requirements
- a standard full time enrolment is 24 credit points per semester; less than 18 credit points per semester is considered to be part time
- you may not enrol in more than 32 credit points in any one semester without permission
- before being admitted to enrol in a unit of study, you have to meet any prerequisites and corequisites for that unit of study
- advanced units of study are indicated by a 9 (or 8) as the second digit of the unit of study code. Entry to these units of study are limited (details can be obtained from Departments)
- a student may not enrol without first obtaining permission from the Dean in additional units of study once the degree requirements of 144 credit points have been satisfied
- if a student fails or discontinues enrolment in one unit of study twice, a warning will be issued that if the unit is failed a third time, the student may be asked to show good cause why he or she should be allowed to re-enrol in that unit of study.

Honours

There will be honours courses in Computer Science and Information Systems. With permission of the Dean, candidates may be allowed to complete an Honours course available in the Faculties of Science, Arts or Economics, provided that the candidate's plan of study is appropriate for the degree.

Plans of units of study

It is important when choosing units of study at any stage of your university career that you should consider your overall degree program. The BCST is designed as a flexible degree program which enables students with a strong interest in computing to combine a core of fundamental computer science topics with a wide range of subjects in the first two years, and the possibility of a double major, combining computer science with another computationally based discipline.

Below are some of the main career paths; detailed advice on relevant units of study can be found on the web site of the Computer Science department.

- Network manager, system administrator or programmer for embedded systems
- Programmer for commercial applications
- Information system consultant
- Programmer for scientific applications
- Programmer for bioinformatics
- Programmer for geographic information systems
- Computer scientist with interest in mathematics.

Universities Admissions Index (UAI)

The minimum UAI for admission to the Faculty varies from year to year.

Special permission

You should note that the Faculty can, in certain circumstances, permit exceptions to the normal requirements for a degree. Applications for special consideration should be made in writing to the Associate Dean (Undergraduate) after discussion with staff in the Faculty Office.

Degree resolutions

See chapter 5.

Degree of Bachelor of Computer Science and Technology (Advanced)

Summary of requirements

The Bachelor Computer Science and Technology (Advanced) degree program requires the equivalent of three years of full time study. An Honours program is available and requires the equivalent of a further year of full time study.

Enrolment guide

To complete your degree you must gain credit for at least 144 credit points. The 144 credit points required for the degree must include:

- no more than 48 credit points from junior units of study
- at least 16 credit points of intermediate units of study in the Science subject area of Computer Science at either the advanced level or as TSP units
- at least 48 credit points of senior units of study of which at least 24 are completed at the advanced level or as TSP units taken from the Science subject area of Computer Science of from units listed in Table rH(ii)
- COMP3809.

You should also note that you must maintain in intermediate and senior units of study in Science subject areas an average mark of 65 or greater in each year of enrolment.

The Resolutions of the Senate and Faculty governing candidature for the degree of Bachelor of Computer Science and Technology listed in chapter 5 also govern the BCST (Advanced) degree program. Students should refer to the table of units of study for the BSc (Table I).

Progression requirements

A minimum requirement for progression in the BCST (Advanced) will be set annually and will be based on WAM and performance in advanced units of study. Students in advanced degree programs are expected to obtain a credit average in each year of study.

Universities Admissions Index (UAI)

The minimum UAI for admission to the Faculty varies from year to year.

Transferring into the BCST (Advanced) degree program

Students who have completed at least 48 credit points may be permitted to transfer to the BCST (Advanced) from the BCST or other degree programs if their mark averaged over all attempted units of study is 75 or greater, and they are able to enrol in the required number of advanced level units or TSP units.

Degree resolutions

See chapter 5.

Table III: Bachelor of Computer Science and Technology

Unit of study	Credit points	A) Assumed Knowledge Q) Qualifying P) Prerequisite C) Corequisite N) Prohibition	Offered
■ Senior units of study (i)			
COMP 3201 Algorithmic Systems Project	4	C) COMP 3001 or 3901. *NB: Students intending to major in Computer Science are advised to enrol in one of COMP 3201, 3202, 3203, 3204, 3205, 3206 or 3809.*	*July*
COMP 3202 Computer Systems Project	4	P) COMP 3009 or 3909. *NB: Students intending to major in Computer Science are advised to enrol in one of COMP 3201, 3202, 3203, 3204 or 3205, 3206 or 3809.*	*February, July*
COMP 3203 Artificial Intelligence Project	4	C) COMP 3002 or 3902. *NB: Students intending to major in Computer Science are advised to enrol in one of COMP 3201, 3202, 3203, 3204, 3205, 3206 or 3809.*	*February*
COMP 3204 Software Engineering Project	4	C) COMP 3100 or 3800. *NB: Students intending to major in Computer Science are advised to enrol in one of COMP 3201, 3202, 3203, 3204, 3205, 3206 or 3809.*	*July*
COMP 3205 Product Development Project	4	P) COMP 3008 or 3908. *NB: Students intending to major in Computer Science are advised to enrol in one of COMP 3201, 3202, 3203, 3204 or 3205, 3206 or 3809.*	*February, July*
COMP 3206 Bioinformatics Project	4	Q) COMP 2004 or 2904. P) 8 credit points of Senior Computer Science (including COMP 3008 or 3100 or 3908 or 3800) and 16 credit points of Intermediate Biology, Biochemistry and/or Pharmacology. *NB: Students intending to major in Computer Science are advised to enrol in one of COMP 3201, 3202, 3203, 3204, 3205, 3206 or 3809.*	*July*
COMP 3809 Software Project (Advanced)	4	P) 16 credit points of Intermediate or Senior Computer Science, with Distinction average. C) 8 credit points of Senior Computer Science. *NB: Students intending to major in Computer Science are advised to enrol in one of COMP 3201, 3202, 3203, 3204, 3205, 3206 or 3809.*	*February, July*
■ Senior units of study (ii)			
Consult Faculty of Economics handbook for details of ECMT units of study. Consult Faculty of Engineering handbook for descriptions of ELEC units of study.			
ELEC 3601 Digital Systems Design	4	P) Advisory Prerequisite: ELEC 2601 Microcomputer Systems or COMP2001 Computer Systems.	*July*
ELEC 4302 Image Processing and Computer Vision	4	P) Advisory Prerequisites: ELEC2301 Signals and Systems, and ELEC4303 Digital Signal Processing.	*July*
ELEC 4303 WARNING: Invalid code			
ELEC 4501 Data Communication Networks	4	P) Advisory Prerequisites: ELEC 3502 Random Signals and Communications, and ELEC3503 Introduction to Digital Communications.	*February*
ELEC 4601 Computer Design	4	P) Advisory Prerequisites: ELEC 3403 Switching Devices and High Speed Electronics, and ELEC 3601 Digital Systems Design.	*February*
ELEC 4602 Real Time Computing	4	P) Advisory Prerequisites: ELEC3601 Digital Systems Design and COMP3100 Software Engineering.	*February*
ELEC 5501 Communication Networks (Advanced)	4		*February, July*
ELEC 5601 WARNING: Invalid code			
ELEC 5602 Computer Architecture (Advanced)	4	A) ELEC4601 Computer Design and (COMP2001 Computer Systems or COMP2901 Computer Systems Adv).	*July*
ELEC 5603 WARNING: Invalid code			
ELEC 5604 WARNING: Invalid code			

Table III: Bachelor of Computer Science and Technology - continued

Unit of study		Credit points	A) Assumed Knowledge Q) Qualifying P) Prerequisite C) Corequisite N) Prohibition	Offered
ELEC 5605	Digital Engineering (Advanced)	4	A)ELEC4601 Computer Design.	*July*
ELEC 5607	Hardware/Software Co-Design	4	A) ELEC3601 Digital Systems Design and COMP3100 Software Engineering.	*July*
ISYS 3000	Information Systems Management	4	Q) INFO 2000 or COMP 2000 or ISYS 2006.	*July*
ISYS 3011	WARNING: Invalid code			
ISYS 3012	Project Management and Practice	4	Q) INFO 2000.	*February*
ISYS 3015	Analytical Methods for IS Professionals	4	Q) ISYS 2006 (or ARINIOOO for BCST and BA Informatics students) and 24 credit points of Intermediate units of study including 8 credit points from INFO or ISYS units of study.	*February*
ISYS 3207	Information Systems Project	8	Q) ISYS 3015 or ARIN 2000. P) INFO3005orISYS3000or3012or3113.	*July*
MATH 3005	Logic	4	P) (for all but BCST students) 8 credit points of Intermediate Mathematics; (for BCST students) 8 credit points of Intermediate Mathematics or 12 credit points of Junior Mathematics at Advanced level.	*February*
MATH 3007	Coding Theory	4	P) 8 credit points of Intermediate Mathematics (strongly advise MATH 2002 or 2902).	*July*
MATH 3010	Information Theory	4	P) 8 credit points of Intermediate Mathematics (strongly advise MATH 2001 or 2901 and some probability theory).	*July*
MATH 3016	Mathematical Computing I	4	P) 8 credit points of Intermediate Mathematics and one of MATH 1001 or 1003 or 1901 or 1903 or 1906 or 1907. N) May not be counted with MATH 3916.	*February*
MATH 3019	Signal Processing	4	P) MATH (2001 or 2901) and MATH (2005 or 2905). N) May not be counted with MATH 3919.	*February*
MATH 3020	Nonlinear Systems and Biomathematics	4	P) 8 credit points of Intermediate Mathematics (strongly advise MATH 2006 or 2906 or 2908 or 3003) and one of MATH 1001 or 1003 or 1901 or 1903. N) May not.be counted with MATH 3920.	*July*
MATH 3024	Elementary Cryptography and Protocols	4	P) 12 credit points of Intermediate Mathematics. Strongly advise MATH 2008 or 2908.	*February*
MATH 3905	Categories and Computer Science (Adv)	4	P) 12 credit points of Intermediate Mathematics. *NB: This unit of study is only offered in odd years.*	*February*
MATH 3916	Mathematical Computing I (Advanced)	4	P) 8 credit points of Intermediate Mathematics and one of MATH 1903 or 1907 or Credit in MATH 1003. N) May not be counted with MATH 3016.	*February*
MATH 3925	Public Key Cryptography (Advanced)	4	P) 12 credit points from Intermediate or senior mathematics. Strongly recommend MATH 3902.	*July*
PHYS 3301	Scientific Computing	4	P) 16 credit points of Intermediate units of study in Science Subject Areas. N) May not be counted with PHYS 3931.	*February*
PHYS 3303	Scientific Visualisation	4	P) 16 credit points of Intermediate units of study in Science Subject Areas. N) May not be counted with PHYS 3933.	*July*
PHYS 3931	Scientific Computing (Advanced)	4	P) 16 credit points at a level of Credit orbetterof Intermediate units of study in Science Subject Areas. N) May not be counted with PHYS 3301.	*February*
PHYS 3933	Scientific Visualisation (Advanced)	4	P) 16 credit points at a level of Credit or better of Intermediate units of study in Science Subject Areas. N) May not be counted with PHYS 3303.	*July*
STAT 3004	Design of Experiments	4	P) STAT 3002 or 3902.	*July*

Bachelor of Medical Science (BMedSc) degree program

Summary of requirements

The requirements for the degree are set out in the Senate and Faculty Resolutions (see chapter 5) which should be read by all intending candidates. In particular it is important to ensure that any proposed course of study will comply with the basic requirements for the degree. Important aspects of the Resolutions are summarised below. The Resolutions should be consulted for any clarification of the summary points. The Resolutions in force prior to 2001 are contained in the *Faculty of Science Handbook 2000,* which can be inspected at the Faculty Office. The Bachelor of Medical Science degree program the equivalent of three years of full time study. An Honours program is available and requires the equivalent of a further year of full time study.

