

# FACULTY OF SCIENCE

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# FACULTY OF SCIENCE

## Policies

### ■ Policy on credit transfer relating to Bachelor-level courses in the Faculty of Science

#### FROM INCOMPLETE BACHELOR-LEVEL SCIENCE COURSES

Students transferring to a bachelor's degree course offered by the Faculty of Science at QUT from a comparable, partially completed course in a recognised institution may be granted credit towards the QUT award. In general, credit will be granted pro rata; for example, 96 credit points of credit normally will be granted for each year of full-time study (or its equivalent) successfully completed at the other institution. The maximum credit which may be granted is 192 credit points.

Each application for credit towards a Faculty of Science award will be considered individually, on its merits. Students who have successfully completed a year or more of full-time study (or its equivalent) at another institution nevertheless may be required to undertake specific first-level units at QUT. Also, to satisfy the relevant QUT degree rules, some students may have to gain credit totalling more than 288 credit points.

#### FROM COMPLETED ASSOCIATE DIPLOMA COURSES

Students entering a bachelor's degree course offered by the Faculty of Science at QUT following successful completion of a relevant Associate Diploma course from a recognised institution may be granted credit towards the QUT award. The maximum credit which may be granted is 96 credit points.

Unless the Dean determines otherwise, the credit will be granted as provisional credit. To have the credit confirmed, the student undertakes in the QUT course a program of study of at least 48 credit points and attains a grade point average of not less than 4.0. If, at the conclusion of such a course of study, the student's grade point average is less than 4.0, the Dean shall determine both the extent to which credit granted conditionally may be retained and the student's subsequent program of study in the course.

### ■ Policy on submission of project reports for assessment

The Science Academic Board has approved the following rules with regard to the completion of project units in all undergraduate and postgraduate courses (including honours projects):

- (i) A student enrolled in a project unit is required to submit the associated project report, dissertation or thesis for assessment by no later than the final day of the examination period for the semester in which the student's enrolment in that unit will terminate.
- (ii) In special circumstances and on the written recommendation of the student's supervisor, the Dean may grant an extension of time to complete the work associated with the project. The final date for submission of the report after such an extension shall be the last day of the deferred examination period for the semester in which the student's enrolment in that unit would terminate. In such cases, an 'A' result shall be given initially to the student in respect of this unit.
- (iii) The Academic Board may grant a further extension of time to complete the work associated with a project, on condition that the student re-enrols in the project unit for the succeeding semester. Failure to re-enrol in the project unit by the last day of

the deferred examination period for the semester in which, otherwise, the student's enrolment in that unit would terminate, will result in a grade of 2 or 1 being awarded in that unit.

Subsequent to the assessment process, the relevant school shall have discretion as to whether a candidate needs to re-enrol to effect any amendments required, or whether such amendments are essentially editorial. However, a student who is required to undertake further investigative work relating to his or her project must continue to be enrolled in the relevant project unit.

Students seeking extensions are advised that late submission of a project report for assessment as indicated in (ii) above may prevent publication of the associated result in time for the student to be included on the graduation list for that semester. Thus, course completion and graduate status from the relevant course may be delayed. This could disadvantage students seeking employment or promotion on the basis of the qualification in question.

## ■ Policy and procedures concerning exemption from practical work

Exemptions from practical work will not normally be granted by Schools in the Faculty. However, where a student wishes to be exempt on the grounds of some extenuating circumstances from the practical component of a unit attempted previously, they must write to the Head of School controlling the unit (or Dean of Faculty in the case of Faculty units), stating the following:

- (i) the year in which the unit was previously attempted
- (ii) the total mark/grade obtained for the practical component for the semester, and the maximum possible mark/grade, where known, and
- (iii) the circumstances on which the students are basing their application.

Any documentation relevant to these circumstances must be provided with the application.

Students, if required, must submit practical reports, notebooks, field notes, etc from their previous attempt at the unit. No exemption will be given for practicals where the unit has been attempted more than two years prior to the current enrolment. Students seeking exemption from practical work must do so within two weeks of the commencement of the semester in which the unit is taken.

Heads of School will:

- (i) consult with relevant course/strand coordinators and unit lecturers with regard to the application
- (ii) respond to the application in writing, and
- (iii) forward a copy of their response to the course/strand coordinator and unit lecturer.

Heads of School will determine individual School policies on exemptions and these may be obtained from the School offices.