Enrolment guide

To complete your degree you must gain credit for at least 144 credit points. The 144 credit points required for the degree must include:

- at least 48 credit points from junior units of study, comprising 12 credit points each from Biology, Chemistry, Mathematics and Physics; with the permission of the Faculty 12 credit points of Biology may be replaced with junior units of study in Computer Science or Psychology
- 40 credit points of core intermediate units of study
- a minimum of 36 credit points from senior units of study taken from the subject areas of Anatomy, Biology (Genetics), Biochemistry, Cell Pathology, Immunology, Infectious Diseases, Microbiology, Pharmacology and Physiology
- at least 12 credit points to be taken from any other intermediate or senior units of study.

All students, notwithstanding any credit transfer, must enrol in at least 36 credit points of senior units of study from Table IV. Students are required to have completed at least 32 credit points of the coreintermediate units of prior to enrolment in any senior units of study. It is possible for students to "carry" up to 8 credit points of core or elective units from the intermediate year into the senior year, provided that these units of study are not prerequisites for electives they may wish to undertake in the senior Year.

A student may not enrol without permission of the Dean in additional units of study once the degree requirements of 144 credit points have been satisfied, or in units of study which may not be counted towards the course requirements. The combination MATH 1003 and 1004 or 1903 and 1904 is not recommended in this degree. Students wishing to study Statistics/Calculus are advised to select from MATH 1003, 1005,1903,1905,1013,1015.

Universities Admissions Index (UAI)

The minimum UAI for admission to the Faculty varies from year to year.

Transferring into the BMedSc degree program

A limited number of students may be permitted to transfer into the BMedSc course at the beginning of the intermediate year from other degrees offered by the Faculty, from other degrees offered by the University of Sydney or from other institutions. In order to transfer students must achieve a Pass or better in all of the qualifying units of study, or units of study deemed equivalent by the Faculty. Selection is based solely on performance in the first year subjects. Applicants should anticipate a WAM of about 75 would be necessary to gain admission. Students who wish to transfer must apply for admission to the BMedSc course through the Universities Admission Centre.

BMedSc degree resolutions

See chapter 5.

Combined Engineering/Medical Science degrees

Summary of requirements

The requirements for the degree are set out in the Senate and Faculty Resolutions (see chapter 5) which should be read by all intending candidates.

A student may proceed concurrently to the degrees of Bachelor of Engineering (in any specialisation except Civil Engineering) and Bachelor of Medical Science.

Enrolment guide

To qualify for the award of the pass degrees a student shall complete units of study to a total value of at least 240 credit points including:

- at least 160 credit points from prescribed Engineering units of study (this total to include the 12 credit points from the Interdisciplinary Thesis)
- 40 credit points of intermediate core units of study listed in the table of undergraduate units of study IV for the Bachelor of Medical Science
- at least 24 credit points of senior units of study from the subject areas listed in Table IV
- 12 credit points from the Interdisciplinary Thesis.

Students who are so qualified may be awarded honours in the BE degree or undertake an honours course in the BMedSc degree.

Students may abandon the combined degree course and elect to complete either a BMedSc or a BE in accordance with the Resolutions governing those degrees.

Students will be under the general supervision of the Faculty of Engineering.

Universities Admissions Index (UAI)

The minimum UAI for admission into the course varies from year to year.

Degree resolutions

See chapter 5.

Table IV: Bachelor of Medical Science

Unit of study	Credit points	A) Assumed Knowledge Q) Qualifying P) Prerequisite C) Corequisite N) Prohibition	Offered
A. Junior units of study			
Biology			
BIOL 1001 Concepts in Biology	6	A) HSC 2-unit Biology course. N) May not be counted with BIOL 1901.	*February, January (short)*
BIOL 1002 Living Systems	6	A) HSC 2-unit Biology course. N) May not be counted with BIOL 1902.	*July*
BIOL 1003 Human Biology	6	A) HSC 2-unit Biology course. N) May not be counted with BIOL 1903.	*July*
BIOL 1901 Concepts in Biology (Advanced)	6	A) HSC 2-unit Biology course. P) UAI of at least 93 and at least 80% in HSC 2-unit Biology or equivalent, or by invitation, or a UAI of at least 95 (if no University level biology units have been taken), or Distinction or better for BIOL 1002, 1003, 1902 or 1903. N) May not be counted with BIOL 1001.	*February*
BIOL 1902 Living Systems (Advanced)	6	A) HSC 2-unit Biology course. P) UAI of at least 93 and at least 80% in HSC 2-unit Biology or equivalent, or by invitation, or a UAI of at least 95 (if no University level biology units have been taken), or a Distinction or better in BIOL 1001 or 1901. N) May not be counted with BIOL 1002.	*July*
BIOL 1903 Human Biology (Advanced)	6	A) HSC 2-unit Biology course. P) UAI of at least 93 and at least 80% in HSC 2-unit Biology or equivalent, or by invitation, or a UAI of at least 95 (if no University level biology units have been taken), or a Distinction or better in BIOL 1001 or BIOL 1901. N) May not be counted with BIOL 1003.	*July*
Chemistry			
CHEM 1001 Fundamentals of Chemistry 1A.	6	A) There is no assumed knowledge of chemistry for this unit of study, but students who have not undertaken an HSC chemistry course are strongly advised to complete a preliminary chemistry course before lectures commence. N) May not be counted with CHEM 1101 or 1901 or 1903.	*February*
CHEM 1002 Fundamentals of Chemistry 1B	6	P) CHEM 1001 or equivalent. N) May not be counted with CHEM 1102 or 1902 or 1904.	*July*
CHEM 1101 Chemistry 1A	6	A) HSC Mathematics 2 unit course; and the Chemistry component of the 4-unit or 3-unit HSC Science course, or 2-unit Chemistry. C) Recommended concurrent unit of study: Preferred - MATH 1001 and 1002 or 1901 and 1902; otherwise - MATH 1011 and 1012. N) May not be counted with CHEM 1001 or 1901 or 1903.	*February, July, January (short)*
CHEM 1102 Chemistry 1B	6	Q) CHEM 1101 or a Distinction in CHEM 1001 or equivalent. C) Recommended concurrent unit of study: Preferred-MATH 1003 and 1005 or 1003 and 1004 or 1903 and 1905 or 1903 and 1904; otherwise - MATH1004 and 1005 or 1013 and 1015. N) May not be counted with CHEM 1002 or 1902 or 1904.	*February, July, January (short)*
CHEM 1901 Chemistry 1A (Advanced)	6	P) UAI of at least 92.5 and at least 75% in HSC 2-unit Chemistry or equivalent; by invitation. C) Recommended concurrent unit of study: Preferred - MATH 1001 and 1002 or 1901 and 1902; otherwise - MATH 1011 and 1012. N) May not be counted with CHEM 1001 or 1101 or 1903.	*February*
CHEM 1902 Chemistry IB (Advanced)	6	Q) CHEM 1901 or 1903 or Distinction in CHEM 1101 or equivalent; by invitation. C) Recommended concurrent unit of study: Preferred - MATH 1003 and 1005 or 1003 and 1004 or 1903 and 1905 or 1903 and 1904, otherwise - MATH 1013 and 1015 or 1004 and 1005. N) May not be counted with CHEM 1002 or 1102 or 1904.	*July*
CHEM 1903 Chemistry 1A (Special Studies Program)	6	P) UAI of at least 98.7 and at least 85% in HSC 2-unit Chemistry or equivalent. Entry is by invitation. C) Recommended concurrent unit of study: Preferred - MATH 1001 and 1002 or 1901 and 1902; otherwise - MATH 1011 and 1012. Students in the Faculty of Science Talented Students Program are automatically eligible. For the purpose of Resolution 11 this unit of study is deemed to be designated as an Advanced unit of study. N) May not be counted with CHEM 1001 or 1101 or 1901.	*February*