# Course Structures

## ■ Master of Applied Science (SC80)

**Location:** Gardens Point campus

**Course Duration:** 2 years full-time, 4 years part-time

**Total Credit Points:** 192

**Course Coordinator:** Dr Don Field

**Entry Requirement:** Bachelor of Applied Science

The objectives of this course are:

- to provide postgraduate educational opportunities in specialised fields of applied science by means of a program which involves either an original contribution to knowledge or an original application of existing knowledge
- to provide education in research methods
- to enable graduates employed in industry to undertake a higher degree qualification by a combination of coursework, research, and thesis
- to expand the involvement of students employed in industrial organisations and external agencies in undertaking relatively short duration applied research or investigation.

This degree consists of two stages:

- Stage One comprises a program of assessed coursework. (Honours graduates may be exempt from Stage One.)

On successful completion of Stage One, students with a GPA of less than 5.0 will be awarded a Graduate Diploma in Applied Science while students with a GPA of 5.0 or greater are permitted to continue to Stage Two.

- In Stage Two, students are required to undertake a program of supervised research and investigation at a level of scientific competence significantly higher than that expected of a first degree graduate. Students can undertake an approved project in any area of interest supported by a research centre, research concentration or School within the Faculty of Science.

### Rules and Conditions

For rules and conditions, refer to the course entry for Master of Applied Science (SC80) in the University-wide and Interfaculty Courses section of this Handbook.

### Course Structure

#### STAGE 1

The unit IFN001 Advanced Information Retrieval Skills (4 credit points) is common to all strands.

The Stage 1 units for individual strands are as follows. Where the total number of credit points shown for a discipline is not 96, students will make further selections up to 96 credit points from other School units in honours, other masters or advanced undergraduate courses, as approved by the Course Coordinator.

	<b>Credit Points</b>	
<b>CHEMISTRY STRAND</b>		
CHN701	Topics in Advanced Chemistry 1	12
CHN704	Research Techniques	44
CHN801	Topics in Advanced Chemistry 2 Elective Unit Elective Unit	12

### **Elective Units**

CHN710	Chemical Instrumentation	12
CHN720	Chemometrics	12
CHN730	Advanced Physical Methods in Chemistry	12
CHN740	Laboratory Techniques for Preparative Chemistry Any other approved unit.	12

### **GEOLOGY STRAND**

Selections from the following, depending on background and research area:

ESN110	Advanced Topics in Earth Science 1	12
ESN120	Advanced Topics in Earth Science 2	12
ESN130	Computer Applications in Earth Science	12
ESN140	Research Methodology 1	12
ESN150	Research Methodology 2	12
ESN160	Seminars	12
ESN170	Literature Survey	12
	Credit Points selected from other programs	8

### **LIFE SCIENCE STRAND**

LSN011	Research Seminars in Life Science 1	6
LSN013	Readings in Life Science 3	24
LSN023	Research Seminars in Life Science 3 Credit Points selected from other programs	12 50

### **MATHEMATICS STRAND**

MAN001	Reading Course 1	8
MAN002	Reading Course 2 Credit Points selected from other programs	12 72

### **PHYSICS STRAND**

PHN715	Advanced Topics in Physics 1	8
PHN716	Advanced Topics in Physics 2 Credit Points selected from other programs	12 72

### **STAGE 2**

At least 96 credit points of research

- **Master of Applied Science (Medical Physics)**
- **Master of Applied Science (Medical Ultrasound)**
- **Master of Applied Science (Medical Imaging)**
- **Master of Applied Science (Radiation Therapy) (PH80)**

**Location:** Gardens Point campus

**Course Duration:** 2 years full-time, 4 years part-time (plus Summer School, except for Medical Physics students)

**Total Credit Points:** 192 – Medical Physics; 204 – Medical Ultrasound, Medical Imaging, Radiation Therapy

**Standard Credit Points/Full-Time Semester:** 48

**Coordinators:**

Medical Physics Major: Dr Tim van Doorn

Medical Ultrasound Major: Ms Margo Harkness

Medical Imaging Major: Mr Brian Starkoff

Radiation Therapy Major: Associate Professor Brian Thomas

**Entry Requirements**

This program commences in February each year. Applications are to be made prior to 8 November in the preceding year.

**MEDICAL PHYSICS MAJOR**

To be eligible to enrol for the Medical Physics Major, an applicant must have completed an acceptable tertiary course with a major in Physics.