Table IV: Bachelor of Medical Science - continued

Unit of study	Credit points	A) Assumed Knowledge Q) Qualifying P) Prerequisite C) Corequisite N) Prohibition	Offered
CHEM 1904 Chemistry 1B (Special Studies Program)	6	P) Distinction in CHEM 1903; by invitation. C) Recommended concurrent unit of study: Preferred - MATH 1003 and 1005 or 1003 and 1004 or 1903 and 1905 or 1903 and 1904; otherwise - MATH 1013 and 1015 or 1004 and 1005. N) May not be counted with CHEM 1002 or 1102 or 1902.	*July*
CHEM 1908 Chemistry 1 Life Sciences A (Advanced)	6	P) UAI of at least 92.5 and at least 75% in HSC 2-unit Chemistry or equivalent; by invitation. C) (Recommended concurrent unit of study) Preferred - MATH 1001 and 1002 or 1901 and 1902; otherwise MATH 1011 and 1012. N) May not be counted with CHEM 1002 or 1102 or 1902 or 1904 or 1907.	*February*
CHEM 1909 Chemistry 1 Life Sciences B Mol (Adv)	6	P) CHEM 1907 or 1908 or equivalent. N) May not be counted with CHEM 1001 or 1101 or 1901 or 1903.	*July*
Computer Science			
COMP 1001 Introductory Programming	6	A) HSC 3-unit Mathematics. C) Students intending to major in Computer Science are advised to enrol in MATH 1003 and 1004 or 1004 and 1005 or 1903 and 1904 or 1904 and 1905 in their first year. N) May not be counted with COMP 1901.	*February, July*
COMP 1002 Introductory Computer Science	6	P) COMP 1001 or 1901. N) May not be counted with COMP 1902.	*February, July*
COMP 1901 Introductory Programming (Advanced)	6	A) HSC 3-unit Mathematics (Requires permission by the Head of Department). N) May not be counted with COMP 1001.	*February, July*
COMP 1902 Introductory Computer Science (Advanced)	6	P) Distinction in COMP 1901 or 1001. N) May not be counted with COMP 1002.	*February, July*
Mathematics			
MATH 1001 Differential Calculus	3	A) HSC 3-unit Mathematics. N) May not be counted with MATH 1901 or 1011.	*February, January (short)*
MATH 1002 Linear Algebra	3	A) HSC 3-unit Mathematics. N) May not be counted with MATH 1902 or 1012.	*February, January (short)*
MATH 1003 Integral Calculus and Modelling	3	A) HSC 4-unit Mathematics or MATH 1001. N) May not be counted with MATH 1903 or 1013.	*July, January (short)*
MATH 1004 Discrete Mathematics	3	A) HSC 3-unit Mathematics. N) May not be counted with MATH 1904.	*July*
MATH 1005 Statistics	3	A) HSC 2-unit Mathematics. N) May not be counted with MATH 1905 or 1015.	*July, January (short)*
MATH 1011 Life Sciences Calculus	3	A) HSC 2-unit Mathematics. N) May not be counted with MATH 1901 or 1001. May not be counted by students enrolled in the BSc/BCom combined award course.	*February*
MATH 1012 Life Sciences Algebra	3	A) HSC 2-unit Mathematics. N) May not be counted with MATH 1002 or 1902. May not be counted by students enrolled in the BSc/BCom combined award course.	*July*
MATH 1013 Differential and Difference Equations	3	A) HSC 2-unit Mathematics. N) May not be counted with MATH 1003 or 1903. May not be counted by students enrolled in the BSc/BCom combined award course.	*July*
MATH 1015 Life Science Statistics	3	A) HSC 2-unit Mathematics. N) May not be counted with MATH 1905 or 1005. May not be counted by students enrolled in the BSc/BCom combined award course.	*February, January (short)*
MATH 1901 Differential Calculus (Advanced)	3	A) HSC 4-unit Mathematics or top decile 3-unit Mathematics. N) May not be counted with MATH 1001 or 1011.	*February*
MATH 1902 Linear Algebra (Advanced)	3	A) HSC 4-unit Mathematics or top decile 3-unit Mathematics. N) May not be counted with MATH 1002 or 1012.	*February*

Table IV: Bachelor of Medical Science - continued

Unit of study	Credit points	A) Assumed Knowledge Q) Qualifying P) Prerequisite C) Corequisite N) Prohibition	Offered
MATH 1903 Integral Calculus and Modelling Advanced	3	A) HSC 4-unit Mathematics or Credit in (MATH 1901 or MATH 1001). N) May not be counted with MATH 1003 or 1013.	*July*
MATH 1904 Discrete Mathematics (Advanced)	3	A) HSC 4-unit Mathematics or top decile 3-unit Mathematics. N) May not be counted with MATH 1004.	*July*
MATH 1905 Statistics (Advanced)	3	A) HSC 3-unit Mathematics (50 percentile). N) May not be counted with MATH 1005 or 1015.	*July*
MATH 1906 Mathematics (Special Studies Program) A	3	Q) UAI of at least 98.5 and at least 95% in 4-Unit Mathematics (or equivalent). Entry is by invitation. N) May not be counted with MATH 1001 or 1011 or 1901.	*February*
MATH 1907 Mathematics (Special Studies Program) B	3	Q) Distinction in MATH1906 or by invitation. N) May not be counted with MATH 1003 or 1013 or 1903.	*July*
Physics			
PHYS **1001** Physics 1 (Regular)	6	A) HSC Physics or HSC 4-unit Science. C) Recommended concurrent units of study: MATH 1001 and 1002 or 1901 and 1902. N) May not be counted with PHYS 1002 or 1901.	*February*
PHYS 1002 Physics 1 (Fundamentals)	6	A) No assumed knowledge of Physics. C) Recommended concurrent unit of study: MATH 1001 and 1002 or 1901 and 1902. N) May not be counted with PHYS 1001 or 1901.	*February*
PHYS 1003 Physics 1 (Technological)	6	A) HSC 2-unit Physics or HSC 4-unit Science or PHYS 1001 or 1002 or 1901 or equivalent. C) For Science students: Recommended concurrent units MATH 1003 and 1005 or 1903 and 1905. N) For Science students: May not be counted with PHYS 1004 or 1902.	*February, July*
PHYS 1004 Physics 1 (Environmental & Life Science)	6	A) HSC 2-unit Physics or HSC 4-unit Science or PHYS 1001 or 1002 or 1901 or equivalent. C) Recommended concurrent unit of study: MATH 1003 and 1005 or 1903 and 1905. N) May not be counted with PHYS1003 or 1902.	*July*
PHYS 1901 Physics 1A (Advanced)	6	P) UAI at least that for acceptance into BSc (Advanced) program or at least 90 in HSC 2-unit Physics or a least 180 in HSC 4-unit Science or Distinction or better in PHYS 1003. C) Recommended concurrent unit of study: MATH 1001 and 1002 or 1901 and 1902. N) May not be counted with PHYS 1001 or 1002.	*February*
PHYS 1902 Physics IB (Advanced)	6	P) UAI at least that for acceptance into BSc(Advanced) program, or at least 90 in HSC 2-unit Physics or at least 180 in HSC 4-unit Science or PHYS 1901 or Distinction or better in PHYS 1001. C) Recommended concurrent unit of study: MATH 1003 and 1005 or 1903 and 1905. N) May not be counted with PHYS 1003 or 1004.	*July*
Psychology			
PSYC 1001 Psychology 1001	6		*February*
PSYC 1002 Psychology 1002	6		*July*

B. Intermediate units of study

■ Core units of study

BMED 2501 Cells and Cell Communication	6	Q) 12 credit points of Junior Mathematics, 12 credit points of Junior Chemistry, 12 credit points of Junior Physics, and 12 credit points of Junior Biology or 12 credit points of Junior Computer Science or 12 credit points of Junior Psychology. C) BMED 2502 and BMED 2503.	*February*
BMED 2502 Genes and Genetic Engineering	6	Q) 12 credit points of Junior Mathematics, 12 credit points of Junior Chemistry, 12 credit points of Junior Physics, and 12 credit points of Junior Biology or 12 credit points of Junior Computer Science or 12 credit points of Junior Psychology. C) BMED 2501 and BMED 2503.	*February*

Table IV: Bachelor of Medical Science - continued

Unit of study	Credit points	A) Assumed Knowledge Q) Qualifying P) Prerequisite C) Corequisite N) Prohibition	Offered
BMED 2503 Regulation of the Internal Environment	8	Q) 12 credit points of Junior Mathematics, 12 credit points of Junior Chemistry, 12 credit points of Junior Physics, and 12 credit points of Junior Biology or 12 credit points of Junior Computer Science or 12 credit points of Junior Psychology. C) BMED 2501 and BMED 2502.	*February*
BMED 2504 Digestion, Absorption and Metabolism	6	A) BMED 2501, BMED 2502 and BMED 2503. Q) 12 credit points of Junior Mathematics, 12 credit points of Junior Chemistry, 12 credit points of Junior Physics, and 12 credit points of Junior Biology or 12 credit points of Junior Computer Science or 12 credit points of Junior Psychology. C) BMED 2505 and BMED 2506.	*July*
BMED 2505 Interaction with External Environment	6	A) BMED 2501, BMED 2502 and BMED 2503. Q) 12 credit points of Junior Mathematics, 12 credit points of Junior Chemistry, 12 credit points of Junior Physics, and 12 credit points of Junior Biology or 12 credit points of Junior Computer Science or 12 credit points of Junior Psychology. C) BMED 2504 and BMED 2506.	*July*
BMED 2506 Microbes and Body Defence Systems	8	A) BMED 2501, BMED 2502 and BMED 2503. Q) 12 credit points of Junior Mathematics, 12 credit points of Junior Chemistry, 12 credit points of Junior Physics, and 12 credit points of Junior Biology or 12 credit points of Junior Computer Science or 12 credit points of Junior Psychology. C) BMED 2504 and BMED 2505.	*July*

■ Elective units of study

Refer also to Table I: BSc

Chemistry			
CHEM 2311 Chemistry 2 (Biological Sciences) Theory	4	P) 12 credit points of Junior Chemistry. C) CHEM 2312 (for Molecular Biotechnology degree program). N) May not be counted with CHEM 2001 or 2101 or 2301 or 2901 or 2903.	*February*
CHEM 2312 Chemistry 2 (Biological Sciences) Prac	4	P) 12 credit points of Junior Chemistry. C) CHEM 2311. N) May not be counted with CHEM 2001 or 2101 or 2301 or 2901 or 2903.	*February, July*
Physics			
PHYS 2105 Physics for Medical Sciences	4	P) 12 credit points of Junior Physics, excluding PHYS 1500 & 1600.	*February*

C. Senior units of study

■ Senior core units of Study - February semester

BMED 3001 Human Life Sciences (Cell & Molecular)	4	Q) BMED 2101 and 2102. P) PCOL 2001 and 2002, and BCHM (2001 or 2101 or 2901) and BCHM (2002 or 2102 or 2902).	*February*
BMED 3002 Microbiology and Immunology	8	Q) BMED 2101 and 2102. P) PCOL 2001 and 2002, and BCHM (2001 or 2101 or 2901) and BCHM 2002 or 2102 or 2902).	*February*

■ Elective units of study - February semester

Anatomy and Histology			
ANAT 3001 Microscopy and Histochemistry	12	Q) ANAT 2001.	*February*
Biochemistry			
BCHM 3001 Mol Biology and Structural Biochemistry	12	Q) BCHM 2001/2901 or MBLG 2001 or BCHM 2002/2902. N) May not be counted with BCHM 3901.	*February*
BCHM 3901 Mol Biology and Structural Biochem (Adv)	12	Q) BCHM 2901 or 2902 or Distinction in BCHM 2001 or 2002 or MBLG 2001. Entry into this unit requires departmental approval. N) May not be counted with BCHM 3001.	*February*
Biology			
BIOL 3103 Mol Genetics and Recombinant DNA Tech	12	Q) 16 credit points of Intermediate Biology including BIOL 2005 or 2905 (For BMedSc students BIOL 2005 or 2905). N) May not be counted with BIOL 3903.	*February*

Table IV: Bachelor of Medical Science - continued

Unit of study	Credit points	A) Assumed Knowledge Q) Qualifying P) Prerequisite C) Corequisite N) Prohibition	Offered
BIOL 3903 Mol Gen and Recombinant Dna Tech (Adv)	12	Q) Distinction average in 16 credit points of Intermediate Biology including BIOL 2005 or 2905. (For BMedSc students: Distinction in BIOL 2005 or 2905.) These requirements may be varied and students with lower averages should consult the Unit Executive Officer. N) May not be counted with BIOL 3103.	*February*
Cell Pathology			
CPAT 3001 Cell Pathology A	12	P) ANAT 2002 or BCHM 2002 or 2902, or BIOL 2005 or 2006 or 2905 or 2906, or both PCOL 2001 and 2002, or PHSI 2002 (For BMedSc, BMED 2101 and 2102). *NB: Students must contact the Department before enrolling. Only a small number of students can be accommodated in the laboratory facilities.*	*February*
History and Philosophy of Science			
HPSC 3102 History of the Biomedical Sciences	12	Q) HPSC 2001 and 2002.	*February, July*
Pharmacology			
PCOL 3001 Molecular Pharmacology and Toxicology	12	P) PCOL 2001 and 2002.	*February*
PCOL 3901 Molecular Pharmacology & Toxicology Adv	12	Q) Distinction average in PCOL 2001 and 2002. Entry into this unit requires departmental approval. N) May not be counted with PCOL 3001.	*February*
Physiology			
PHSI 3001 Neuroscience	12	Q) PHSI 2101 or PHSI 2001 or ANAT 2003 or BMED 2101 and 2102. P) BCHM (2001 or 2101 or 2901) and (2002 or 2102 or 2901) plus 8 or more credit points from any Intermediate units of study in Anatomy and Histology, Biology, Chemistry, Mathematics, Microbiology, Pharmacology, Physics, Physiology, Psychology or Statistics. Students in the Faculty of Engineering who have completed Physiology 2001 and 2002 plus at least one other Intermediate unit of study similar to the prerequisites may also be permitted to enrol. *NB; A minimum of 8 credit points of Intermediate Physiology is recommended.*	*February*
PHSI 3901 Neuroscience (Advanced)	12	Q) PHSI 2101 or PHSI 2001 or ANAT 2003 or BMED 2101 and 2102. P) BCHM (2001 or 2101 or 2901) and (2002 or 2102 or 2901) plus 8 or more credit points from any Intermediate units of study in Anatomy and Histology, Biology, Chemistry, Mathematics, Microbiology, Pharmacology, Physics, Physiology, Psychology or Statistics. *NB: A minimum of 8 credit points of Intermediate Physiology is recommended. Available to selected students only.*	*February*
■ Elective units of study –July semester			
BMED 3003 Immunology	12	Q) BMED 2101 and 2102. P) PCOL 2001 and 2002, and BCHM (2001 or 2101 or 2901) and BCHM (2002 or 2102 or 2902). N) May not be counted with IMMU 3002.	*July*
BMED 3004 Infectious Diseases	12	Q) BMED 2101 and 2102. P) PCOL 2001 and 2002, and BCHM (2001 or 2101 or 2901) or (2002 or 2102 or 2902).	*July*
Anatomy and Histology			
ANAT 3002 Cells and Development	12	A) (i) an understanding of the basic structure of the vertebrates; (ii) an understanding of elementary biochemistry and genetics. Q) ANAT 2001. N) May not be counted with ANAT 3003.	*July*
ANAT 3005 Topographical Anatomy	12	Q) BMED 2101 and 2102.	*July*
Biochemistry			
BCHM 3002 Cellular and Medical Biochemistry	12	Q) BCHM 2001/2901 or MBLG 2001 or BCHM 2002/2902. N) May not be counted with BCHM 3902/3904.	*July*
BCHM 3902 Cellular and Medical Biochemistry (Adv)	12	Q) BCHM 2901 or 2902 or Distinction in BCHM 2001 or 2002 or MBLG 2001. Entry into this unit requires departmental approval. N) May not be counted with BCHM 3002/3904.	*July*

Table IV: Bachelor of Medical Science - continued

Unit of study	Credit points	A) Assumed Knowledge Q) Qualifying P) Prerequisite C) Corequisite N) Prohibition	Offered
Biology			
BIOL 3025 Evolutionary Genetics & Animal Behaviour	6	Q) 16 credit points of Intermediate Biology. For BMedSc students BMED 2502. N) May not be counted with BIOL3925 or 3928.	*July*
BIOL 3026 Developmental Genetics	6	Q) 16 credit points of Intermediate Biology including BIOL 2005 or 2905; For BMedSc students BMED 2502. N) May not be counted with BIOL 3926 or 3929.	*July*
BIOL 3925 Evolutionary Gen. & Animal Behaviour Adv	6	Q) Distinction average in 16 credit points of Intermediate Biology; for BMedSc students Distinction in BMED 2502; these requirements may vary and students with lower averages should consult the Unit Executive Officer. N) May not be counted with BIOL 3025 or 3928.	*July*
BIOL 3926 Developmental Genetics . (Advanced)	6	Q) Distinction average in 16 credit points of Intermediate Biology including BIOL 2005 or 2905; For BMedSc students Distinction in BMED 2502. These requirements may be varied and students with lower averages should contavt the Unit Executive Officer. N) May not be counted with BIOL 3026 or 3929.	*July*
Cell Pathology			
CPAT 3101 Pathological Basis of Human Disease	12	Q) ANAT2001; orBCHM2001 or 2002 or 2101 or 2102 or 2901 or 2902; or BIOL 2001 or 2002 or 2005 or 2006 or 2101 or 2102 or 2105 or 2106 or 2901 or 2902 or 2905 or 2906; or HPSC 2001 or 2002; or MICR 2001 or 2003 or 2901; or PCOL 2001; or PHSI 2001 (For BMedSc: BMED 2101 and 2102).	*July*
History and Philosophy of Science			
HPSC 3102 History of the Biomedical Sciences	12	Q) HPSC 2001 and 2002.	*February, July*
Microbiology			
MICR 3003 Molecular Biology of Pathogens	12	Q) BMED 3002. N) May not be counted with MICR 3903.	*July*
MICR 3903 Molecular Biology of Pathogens Advanced	12	Q) Credit or better in BMED 3002. N) May not be counted with MICR 3003.	*July*
Pharmacology			
PCOL 3002 Neuro- and Cardiovascular Pharmacology	12	P) PCOL 2001 and 2002.	*July*
PCOL 3902 Neuro & Cardiovascular Pharmacology Adv	12	Q) Distinction average in PCOL 2001 and 2002. Entry into this unit requires departmental permission. N) May not be counted with PCOL 3002.	*July*
Physiology			
PHSI 3002 Neuroscience - Cellular and Integrative	12	P) BCHM (2001 and 2002) or (2101 and 2102) and an additional 8 or more credit points from any Intermediate unit/s of study in the following subjects: Anatomy and Histology, Biology, Chemistry, Computer Science, Mathematics, Microbiology, Pharmacology, Physics, Physiology, Psychology, or Statistics. Students in the Faculty of Engineering who have completed Physiology 2001 and 2002 plus at least one other Intermediate unit of study similar to the prerequisites may also be permitted to enrol.	*July*
PHSI 3003 Heart and Circulation	12	Q) PHSI 2102 or 2002 or BMED 2101 and 2102. P) BCHM (2001 or 2101 or 2901) and (2002 or 2102 or 2902) plus 8 or more credit points from any Intermediate units of study in Anatomy and Histology, Biology, Chemistry, Mathematics, Microbiology, Pharmacology, Physics, Physiology, Psychology or Statistics. Students in the Faculty of Engineering who have completed Physiology 2001 and 2002 plus at least one other Intermediate unit of study similar to the prerequisites may also be permitted to enrol. *NB: A minimum of 8 credit points of Intermediate Physiology is recommended.*	*July*
PHSI 3902 Neuroscience- Cellular & Integrative Adv	12	P) PHSI 3001. *NB: Available to selected students.*	*July*
PHSI 3903 Heart and Circulation (Advanced)	12	Q) PHSI 2102 or 2002 or BMED 2101 and 2102. P) BCHM (2001 or 2101 or 2901) and (2002 or 2102 or 2902) plus 8 or more credit points from any Intermediate units of study in Anatomy and Histology, Biology, Chemistry, Mathematics, Microbiology, Pharmacology, Physics, Physiology, Psychology or Statistics. *NB: A minimum of 8 credit points of Intermediate Physiology is recommended. Available to selected students.*	*July*

Bachelor of Medical Science units of study

Bachelor of Medical Science Junior units of study

All qualifying, pre- and corequisite units of study, details of staff, examinations, units of study delivery and descriptions are as described under the appropriate Department or School entry for the BSc.

- BIOL 1001 Concepts in Biology, 6 credit points
- BIOL 1002 Living Systems, 6 credit points
- BIOL 1003 Human Biology, 6 credit points
- BIOL 1901 Concepts in Biology (Advanced), 6 credit points
- BIOL 1902 Living Systems (Advanced), 6 credit points
- BIOL 1903 Human Biology (Advanced), 6 credit points
- CHEM 1101 Chemistry IA, 6 credit points
- CHEM 1102 Chemistry IB, 6 credit points
- CHEM 1901 Chemistry IA (Advanced), 6 credit points
- CHEM 1902 Chemistry IB (Advanced), 6 credit points
- CHEM 1903 Chemistry IA (Special Studies Program), 6 credit points
- CHEM 1904 Chemistry IB (Special Studies Program), 6 credit points
- CHEM 1908 Chemistry 1 Life Sciences A (Advanced), 6 credit points (preferred option)
- CHEM 1909 Chemistry 1 Life Sciences B Molecular (Advanced), 6 credit points (preferred option)
- COMP 1001 Introductory Programming, 6 credit points
- COMP 1002 Introductory Computer Science, 6 credit points
- COMP 1901 Introductory Programming (Advanced), 6 credit points
- COMP 1902 Introductory Computer Science (Advanced), 6 credit points
- MATH 1001 Differential Calculus, 3 credit points
- MATH 1002 Linear Algebra, 3 credit points
- MATH 1003 Integral Calculus and Modelling, 3 credit points
- MATH 1004 Discrete Mathematics, 3 credit points
- MATH 1005 Statistics, 3 credit points
- MATH 1011 Life Sciences Calculus, 3 credit points
- MATH 1012 Life Sciences Algebra, 3 credit points
- MATH 1013 Life Sciences Difference and Differential Equations, 3 credit points
- MATH 1015 Life Sciences Statistics, 3 credit points
- MATH 1901 Differential Calculus (Advanced), 3 credit points
- MATH 1902 Linear Algebra (Advanced), 3 credit points
- MATH 1903 Integral Calculus and Modelling (Advanced), 3 credit points
- MATH 1904 Discrete Mathematics (Advanced), 3 credit points
- MATH 1905 Statistics (Advanced), 3 credit points
- MATH 1906 Mathematics (Special Studies Program) A, 3 credit points
- MATH 1907 Mathematics (Special Studies Program) B, 3 credit points
- PHYS 1001 Physics (Regular), 6 credit points
- PHYS 1002 Physics (Fundamentals), 6 credit points
- PHYS 1003 Physics (Technological), 6 credit points
- PHYS 1004 Physics (Environmental and Life Sciences), 6 credit points
- PHYS 1901 Physics (Advanced) A, 6 credit points
- PHYS 1902 Physics (Advanced) B, 6 credit points
- PSYC 1001 Psychology 1001, 6 credit points
- PSYC 1002 Psychology 1002, 6 credit points

CHEM 1908 Chemistry 1 Life Sciences A (Advanced)

6 credit points

Offered: February. **Prerequisite:** UAI of at least 92.5 and at least 75% in HSC 2-unit Chemistry or equivalent; by invitation. **Corequisite:** (Recommended concurrent unit of study) Preferred - MATH 1001 and 1002 or 1901 and 1902; otherwise MATH 1011 and 1012. **Prohibition:** May not be counted with CHEM 1002 or 1102 or 1902 or 1904 or 1907. Classes: Total of 6hrs per week consisting on average of 3 lectures, 1 tutorial/discussion session and 2hrs of practical work. **Assessment:** A theory examination is held at the end of the semester. Students are advised at the beginning of the semester about other factors contributing to assessment in the unit of study.