Applicants with other qualifications (eg Engineering) may be enrolled subject to the approval of the Head, School of Physics. In some instances, a bridging program may be necessary.

**MEDICAL ULTRASOUND, MEDICAL IMAGING, AND RADIATION THERAPY MAJORS**

To be eligible to enrol in the Medical Ultrasound or Medical Imaging Major, an applicant will normally be qualified as a diagnostic radiographer (or medical imaging technologist) at degree or diploma level and have had a minimum of two years experience in clinical medical imaging practice. To be eligible to enrol in the Radiation Therapy Major, an applicant will normally be qualified as a Radiation Therapist at degree or diploma level and have had a minimum of two years experience in clinical practice.

Applicants with other qualifications (eg in paramedical or physical sciences), and appropriate experience, may be permitted to enrol subject to the approval of the Head of the School of Physics. In some instances, a bridging program may be necessary.

Applicants must also demonstrate, in writing, that access to suitable clinical experience will be available for the duration of the course.

**Course Requirements****MEDICAL PHYSICS MAJOR**

To complete Stage 1, students must complete units from the list below, totalling 96 credit points. Units available to students in the Medical Physics Major are indicated by C and MP.

In Semester 2, students may select either PHN213 Biomechanics/Physiological Measurement or PHN214 Health and Occupational Physics for a total of 48 credit points (FT).

**MEDICAL ULTRASOUND MAJOR**

To complete Stage 1, students must complete units from the list below, totalling 108 credit points. Units available to students in the Medical Ultrasound Major are indicated by C, C+ and MU.

**MEDICAL IMAGING MAJOR**

To complete Stage 1, students must complete units from the list below, totalling 108 credit points. Units available to students in the Medical Imaging Major are indicated by C, C+ and MI.

**RADIATION THERAPY MAJOR**

To complete Stage 1, students must complete units from the list below, totalling 108 credit points. Units available to students in the Radiation Therapy Major are indicated by C, C+ and RT.

On successful completion of Stage 1:

- (i) students with GPA less than 5.0 will normally graduate with a GradDipAppSc; (however, the Head of School may grant permission for such students to continue to Stage 2)
- (ii) students with GPA of 5.0 or greater will be permitted to:
  - (a) graduate as above, or
  - (b) continue with Stage 2 (which is a further one-year full-time or equivalent) involving a project leading to the award MAppSc.

<b>Stage 1</b>		<b>Credit Points</b>	<b>Contact Hrs/Wk</b>
<b>First Semester</b>			
LSB142	Human Anatomy & Physiology (MP)	12	5
LSN159	Advanced Pathology (C+)	12	4
PHN112	Medical Imaging Science (MP)	12	4
PHN113	Radiation Physics (MP/MI)	12	4
PHN114	Microprocessors & Instrumentation (MP)	12	4
PHN155	Ultrasonic Examination in Obstetrics/Gynaecology (MU)	6	2
PHN156	Ultrasonic Examination of the Abdomen (MU)	6	2
PHN162	Principles of Medical Ultrasound (MU)	12	4
PHN171	Advanced Oncological Imaging (RT)	12	4
PHN173	Advanced Radiotherapy Technique (RT)	12	4
PHN181	Principles of Medical Image Processing (MI/RT)	6	2
PHN182	Computer Tomography (MI)	6	2
PHN183	Nuclear Medicine (MI) <sup>1</sup>	12	4
PHN184	Breast Imaging (MI) <sup>1</sup>	12	4
PHN197	Clinical Attachment 1 (C+)	12	
<b>Second Semester</b>			
PHN211	Medical Imaging (MP)	12	4
PHN212	Radiotherapy (MP)	12	4
PHN213	Biomechanics/Physiological Measurement (MP)	12	4
PHN214	Health & Occupational Physics (MP)	12	4
PHN216	Medical & Health Technology Management (C)	6	2
PHN217	Research Methodology (C)	6	2
PHN271	Principles of Oncology (RT)	12	4
PHN272	Brachytherapy (RT)	6	2
PHN273	Advanced Computer Planning (RT)	6	2
PHN281	Magnetic Resonance Imaging (MI)	12	4
PHN282	Digital Subtraction Angiography (MI)	6	2
PHN291	Medical Diagnosis (C+)	6	2
PHN297	Clinical Attachment 2 (C+)	12	
PHN354	Ultrasonic Examinations of the Head, Neck & Peripheral Organs (MU)	6	2
PHN355	Cardiovascular Ultrasound (MU)	12	4
<b>Summer Term</b>			
PHN397	Clinical Attachment 3 (C+)	12	

The units PHN216 Medical and Health Technology Management and PHN217 Research Methodology are compulsory for students in all majors. Units LSN159 Advanced Pathology, PHN291 Medical Diagnosis, PHN197 Clinical Attachment 1, PHN297 Clinical Attachment 2, and PHN397 Clinical Attachment 3 are compulsory for students in the Medical Ultrasound, Medical Imaging and Radiation Therapy Majors. Each clinical attachment unit involves a minimum of 240 hours of clinical experience. Students must successfully complete these units in the order PHN197, PHN297 and PHN397 unless special permission is granted.

<sup>1</sup> Full year subject, continues semester 2.



**Stage 2****Project over 2 semesters**

PHN520/1/2

**Credit Points**

96

**Project over 4 semesters**

PHN540/1/2/3/4

96

**Note:** A student may request an extension of time in which to submit the project report for assessment. A request for an extension of time up to a maximum of six months shall be made in writing through the Head of School to the Dean. Any request for a further extension, or any request for an extension to a date later than six months after the original due date, shall be made in writing to the Academic Board. The Academic Board may grant the extension under such conditions as it may consider appropriate, or may award the student a 'Fail' result in the project unit.

A student who has received a 'Fail' result in the project unit may re-enrol in the unit only in exceptional circumstances and with the express permission of the Academic Board.

**■ Master of Applied Science (Life Science) (LS80)**

**Location:** Gardens Point campus

**Course Duration:** 1 1/2 years full-time, 3 years part-time

**Total Credit Points:** 144

**Standard Credit Points/Full-Time Semester:** 48

**Course Coordinator:** Dr David Allen

**Entry Requirements**

Applicants shall hold a Bachelor of Applied Science with a GPA of 5.0 (on a 7 point scale) or better in the appropriate discipline for which they are seeking admission.

Applicants may be required to attend an interview with the Head of School and/or Course Coordinator to establish suitability for entrance into the course.

Graduates of the Graduate Diploma in Biotechnology (LS70) with a GPA of 5.0 or better (on a 7 point scale) will be eligible for entry into the course with a credit for 96 credit points.

Applicants who do not hold the specific tertiary qualification required of normal entrants may be admitted upon successful completion of a qualifying program prescribed by the Head of School.

**Special Course Requirements**

Students should consult the Course Coordinator regarding their programs.

Students must select two disciplinary specialisation elective units.

For part-time students, the project (dissertation) is normally carried out in the employer's laboratory. The employer's written permission is required.

**Note:** This course commences in mid-year.

**Full-Time Course Structure****Year 1, Semester 2**

		<b>Credit Points</b>	<b>Contact Hrs/Wk</b>
LSB637	Molecular Genetics	12	5
LSN102	Cellular Basis of Disease	12	3
LSN110	Molecular Basis of Disease	12	3

Specialist Elective, select one from the following:

LSN510	Clinical Biochemistry 1	12	3
LSN511	Haematology 1	12	3
LSN512	Histopathology 1	12	3
LSN515	Microbiology 1	12	3
LSN517	Immunology 1	12	3
LSN518	Diagnostic Cytology 1	12	3

### Year 2, Semester 1

HRN104	Introduction to Management	12	3
LSN150	Ethics and Life Science	12	3
LSP735	Human Molecular Biology	12	5

Specialist Elective, select one from the following:

LSN610	Clinical Biochemistry 2	12	3
LSN611	Haematology 2	12	3
LSN612	Histopathology 2	12	3
LSN615	Microbiology 2	12	3
LSN617	Immunology 2	12	3
LSN618	Diagnostic Cytology 2	12	3

### Year 2, Semester 2

LSN710	Project	48	
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### Part-Time Course Structure

#### Year 1, Semester 2

LSN102	Cellular Basis of Disease	12	3
LSN110	Molecular Basis of Disease	12	3

#### Year 2, Semester 1

HRN104	Introduction to Management	12	3
LSN150	Ethics and Life Science	12	3

#### Year 2, Semester 2

LSB637	Molecular Genetics	12	5
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Specialist Elective, select one from the following:

LSN510	Clinical Biochemistry 1	12	3
LSN511	Haematology 1	12	3
LSN512	Histopathology 1	12	3
LSN515	Microbiology 1	12	3
LSN517	Immunology 1	12	3
LSN518	Diagnostic Cytology 1	12	3