Lectures (39 hr): A strong background in junior chemistry is essential for understanding molecular structures and processes. This unit of study provides the basis for understanding fundamental chemical processes and structures at an advanced level, with particular emphasis on how these apply to the life sciences. Topics to be covered include: atomic structure, chemical bonding and organic chemistry of functional groups with applications in life sciences.

Tutorials/Discussions (13 hr): These will provide aspects of problem solving relevant to the theory.

Practical: Practicals (30hr) These will be designed to develop practical skills based on the theory presented in the lectures.

Textbooks

A booklist is contained in the booklet Information for Students distributed at enrolment. Further information can be obtained from the School.

CHEM 1909 Chemistry 1 Life Sciences B Mol (Adv)

6 credit points

Offered: July. Prerequisite: CHEM 1907 or 1908 or equivalent. **Prohibition:** May not be counted with CHEM 1001 or 1101 or 1901 or 1903. Classes: Total of 6hrs per week consisting on average of 2 lectures, 1 tutorial/discussion session and 3hrs of practical work. Assessment: A theory examination is held at the end of the semester. Students are advised at the beginning of the semester about other factors contributing to assessment in the unit of study. Lectures (26 hr): A strong background in junior chemistry is essential for understanding molecular structures and processes. This unit of study provides the basis for understanding fundamental chemical processes and structures at an advanced level, with particular emphasis on how these apply to the life sciences. Topics to be covered include: chemical equilibria, solutions, acids and bases, ions in solution, redox reactions, colloids and surface chemistry, the biological periodic table, chemical kinetics and radiochemistry with applications to life sciences.

Tutorials/Discussions (13 hr): These will provide aspects of problem solving relevant to the unit of study.

Practical: (30 hr) These will be designed to develop practical skills based on the theory presented in the lectures.

Textbooks

A booklist is contained in the booklet Information for Students distributed at enrolment. Further information can be obtained from the School.

Bachelor of Medical Science Intermediate Core Units of Study

BMED2501 Cells and Cell Communication

6 credit points

Hilary Lloyd (Pharmacology).

Offered: February. **Qualifying:** 12 credit points of Junior Mathematics, 12 credit points of Junior Chemistry, 12 credit points of Junior Physics, and 12 credit points of Junior Biology or 12 credit points of Junior Computer Science or 12 credit points of Junior Psychology. Corequisite: BMED 2502 and BMED 2503. Classes: Average 6 hrs/wk of lectures, tutorials and practicals. Assessment: One 3hr theory exam. Practical tests, reports and assignments.

A strong understanding of cellular structures and communication systems is essential for an appreciation of whole body function. This Unit of Study extends students' preexisting understanding of basic cell structure by focussing on organelle function, cell specialisation and tissue organisation in humans. By way of contrast, there is also discussion of the unique morphology of procaryotic organisms (bacteria and viruses). Students are then introduced to the ways in which biochemical building blocks are arranged to form macromolecular subcellular structures (e.g., phospholipids into cell membranes, and amino acids into proteins). The role of enzymes in the catalysis of cellular reactions and the pharmacological strategies employed to exploit our knowledge of these mechanisms is then discussed. The various modes of communication between cells are then cov-

ered, with extended treatment of receptor-effector signal transduction, intracellular signaling cascades, cell to cell signaling and pharmacological intervention in these processes.

Practical classes not only complement the lecture material but also introduce students to a wide range of technical skills: including biomedical bench skills, tissue processing, bacterial cultivation, manipulation of 3D protein graphics (including drug-receptor interactions), protein purification, and enzyme assay. In addition, the sessions are also designed to give students generic skills such as record keeping, data collection and presentation, protocol planning, spreadsheet design and written communication.

BMED 2502 Genes and Genetic Engineering

6 credit points

Dr Joel Mackay (Biochemistry)

Offered: February. **Qualifying:** 12 credit points of Junior Mathematics, 12 credit points of Junior Chemistry, 12 credit points of Junior Physics, and 12 credit points of Junior Biology or 12 credit points of Junior Computer Science or 12 credit points of Junior Psychology. **Corequisite:** BMED 2501 and BMED 2503. **Classes:** Average 6 hrs/wk of lectures, tutorials and practicals. **Assessment:** One 3hr theory exam. Practical tests, reports and assignments.

This Unit of Study is designed to teach students how genetic information is stored, transmitted and expressed. Students are also introduced to DNA technologies such as cloning and gene therapy as well as receiving an overview of cellular development and embryology. Specifically, the Unit of Study covers the structure of DNA at both the molecular and chromosomal level, with extrapolation to the packaging, replication and transfer of genetic material. The way in which the message encoded in DNA is transcribed and translated into proteins is then outlined, with particular emphasis on eucaryotic systems and on the control of the expression process. The principles of cloning, gene synthesis, protein engineering and other aspects of modem DNA technology are then described, enabling an appreciation of the application of transgenics, gene therapy and the use of DNA technology in drug design. Students then study the linkage and mapping of genes including reference to DNA fingerprinting and the human genome project. The Unit of Study then gives an introduction into how gene expression is regulated during development, and how the cell cycle is controlled to coordinate programmed events such as differentiation and cell death. This allows discussion of the development of the human embryo and the consequences and treatment of abnormal tissue growth (cancer).

The technical skills taught in the practical classes include the use of restriction enzymes, the separation of DNA molecules using electrophoresis, the inspection of chromosomes, linkage mapping, gene transfer and the measurement of gene expression. In addition to nurturing the skills involved in the design and execution of experiments, the practical sessions will formally teach students report writing skills and will give students practice at articulating feedback to their peers.

BMED 2503 Regulation of the Internal Environment

8 credit points

Francoise Janod-Groves (Physiology).

Offered: February. **Qualifying:** 12 credit points of Junior Mathematics, 12 credit points of Junior Chemistry, 12 credit points of Junior Physics, and 12 credit points of Junior Biology or 12 credit points of Junior Computer Science or 12 credit points of Junior Psychology. **Corequisite:** BMED 2501 and BMED 2502. **Classes:** Average 8 hrs/wk of lectures, tutorials and practicals. **Assessment:** Two 2 hr theory exams, practical tests, reports and assignments.

The maintenance of constant conditions in the human body is dependent on thousands of intricate control mechanisms. This Unit of Study examines many of those homeostatic processes with specific reference to major apparatus such as the respiratory, cardiovascular, renal, endocrine and nervous systems. Special reference is made throughout the Unit of Study to the effect of drugs on homeostatic components. For example, as part of the discussion on the structure and function of the heart and blood vessels, students are also taught about the effect of drugs on the cardiac output, blood flow and blood pressure. Examples of how homeostatic mechanisms are perturbed in disease are also emphasised (e.g. with reference to cardiovascular pathology). Discussion of the respiratory system likewise embraces the structure of the respiratory organs, description of the mechanism of the transport of gases to and from cells and the pharmacotherapy of respiratory disorders (e.g. asthma). Similar treatment of the renal system involves anatomical and histological investigation of kidney structure and a physiological description of kidney function with reverence to the regulation of pH, P02 and temperature of the extracellular fluid. After this, the action of drags (including diuretic drugs) on the kidney is discussed. Examples of more long-term regulation is provided by consideration of the hormonal control of pregnancy, and the foetal-new-born transition.

Practical classes are designed to nurture the same generic attributes taught in BMED 2501 and BMED 2502 but, in addition, students are introduced to a wide range of anatomical and physiological technical skills. Specifically, students will investigate the structure and function of endocrine organs, the heart and blood vessels, the components of the respiratory system and the kidney - all at the cellular and organ level. Students will also conduct experiments (often on themselves) which show how nerve impulses are transmitted, how heart rate and blood pressure are controlled, how breathing is regulated and how urine output is modulated in response to both physiological and pharmacological stimuli. Similarly, study of the pathology of the homeostatic organs will be complemented using tissue samples and slides.

BMED 2504 Digestion, Absorption and Metabolism

6 credit points

Margot Day (Physiology).

Offered: July. **Qualifying: 1**2 credit points of Junior Mathematics, 12 credit points of Junior Chemistry, 12 credit points of Junior Physics, and 12 credit points of Junior Biology or 12 credit points of Junior Computer Science or 12 credit points of Junior Psychology. **Corequisite:** BMED 2505 and BMED 2506. **Assumed knowledge:** BMED 2501, BMED 2502 and BMED 2503. **Classes:** Average 6 hrs/wk of lectures, tutorials and practicals. **Assessment:** One 3hr theory exam. Practical tests, reports and assignments.

This Unit of Study gives an introduction to the structures used to digest and absorb fuels, at both the anatomical and histological level. This is then followed by discussion of the utilisation and fate of absorbed nutrients. After an overview of the alimentary tract and associated organs, the detailed anatomy of the oral cavity, oesophagus, stomach, intestines, liver, etc is considered. This is complemented by description of the specialised cell types in the digestive system, discussion of the transport mechanisms employed to absorb nutrients, and consideration of the control systems used to regulate activity of the digestive process. The fate of the macronutrients (carbohydrate, fat and protein) is then considered by reference to their uptake, disposal and reassembly into storage fuels and cellular structures. The biochemical pathways involved in the extraction of energy from the macronutrient fuels is then covered, with particular emphasis on the whole body integration and regulation of these metabolic processes. This enables students to appreciate the extent of organ coordination in response to circumstances such as starvation, obesity, exercise and diabetes. It also provides a solid background for the understanding of pharmacological intervention in these conditions. The pharmacokinetic angle is explored further with discussion of the metabolism and absorption of drugs including the detoxification and excretion of xenobiotic compounds. Intestinal microflora, both beneficial and pathogenic are also discussed in this Unit of Study.