#### Year 3, Semester 1

LSP735	Human Molecular Biology	12	5
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Specialist Elective, select one from the following:

LSN610	Clinical Biochemistry 2	12	3
LSN611	Haematology 2	12	3
LSN612	Histopathology 2	12	3
LSN615	Microbiology 2	12	3
LSN617	Immunology 2	12	3
LSN618	Diagnostic Cytology 2	12	3

#### Year 3, Semester 2

LSN711	Project 1	24	
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#### Year 4, Semester 1

LSN712	Project 2	24	
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## ■ Master of Applied Science (Medical Laboratory Science) (LS85)

**Course discontinued:** To be replaced by Master of Applied Science (Life Science) (LS80).

**Location:** Gardens Point campus

**Course Duration:** 3 years part-time

**Total Credit Points:** 144

**Standard Credit Points/Part-time Semester:** 24

**Course Coordinator:** Dr David Allen

### Entry Requirements

#### NORMAL ENTRY

Applicants shall hold a Bachelor of Applied Science (or equivalent) in the appropriate discipline for which they are seeking admission and shall normally have had at least one year of appropriate work experience in the discipline for which they are seeking admission.

Applicants may be required to attend an interview with the Head of School and/or Course Coordinator to establish suitability for entrance into the course.

#### SPECIAL ENTRY

Applicants who do not hold the specific tertiary qualification required of normal entrants may be admitted upon successful completion of a qualifying program prescribed by the Head of School.

### Special course Requirements

Students should consult the Course Coordinator regarding their programs.

Students must select two disciplinary specialisation elective units in Year 3, Semesters 1 and 2.

The project (dissertation) is carried out in the laboratory. The employer's written permission is required.

### Part-time Course Structure

	Credit Points	Contact Hrs/Wk
<b>Year 3, Semester 1</b>		
LSN530    Dissertation 1	12	3
Select one of the following units:		
LSN510    Clinical Biochemistry 1	12	3
LSN511    Haematology 1	12	3
LSN512    Histopathology 1	12	3
LSN515    Microbiology 1	12	3
LSN517    Immunology 1	12	3
LSN518    Diagnostic Cytology 1	12	3
<b>Year 3, Semester 2</b>		
LSN531    Dissertation 2	12	3
Select one of the following units:		
LSN610    Clinical Biochemistry 2	12	3
LSN611    Haematology 2	12	3
LSN612    Histopathology 2	12	3
LSN615    Microbiology 2	12	3
LSN617    Immunology 2	12	3
LSN618    Diagnostic Cytology 2	12	3

## ■ Graduate Diploma in Applied Science (SC71)

No enrolments are accepted directly into this course. For details see Course Rules for Master of Applied Science (SC80) entry in the section Interfaculty Courses (paragraph 4.2).

**■ Graduate Diploma in Applied Science (Medical Physics)**  
**Graduate Diploma in Applied Science (Medical Ultrasound)**  
**Graduate Diploma in Applied Science (Medical Imaging)**  
**Graduate Diploma in Applied Science (Radiation Therapy)**  
**(PH71)**

No enrolments are accepted directly into this course. For details see the section Course Requirements for Master of Applied Science (Medical Physics), Master of Applied Science (Medical Ultrasound), Master of Applied Science (Medical Imaging), and Master of Applied Science (Radiation Therapy) (PH80).

**■ Graduate Diploma in Biotechnology (LS70)**

**Location:** Gardens Point campus

**Course Duration:** 1 year full-time, 2 years part-time

**Total Credit Points:** 96

**Standard Credit Points/Part-Time Semester:** 24

**Course Coordinator:** Dr Peter Timms

**Entry Requirements**

**NORMAL ENTRY**

To be eligible for entry to the Graduate Diploma in Biotechnology, an applicant must have completed an appropriate degree in a relevant science area. Some background in biochemistry is essential.

**SPECIAL ENTRY**

Applicants who do not hold the tertiary qualifications required for normal entry may be eligible for admission if they have completed a diploma or degree in another appropriate non-science area as determined by the Head of School, and are employed in the biotechnology area.