Practical classes give students extensive experience with inspection of the digestive system at both the cellular and gross anatomical level. In addition, students a taught radioisotope handling and biochemical assay design skills in concert with sessions designed to nurture oral presentation skills, hypothesis testing, data analysis, troubleshooting, instruction writing and feedback skills.

BMED 2505 Interaction with External Environment

6 credit points

John Mitrofanis (Anatomy/Histology).

Offered: July. **Qualifying: 1**2 credit points of Junior Mathematics, 12 credit points of Junior Chemistry, 12 credit points of Junior Physics, and 12 credit points of Junior Biology or 12 credit points of Junior Computer Science or 12 credit points of Junior Psychology. **Corequisite:** BMED 2504 and BMED 2506. **Assumed knowledge:** BMED 2501, BMED 2502 and BMED 2503. **Classes:** Average 6 hrs/wk of lectures, tutorials and practicals. **Assessment:** One 3hr theory exam. Practical tests, reports and assignments.

This Unit of Study how neural and motor systems are adapted to sense and respond to changes in the external environment. After consideration of the basic anatomical organisation of the nervous and sensory systems, the way in which nerve signals are integrated and coordinated in response to external stimuli are covered in more detail. This is complemented by discussion of the effects of drugs on the nervous system, particularly addictive and psychoactive compounds, with special reference to pain and analgesics. The structure and function of skeletal muscle is covered at both a histological and anatomical level and has been designed to integrate with information regarding the skeleton and movement. After discussion of the molecular mechanism of muscle contraction, students extrapolate to consider the regulation of fuel selection during exercise and the cause of fatigue. This leads onto discussion of performance enhancing drugs, and to an appreciation of how toxins and infections can perturb the normal neuromuscular coordination. Thus pharmacological and pathological considerations, such as the use of poisoned arrows and muscle paralysis, prion and tetanus infection, are studied in concert with relevant physiological and biochemical concepts.

In practical classes, students perform experiments (often on themselves) to illustrate the functioning of the senses and motor control and coordination. In addition, students extend their anatomical expertise by examining the structure and function of the nervous system and the skeleton (especially the vertebral column, the thorax and the limbs). Practical sessions also include computer simulations in synaptic transmission, the detection of opiods and the isolation and identification of tetanus bacteria.

BMED 2506 **Microbes and Body Defence Systems**

8 credit points

Helen Agus (Microbiology).

Offered: July. **Qualifying:** 12 credit points of Junior Mathematics, 12 credit points of Junior Chemistry, 12 credit points of Junior Physics, and 12 credit points of Junior Biology or 12 credit points of Junior Computer Science or 12 credit points of Junior Psychology. **Corequisite:** BMED 2504 and BMED 2505. **Assumed knowledge:** BMED 2501, BMED 2502 and BMED 2503. **Classes:** Average 8 hrs/wk of lectures, tutorials and practicals. **Assessment:** Two 2 hr theory exams, practical tests, reports and assignments.

For a full understanding of human defence systems, it is necessary to have an appreciation of the range of pathogens and injuries with which the body must cope. Therefore this Unit of Study starts with a description of the structure and function of pathogenic microorganisms (including bacteria, fungi, protists, and viruses, etc). The impact of bacteria and viruses on individuals and society is taught with reference to specific infectious diseases (e.g., influenza, polio, herpes, etc) and this leads into an introduction to epidemiology. Included in discussion of the way in which these organisms cause and transmit disease is a consideration of how antibiotics and anti-viral drugs work and how microbes can become drug resistant. The response of the body to pathogen invasion is studied by discussion of both molecular and cellular immune responses. In particular this gives students an appreciation of the structure, production and diversity of antibodies, the processing of antigens, operation of the complement system and recognition and destruction of invading cells. This allows students to appreciate the basis of derangements of the immune system and the mechanism of action of immunomodulatory drugs. Sections on wound healing, clotting and inflammation cover the response to physical damage and mis is complemented by discussion of the pharmacological basis of anti-inflammatory agents and anti-coagulants.

Practical classes allow students to obtain experience in a range of classical and molecular virological, bacteriological and immunological techniques. Also included are integrated sessions in which hospital microbiologists guide students though clinical case studies. In addition, the practical sessions draw widely on, and nurture, the generic skills taught in preceding Units of Study.

Bachelor of Medical Science Intermediate Elective units of study

The second year of the Bachelor of Medical Sciences consists of 20 credit points per semester of core units of study, and 4 credit points per semester of electives.

Elective units may be chosen from the following, or from any other unit of study offered in Table 1, or at the University, subject to the normal completion of prerequisites or approval of the relevant teaching department. The general restriction that the content should not overlap with the core units applies, and a list of units specifically excluded as electives follows below.

When selecting elective units students should take care to ensure that they satisfy the degree requirements, as detailed in Chapter 5.

CHEM 2311 Chemistry 2 (Biological Sciences) Theory

4 credit points

Dr Robert Baker

Offered: February. **Prerequisite:** 12 credit points of Junior Chemistry. Corequisite: CHEM 2312 (for Molecular Biotechnology degree program). Prohibition: May not be counted with CHEM 2001 or 2101 or 2301 or 2901 or 2903. Classes: 4 lec/wk. **Assessment:** One 3 hr exam.

This unit of study aims to give students an understanding of the chemistry underlying biological systems. Lectures will cover the mechanisms of organic chemical reactions and their application to biological systems (17 lectures), the molecular basis of spectroscopic techniques used in biological chemistry (12 lectures), analytical chemistry of biological systems (10 lectures), biopolymers and biocolloids (8 lectures) and topics from inorganic chemistry of relevance to biological systems (metalloproteins, biomineralisation, etc.) (7 lectures).

CHEM 2312 Chemistry 2 (Biological Sciences) Prac

4 credit points

Dr Robert Baker

Offered: February, July. **Prerequisite:** 12 credit points of Junior Chemistry. **Corequisite:** CHEM 2311. **Prohibition:** May not be counted with CHEM 2001 or 2101 or 2301 or 2901 or 2903. **Classes:** 1x4 hour practical/week. **Assessment:** Practical reports.

This unit of study aims to assist students in developing the knowledge and skills required to carry out practical work on the chemistry underlying biological systems. The course will cover experimental investigations of chemical kinetics, organic and inorganic chemical analysis, biopolymer characterisation, and preparation and characterisation of a metal-based anti-inflammatory drug.

PHYS2105 **Physics for Medical Sciences**

4 credit points

Offered: February. **Prerequisite:** 12 credit points of Junior Physics, excluding PHYS 1500 & 1600. **Classes:** 2 lec, 1 tut & 1 prac/wk. **Assessment:** One 2 hr exam, assignments, prac work and report.

This unit of study is primarily intended for students in the Bachelor of Medical Science program, but is also available in other degree programs. It covers a number of physics topics relevant to medical science: sound and ultrasound, light and optics, fluid flow, electrical properties of the cells and the nervous system, heat and temperature. The topics are presented in the context of their relevance and applications to medical science. In addition to lectures, on alternate weeks there are two hour workshop tutorials and laboratory sessions involving both practical and simulation.

Intermediate units not available as Medical Science electives

Some units of study may not be taken as electives. These include units offered by the departments of Anatomy & Histology, Biological Sciences, Biochemistry, Immunology, Infectious diseases, Microbiology, Pathology, Pharmacology

and Physiology and any other units deemed to be mutually exclusive with the core units. Excluded Intermediate units from Table 1 of the Bachelor of Science are:

Anatomy and Histology
- ANAT 2001 Principles of Histology
- ANAT 2002 Comparative Primate Anatomy
- ANAT 2003 Concepts in Neuroanatomy
- ANAT 2004 Principles of Development

Biochemistry
- BCHM 2002 Molecules, Metabolism and Cells
- BCHM 2102 Molecules, Metabolism and Cells Theory
- BCHM 2902 Molecules, Metabolism and Cells (Advanced)

Biological Sciences
- BIOL 2006 Cell Biology
- BIOL 2906 Cell Biology (Advanced)
- BIOL 2106 Cell Biology - Theory

Immunology
- IMMU 2001 Introductory Immunology

Microbiology
- MICR 2001 Introductory Microbiology
- MICR 2002 Applied Microbiology
- MICR 2003 Theoretical Microbiology A
- MICR 2004 Theoretical Microbiology B
- MICR 2901 Introductory Microbiology (Advanced)
- MICR 2902 Applied Microbiology (Advanced)

Molecular Biology and Genetics
- MBLG 2001 Molecular Biology & Genetics A
- MBLG 2101 Molecular Biology & Genetics A (Theory)
- MBLG 2002 Molecular Biology & Genetics B
- MBLG 2102 Molecular Biology & Genetics B (Theory)

Pharmacology
- PCOL 2001 Pharmacology Fundamentals
- PCOL 2002 Pharmacology Drugs and People

Physiology
- PHSI 2001 Introductory Physiology A
- PHSI 2002 Introductory Physiology B
- PHSI 2101 Physiology A
- PHSI 2102 Physiology B

Bachelor of Medical Science Senior Core units of study (February)

The following are the core Senior units of study for the Bachelor of Medical Science:
- BMED 3001 Human Life Sciences, 4 credit points
- BMED 3002 Microbiology and Immunology, 8 credit points

BMED 3001 Human Life Sciences (Cell & Molecular)

4 credit points

Dr Phillips

Offered: February. **Qualifying:** BMED 2101 and 2102. **Prerequisite:** PCOL 2001 and 2002, and BCHM (2001 or 2101 or 2901) and BCHM (2002 or 2102 or 2902). **Classes:** 1-2 lec **& 2** tut/wk. **Assessment:** Tut assessment, 4 group presentations, 1 essay.

In this unit of study students will investigate five topics drawn from the most active areas of research in cellular physiology and biology. The intention of the unit of study is to teach students some of the basic principles of cellular function while giving them experience in extracting information from the scientific literature, summarising it and drawing conclusions from it. Emphasis is placed on the oral and written presentation by students of the results of their work. The unit of study makes extensive use of small-group teaching methods and problem-based learning with the lectures providing background information on the concepts and techniques dealt with in the small-group sessions.

Assessment is based on:

(1) performance in the small-group sessions,

(2) four oral group presentations one for each of the topics studied in the small-group sessions, and

(3) an essay on a subject related to the broad area of the unit of study.

The topics covered are as follows.