**Note:** This course commences in mid-year.

<b>Full-Time Course Structure (Commencing students)</b>		<b>Credit Points</b>	<b>Contact Hrs/Wk</b>
<b>Year 1, Semester 2</b>			
LSB637	Molecular Genetics	12	5
Select three from the following:			
CHP220	Principles of Bioprocessing	12	5
LSB607	Biochemical Separations	12	5
LSB617	Plant Tissue Culture 2	12	5
LSN102	Cellular Basis of Disease	12	3
LSN110	Molecular Basis of Disease	12	3
<b>Year 1, Semester 1</b>			
LSP127	Business Aspects of Biotechnology	12	3
Select three from the following:			
CHP420	Bioprocess Engineering Laboratory	12	5
HRN104	Introduction to Management	12	3
LSB517	Plant Tissue Culture 1	12	5
LSN150	Ethics & Life Science	12	5
LSP735	Human Molecular Biology	12	5
LSP737	Plant & Animal Molecular Biology	12	5

**Part-time Course Structure (Commencing students)****Year 1, Semester 2**

LSB607	Biochemical Separations	12	5
LSB637	Molecular Genetics	12	5

**Year 1, Semester 1**

LSP127	Business Aspects of Biotechnology	12	3
LSP735	Human Molecular Biology	12	5

**Year 2, Semester 2**

Select two from the following:

CHP220	Principles of Bioprocessing	12	5
LSB617	Plant Tissue Culture 2	12	5
LSN102	Cellular Basis of Disease	12	3
LSN110	Molecular Basis of Disease	12	3

**Year 2, Semester 1**

Select three from the following:

CHP420	Bioprocess Engineering Laboratory	12	5
HRN104	Introduction to Management	12	3
LSB517	Plant Tissue Culture 1	12	5
LSN150	Ethics & Life Science	12	3
LSP737	Plant & Animal Molecular Biology	12	5

**Part-Time Course Structure (Continuing students)****Year 2, Semester 1**

CHP320	Downstream Processing	12	5
LSB537	Genetic Engineering	12	5

**Year 2, Semester 2**

LSB637	Molecular Genetics	12	5
LSP127	Business Aspects of Biotechnology	12	5

**Year 3, Semester 1**

LSP735	Human Molecular Biology	12	5
LSP737	Plant & Animal Molecular Biology	12	5

**■ Bachelor of Applied Science (Honours) (SC60)**

With majors in: Chemistry, Geology, Life Science, Mathematics and Physics.

**Location:** Gardens Point campus

**Course Duration:** 1 year full-time, 2 years part-time

**Total Credit Points:** 96

**Standard Credit Points/Full-Time Semester:** 48

**Course Coordinator:** Dr Don Field

**Entry Requirements**

To be eligible for admission, students should have completed QUT's Bachelor of Applied Science (SC30 or MA34) or equivalent and should have attained a grade point average (GPA) of at least 5.0 over that degree, including grades of at least credit (5) in all units directly relevant to the proposed honours program. Application for admission should normally be made at the end of the final year of the pass degree, or within 18 months of completing that degree.

Applicants who do not satisfy the above conditions but who have demonstrated outstanding performance in only the final year of a degree, or whose application is based on other factors including work experience or involvement in research, may be admitted at the discretion of the Dean.

Please note that for the Mathematics major, other degrees with major studies in Mathematics (including Statistics) may provide suitable entry to the program.

### Course Structure

The honours program comprises of 96 credit points. The course structure depends on the major and may vary slightly from one student to another, depending on the program and particular units chosen.

The general course structure consists of a project (see below) and units or advanced topics chosen from the program of the selected major. The unit IFN001 Advanced Information Retrieval Skills may also be included.

Part-time candidates annually undertake approximately half of the full-time program. Classes are held at the same times as for full-time students and thus may involve some day release from employment.

Students should consult the coordinator concerning the availability of units and selection of units for their major.