Membrane transport processes: The description of transport processes. The structural and functional properties of membrane transport proteins.

Cellular homeostatic mechanisms: The mechanisms by which cells control their composition and volume.

Signal-response coupling: The mechanisms by which cellular activity is controlled by events external to the cell. This includes receptor mechanisms, second messenger systems and the major types of cellular responses.

The cytoskeleton: The structure of the cytoskeleton and its role in cellular processes such as motility.

Cell-cell and cell-matrix interactions: The mechanisms by which cells adhere to each other and to their substrate and the influence of this on cellular behaviour.

Textbooks

Alberts, et al. Molecular Biology of the Cell. (3rd ed.)

BMED 3002 Microbiology and Immunology

8 credit points

Mrs Agus (Coordinator), Prof. Britton, Prof. Reeves, Dr New, Mrs Dalins, Dr Carter, Dr Briscoe

Offered: February. **Qualifying:** BMED 2101 and 2102. **Prerequisite:** PCOL 2001 and 2002, and BCHM (2001 or 2101 or 2901) and BCHM 2002 or 2102 or 2902). **Classes:** 3 lec & 5 prac/wk. **Assessment:** One 3hr exam, prac.

This core unit of study is taught by the Department of Microbiology with a contribution from the Immunology Unit of the Department of Medicine.

It is designed to provide a basic understanding of:

(1) micro-organisms and their role in human biology, and

(2) introductory immunology.

Introduction to techniques. Comparative structure and function of micro-organisms. Principles and practice of taxonomy and identification of bacteria. Survey of major groups of medically important bacteria. Strategies of pathogenic organisms; host defence mechanisms; common modes of transmission; epidemiology. Immunology: functioning of the immune system, basic immunological techniques. Virology: structure of viruses, mechanisms of replication, virus interactions.

Bachelor of Medical Science Senior Elective units of study (February)

Except for History and Philosophy of Science 3102, all qualifying, pre- and corequisite units of study, details of staff, examinations, unit of study delivery and descriptions are as described under the appropriate Department or School entry for the BSc.
- ANAT 3001 Microscopy and Histochemistry, 12 credit points
- BCHM 3001 Molecular Biology and Structural Biochemistry, 12 credit points
- BCHM 3901 Molecular Biology and Structural Biochemistry (Advanced), 12 credit points
- BIOL 3103 Molecular Genetics and Recombinant DNA Technology, 12 credit points
- BIOL 3903 Molecular Genetics and Recombinant DNA Technology (Advanced), 12 credit points
- CPAT 3001 Cell Pathology A, 12 credit points
- HPSC 3102 History of the Biomedical Sciences, 12 credit points
- PCOL 3001 Molecular Pharmacology and Toxicology, 12 credit points
- PCOL 3901 Molecular Pharmacology and Toxicology (Advanced), 12 credit points
- PHSI 3001 Neuroscience, 12 credit points

HPSC 3102 History of the Biomedical Sciences

12 credit points

Offered: February, July. **Qualifying:** HPSC 2001 and 2002. **Classes:** 4 lec, 4 tut & 4 prac/wk. **Assessment:** Tut assignment, one 3000w essay, project report, take-home exam.

An introduction to some of the major episodes in the social and scientific history of biological and medical science.

Bachelor of Medical Science Senior Elective units of study (July)

Except for Anatomy and Histology 3005, Immunology (BMED 3003), Infectious Diseases (BMED 3004) and Microbiology 3003), all qualifying, pre- and corequisite units of study, details of staff, examinations, unit of study delivery and descriptions are as described under the appropriate Department or School entry for the BSc.

- ANAT 3002 Cells and Development, 12 credit points
- ANAT 3005 Topographical Anatomy, 12 credit points
- BCHM 3002 Metabolic and Medical Biochemistry, 12 credit points
- BCHM 3902 Metabolic and Medical Biochemistry (Advanced), 12 credit points
- BIOL 3025 Evolutionary Genetics and Animal Behavior, 6 credit points
- BIOL 3026 Developmental Genetics, 6 credit points
- BIOL 3925 Evolutionary Genetics and Animal Behavior (Advanced), 6 credit points
- BIOL 3926 Developmental Genetics (Advanced), 6 credit points
- CPAT 3002 Cell Pathology B, 12 credit points
- MICR 3003 Molecular Biology of Pathogens, 12 credit points
- BMED 3003 Immunology, 12 credit points
- BMED 3004 Infectious Diseases, 12 credit points
- HPSC 3102 History of the Biomedical Sciences, 12 credit points
- PCOL 3002 Neuro- and Cardiovascular Pharmacology, 12 credit points
- PCOL 3902 Neuro- and Cardiovascular Pharmacology (Advanced), 12 credit points
- PHSI3002 Neuroscience - Cellular and Integrative, 12 credit points
- PHSI 3003 Heart and Circulation, 12 credit points

ANAT 3005 **Topographical Anatomy**

12 credit points
Assoc. Prof. Jan Provis
Offered: July. **Qualifying:** BMED 2101 and 2102. **Classes: 3** lec **& 9** tut or **prac/wk. Assessment:** One 3hr exam, one prac exam, one 2500w essay.

This unit of study comprises two strands of topographical anatomy - head and neck anatomy and musculo-skeletal anatomy. The anatomy of the head and neck region will be studied in one lecture, one tutorial and one dissection class per week. The unit of study includes study of the human skull and upper vertebral column and the associated musculatures; the anatomy and functional anatomy of the eye, ear, nose and sinuses; larynx and pharynx are also covered. Emphasis is given to the composition and distribution of the twelve cranial nerves. Musculoskeletal anatomy is covered in two lectures and two tutorials/practical sessions per week. The musculoskeletal system of the trunk and lower limb is studied with particular reference to posture and locomotion. This is contrasted with the structural specialisation of the upper limb for its manipulative and tactile functions.

Textbooks

Mackinnon and Morris. OxfordTextbook of Functional Anatomy, Vol 3: Head & Neck. Oxford University Press. 1990

Clemente, CO. A Regional Atlas of the Human Body. Williams and Wilkins.

BMED 3003 **Immunology**

12 credit points
Dr Helen Briscoe.
Offered: July. **Qualifying:** BMED 2101 and 2102. **Prerequisite:** PCOL 2001 and 2002, and BCHM (2001 or 2101 or 2901) and BCHM (2002 or 2102 or 2902). **Prohibition:** May not be counted with IMMU 3002. **Classes:** 3 lec, 1 tut & 8 prac/wk. **Assessment:** Exam, essays, prac.

This unit of study will be taught by the Immunology Unit of the Department of Medicine, with contributions from the Centenary Institute of Cancer Medicine and Cell Biology and other invited experts in the discipline. The unit will provide a comprehensive understanding of the components of the immune system at the molecular and cellular levels; the mechanisms of pathological immune processes; immune system dysfunction; and, immunological techniques used in clinical diagnostic and research laboratories.

BMED 3004 **Infectious Diseases**

12 credit points
Assoc. Prof. C. Harbour
Offered: July. Qualifying: BMED 2101 and 2102. Prerequisite: PCOL 2001 and 2002, and BCHM (2001 or 2101 or 2901) or (2002 or 2102 or 2902). Classes: 4 lec & 8 prac/wk. Assessment: Essays, tutorials, seminars, practical assessment and theory examinatio.

This unit of study is taught by the Department of Infectious Diseases, Faculty of Medicine, which is located on the 6th floor of the Blackburn building (Ph: (02) 9351 2412). A major aim of the unit is to study the interactions between infectious agents and their human hosts in order to understand how infectious disease occurs.

The rationale for this approach is that the elucidation and understanding of the mechanisms by which infectious agents cause disease should lead to the development of more rational control strategies. Knowledge of the causes of the most important infectious diseases is acquired by studying case histories in extended tutorial/demonstration sessions, lectures and self-directed learning. The lecture series also covers other topics including mechanisms of pathogenesis, replication strategies, epidemiology, and infection control procedures. Practical sessions are designed to maintain and improve the technical skills appropriate for the handling of infectious agents that you acquired in the core units. Theme sessions are used to demonstrate and explain the conceptual framework underpinning the most important practical procedures used in ID today.

MICR 3003 **Molecular Biology of Pathogens**

12 credit points
Dr Ferenci (Coordinator), Prof. Reeves, Dr Carter
Offered: July. **Qualifying:** BMED 3002. **Prohibition:** May not be counted with MICR 3903. **Classes:** 3 lec, 8 prac & 1 other/wk. **Assessment:** Two 2hr exams, practical.

This unit of study is designed to provide an understanding of microbial disease at the molecular level. The following topics will be covered: introductory bacterial genetics; pathogenic processes and the molecular basis of pathogenicity in bacteria; structure and function of micro-organisms and action of antibiotics and chemotherapeutic agents; and pathogenic processes in fungi and viruses.

Students are advised not to attempt this unit of study if they have not performed well in BMED 3002 Microbiology and Immunology.

MICR 3903 **Molecular Biology of Pathogens Advanced**

12 credit points
Dr Ferenci (Coordinator), Prof. Reeves, Dr Carter
Offered: July. **Qualifying:** Credit or better in BMED 3002. **Prohibition:** May not be counted with MICR 3003. **Classes:** 4 lec & 8 prac/wk. **Assessment:** Two 2hr exams, practical.

Same details as MICR 3003, with advanced components

Bachelor of Medical Science Honours

The Bachelor of Medical Science Honours degree is governed by regulations of the Senate and of the Faculty of Science that are parallel with those of the Bachelor of Science Honours degree.

An Honours degree may be taken by students of sufficient merit in any of the Departments offering Senior level core or option courses. Entry to Honours courses is regulated by individual Departments and the exact detail of Honours programs also varies from Department to Department. Students interested in undertaking Honours should consult the relevant Department for further details.

Bachelor of Psychology (BPsych) degree program

Summary of requirements

The requirements for the degree are set out in the Senate and Faculty Resolutions (see chapter 5) which should be read by all intending candidates. In particular it is important to ensure that any proposed course of study will comply with the basic requirements for the degree. Important aspects of the Resolutions are summarised below. The Resolutions should be consulted for any clarification of the summary points. The Resolutions in force prior to 2001 are contained in the *Faculty of Science Handbook 2000,* which can be inspected at the Faculty Office. The Bachelor of Psychology degree requires the equivalent of four years full time study and includes an honours year.

Enrolment guide

To complete your degree you must gain credit for at least 192 credit points including completing the honours course in Psychology and maintaining the required average grade in each year of study in the Science Subject Area of Psychology. The 192 credit points required for the degree must include:

- at least 12 credit points of junior Psychology units of study at an average grade of credit or better
- at least 12 credit points of units of study in the Science Subject Areas of Mathematics and Statistics
- at least 12 credit points are junior units of study from Science Subject Areas other than Psychology and Mathematics and Statistics
- at least 16 credit points of intermediate Psychology units of study at an average grade of Distinction or better
- at least 36 credit points of senior Psychology units of study (including PSYC 3201 and PSYC 3202) at an average grade of Distinction or better across all senior Psychology units of study
- at least 96 credit points from Science Subject Areas
- 48 credit points of Honours Psychology units of study with a grade of Honours (H3 or better)

You should also note the following:

- you can only take units of study which do not have timetable clashes
- most full time students enrol in 24 credit points (four 6 credit point units) of junior units of study in each semester of their first year
- before being permitted to enrol in a unit of study, you have to meet any prerequisites and corequisites for that unit of study
- you may not enrol in more than 48 credit points of units of study not in the Science Subject Areas
- you may not enrol in more than 60 credit points of junior units of study
- no more than 18 credit points may be counted from units in which a grade of Pass (Concessional) has been awarded.
- you may not enrol in Psychology Honours until you have completed at least 144 credit points of units of study and have satisfied all requirements for the degree of BPsych except those related to Honours
- students who fail to meet progression requirements may be permitted to transfer to another degree in the Faculty of Science
- units of study completed at the University of Sydney Summer School which correspond to units of study in the table of undergraduate units of study may be credited towards the course requirements.

Units of study

Units of study for the BPsych are listed in Table I of undergraduate units of study for the BSc.

Honours

Availability

Students shall complete the requirements for the honours course full-time over two consecutive semesters. If the Faculty is satisfied that a student is unable to attempt the honours course on a full-time basis and if the Head of Department concerned so recommends, permission may be granted to undertake honours half-time over four consecutive semesters. A student may not re-attempt the Psychology honours course.

Grades of Honours

To qualify for the award of an honours degree, students shall complete 48 credit points of Psychology honours units of study listed in the table of undergraduate units of study, as prescribed by the Head of the Department of Psychology.

The grade of honours and the honours mark are determined by performance in the honours course.

The Faculty is aware that, because the Honours units of study in some Departments are wholly or predominantly formal course work and in others a research project, and because some subjects are not taught until well into the undergraduate program, the way in which Departments take cognisance of perfonnance in the Honours year in arriving at a recommendation for a grade of Honours must be left to their discretion. However the Faculty has established a set of guidelines for Departments to use in determining their recommendations.

The Faculty has adopted the following guidelines for ' assessment of student performance in honours:

95-700

Outstanding First Class quality of clear Medal standard, demonstrating independent thought throughout, a flair for the subject, comprehensive knowledge of the subject area and a level of achievement similar to that expected by first rate academic journals. This mark reflects an exceptional achievement with a high degree of initiative and self-reliance, considerable student input into the direction of the study, and critical evaluation of the established work in the area.

90-94

Very high standard of work similar to above but overall performance is borderline for award of a Medal. Lower level of performance in certain categories or areas of study above.

Note: In order to qualify for the award of a university medal, it is necessary but not sufficient for a candidate to achieve a SCIWAM of 80 or greater and an honours mark of 90 or greater. Faculty has agreed that more than one medal may be awarded in the subject of an Honours course. The relevant Senate Resolution reads: "A candidate with an outstanding performance in the subject of an Honours course shall, if deemed of sufficient merit by the Faculty, receive a bronze medal". Students with an honours mark of 90 or greater and a SCIWAM of 77 to 79 inclusive may be considered for the award of a university medal only if it can be demonstrated that their WAM was affected by sickness, misadventure, unusual workload or choice of units of study.

80-89

Clear First Class quality, showing a command of the field both broad and deep, with the presentation of some novel insights. Student will have shown a solid foundation of conceptual thought and a breadth of factual knowledge of the discipline, clear familiarity with and ability to use central methodology and experimental practices of the discipline, and clear evidence of some independence of thought in the subject area. Some student input into the direction of the study or development of techniques, and critical discussion of the outcomes.

75-79

Second class honours, first division - student will have shown a command of the theory and practice of the discipline. They will have demonstrated their ability to conduct work at an independent level and complete tasks in a timely manner, and have an adequate understanding of the background factual basis of the subject. Student shows some initiative but is more reliant on other people for ideas and techniques and project is

dependent on supervisor's suggestions. Student is dedicated to work and capable of undertaking a higher degree.

70-74

Second class honours, second division - student is proficient in the theory and practice of their discipline but has not developed complete independence of thought, practical mastery or clarity of presentation. Student shows adequate but limited understanding of the topic and has largely followed the direction of the supervisor.

65-69

Third class honours - performance indicates that the student has successfully completed the work, but at a standard barely meeting honours criteria. The student's understanding of the topic is extremely limited and they have shown little or no independence of thought or performance.

In calculating the SCIWAM for a student transferring from another university, units of study are assigned level weightings and credit point values consistent with their equivalent units of study at the University of Sydney. A mark is assigned to each unit of study credited based on the results provided on a validated academic transcript from the university. Where no mark is provided by the institution an appropriate estimate is used. Students are encouraged to obtain actual marks from Departments at those universities that do not issue formal marks.

***Ranking for** postgraduate scholarships*

Ranking for postgraduate scholarships is determined by a combination of the SCIWAM and the Honours mark in the ratio 35:65.

Psychology honours units of study are listed in the Honours units of study table.

Honours in the Faculty of Science

Admission

To qualify to enrol in an honours course, students shall
(1) (a) have qualified for the award of a pass degree, or
(b) be a pass graduate of the Faculty of Science, or
(c) be a pass graduate holding a Bachelor of Science degree or an equivalent qualification from another institution
(2) have completed a minimum of 24 credit points of senior units of study relating to the intended honours course (or equivalent at another institution)
(3) have achieved either
(a) a credit average in the relevant senior Science units of study, or
(b) a SCIWAM of at least 58 (or equivalent at another institution)
(4) satisfy any additional criteria set by the Head of Department concerned.

Availability

Students shall complete the requirements for the honours course full-time over two consecutive semesters. If the Faculty is satisfied that a student is unable to attempt the honours course on a full-time basis and if the Head of Department concerned so recommends, permission may be granted to undertake honours half-time over four consecutive semesters. Not all Departments offer students part time enrolment in Honours, or Honours enrolment commencing in the July semester. Students considering these types of honours enrolment are urged to contact the Department concerned.

A student may not re-attempt an honours course in a single subject area. A student who is qualified to enrol in two honours courses may either complete the honours courses in the two subject areas separately and in succession, or complete a joint honours course, equivalent to an honours course in a single subject area, in the two subject areas. A joint honours course shall comprise such parts of the two honours courses as may be decided by the Dean.

Grades of Honours

To qualify for the award of an honours degree, students shall complete 48 credit points of honours units of study in the table of undergraduate units of study, as prescribed by the Head of Department concerned.

The grade of honours and the honours mark are determined by performance in the honours course.

The Faculty is aware that, because the Honours units of study in some Departments are wholly or predominantly formal course work and in others a research project, and because some subjects are not taught until well into the undergraduate program, the way in which Departments take cognisance of performance in the Honours year in arriving at a recommendation for a grade of Honours must be left to their discretion. However the Faculty has established a set of guidelines for Departments to use in determining their recommendations.

The Faculty has adopted the following guidelines for assessment of student performance in honours:
95-700

Outstanding First Class quality of clear Medal standard, demonstrating independent thought throughout, a flair for the subject, comprehensive knowledge of the subject area and a level of achievement similar to that expected by first rate academic journals. This mark reflects an exceptional achievement with a high degree of initiative and self-reliance, considerable student input into the direction of the study, and critical evaluation of the established work in the area.
90-94

Very high standard of work similar to above but overall performance is borderline for award of a Medal. Lower level of performance in certain categories or areas of study above.

Note: In order to qualify for the award of a university medal, it is necessary but not sufficient for a candidate to achieve a SCIWAM of 80 or greater and an honours mark of 90 or greater. Faculty has agreed that more than one medal may be awarded in the subject of an Honours course. The relevant Senate Resolution reads: "A candidate with an outstanding performance in the subject of an Honours course shall, if deemed of sufficient merit by the Faculty, receive a bronze medal". Students with an honours mark of 90 or greater and a SCIWAM of 77 to 79 inclusive may be considered for the award of a university medal only if it can be demonstrated that their WAM was affected by sickness, misadventure, unusual workload or choice of units of study.
80-89

Clear First Class quality, showing a command of the field both broad and deep, with the presentation of some novel insights. Student will have shown a solid foundation of conceptual thought and a breadth of factual knowledge of the discipline, clear familiarity with and ability to use central methodology and experimental practices of the discipline, and clear evidence of some independence of tfiought in the subject area. Some student input into the direction of the study or development of techniques, and critical discussion of the outcomes.
75-79

Second class honours, first division - student will have shown a command of the theory and practice of the discipline. They will have demonstrated their ability to conduct work at an independent level and complete tasks in a timely manner, and have an adequate understanding of the background factual basis of the subject. Student shows some initiative but is more reliant on other people for ideas and techniques and project is dependent on supervisor's suggestions. Student is dedicated to work and capable of undertaking a higher degree.
70-74

Second class honours, second division - student is proficient in the theory and practice of their discipline but has not developed complete independence of thought, practical mastery or clarity of presentation. Student shows adequate but limited understanding of the topic and has largely followed the direction of the supervisor.
65-69

Third class honours - performance indicates that the student has successfully completed the work, but at a standard barely meeting honours criteria. The student's understanding of the topic is extremely limited and they have shown little or no independence of thought or performance.

SCIWAM

SCIWAM means the weighted average mark calculated by the Faculty from the results for all intermediate and senior units of study with a weighting of 2 for intermediate units and 3 for senior units.

The SCIWAM is calculated by summing the products of the marks achieved and the weighted credit point values of the units of study taken in the degree and then dividing by the sum of the weighted credit point values, with all attempts at units of study being included in the calculation, except where units of study are discontinued with permission; the formula used is:

$$\text{SCIWAM} = \frac{\sum (W_c \times M_c)}{\sum W_c}$$

where W_c is the weighted credit point value - ie, the product of the credit point value and level of weighting of 2 for 2000-2999 units of study and 3 for 3000-3999 units of study; where M_c is the greater of 45 or the mark out of 100 for the unit of study.

In calculating the SCIWAM for a student transferring from another university, units of study are assigned level weightings and credit point values consistent with their equivalent units of study at the University of Sydney. A mark is assigned to each unit of study credited based on the results provided on a validated academic transcript from the university. Where no mark is provided by the institution an appropriate estimate is used. Students are encouraged to obtain actual marks from Departments at those universities that do not issue formal marks.