Course Structure	Credit Points	Contact Hrs/Wk
<b>CHEMISTRY MAJOR</b>		
<b>Semester 1</b>		
CHB700/1 Research Project	22	
CHB701/1 Complementary Studies for Chemists	4	2
CHB780/1 Advanced Topics in Chemistry 1	12	6
IFN001 Advanced Information Retrieval Skills	4	2
Elective Unit	6	
<b>Semester 2</b>		
CHB700/2 Research Project	26	
CHB701/2 Complementary Studies for Chemists	4	2
CHB780/2 Advanced Topics in Chemistry 1	12	6
Elective Unit	6	
Elective units are chosen from a selection of Chemistry and other relevant disciplines.		
<b>GEOLOGY MAJOR</b>		
<b>Semester 1</b>		
ESB700/1 Project	24	
ESB701/1 Geology Reviews	6	3
ESB702/1 Complementary Studies	6	2
ESB704 Advanced Studies in Earth Science	20	
IFN001 Advanced Information Retrieval Skills	4	2
<b>Semester 2</b>		
ESB700/2 Project	24	
ESB701/2 Geology Reviews	6	3
ESB702/2 Complementary Studies	6	2
<b>LIFE SCIENCE MAJOR</b>		
<b>Semester 1</b>		
LSB723/1 Readings in Life Science 1	8	
LSB825/1 Project	24	
IFN001 Advanced Information Retrieval Skills	4	2
Life Science Elective Unit	12	
<b>Semester 2</b>		
LSB722 Research Strategies	16	
LSB723/2 Readings in Life Science 1	8	
LSB825/2 Project	24	

**Life Science Elective Units**

LSB558	Applied Physiology	12	5
LSB734	Analytical Electron Microscopy	12	5
LSB801	Advanced Plant Physiology & Biochemistry	12	5
LSB802	Immunology 5	12	5
LSB804	Advanced Population Biology	12	5
LSP735	Human Molecular Biology	12	5
LSP737	Plant & Animal Molecular Biology	12	5

or another unit approved by the Head of School in consultation with the supervisor.

**MATHEMATICS MAJOR****Semester 1**

MAB989/1	Project	18	
	Mathematics Elective Units (2 or 3)	24-36	

**Semester 2**

MAB989/2	Project	18	
	Mathematics Elective Units (3 or 2)	36-24	

**Mathematics Elective Units**

Five units are to be selected over the two semesters. (Not all units may be available.)

MAB906	Topics in Analysis	12	4
MAB912	Continuum Modelling	12	4
MAB913	Computational Mathematics 3B	12	4
MAB929	Time Series & Statistical Forecasting	12	4
MAB970	Probability Theory & Stochastic Processes	12	4
MAB971	Advanced Mathematics of Finance	12	4
MAB973	Partial Differential Equations	12	4
MAB974	Sampling & Survey Techniques	12	4
MAB975	Ordinary Differential Equations & Chaos	12	4
MAB976	Reliability & Survival Analysis	12	4
MAB977	Scheduling & Networks	12	4
MAB978	Statistical Signal Processing & Image Analysis	12	4
MAB979	Statistical Modelling & Data Analysis	12	4
MAB980	Stochastic Processes & Applications	12	4
MAB981	Applied Statistical Inference & Experimentation	12	4
MAB984	Actuarial Statistics	12	4
MAB985	Computational Mathematics 4	12	4
MAB986	Mathematical Modelling of Industrial Processes	12	4
MAB987	Optimisation of Controlled Processes	12	4
MAN012	Advanced Studies	12	4

**PHYSICS MAJOR****Semester 1**

PHB705/1	Project	24	
	Physics Elective Unit	12	4
	Physics Elective Unit	12	4

**Semester 2**

PHB705/2	Project	24	
	Physics Elective Unit	12	4
	Physics Elective Unit	12	4

**Physics Elective Units**

PHB706	Quantum Mechanics	12	4
PHB707	Advanced Materials	12	4
PHB708	Advanced Topics in Physics	12	4
PHN112	Medical Imaging Science	12	4
PHN114	Microprocessors & Instrumentation	12	4
PHN212	Radiotherapy	12	4

## ■ Bachelor of Applied Science (SC30)

With majors in: Biology, Chemistry, Geology, Mathematics, Microbiology/ Biochemistry, and Physics

**Location:** Gardens Point campus

**Course Duration:** 3 years full-time, 6 years part-time

**Total Credit Points:** 288

**Standard Credit Points/Full-Time Semester:** 48

**Course Coordinator:** Dr Don Field

### Course Rules

1. A student may enrol as either a full-time or a part-time student. A full-time student is one who is enrolled in 36 or more credit points per semester. A part-time student is one who is enrolled in less than 36 credit points in the semester.
2. All commencing students and certain continuing students are required to attend scheduled academic advising sessions to plan their progression through the course, and to obtain the approval of an academic adviser prior to effecting any change of enrolment.
3. Students are normally expected to complete the course in minimum time. A full-time student enrolls in an average of 48 credit points per semester for six semesters and a part-time student enrolls in an average of 24 credit points per semester for 12 semesters.
4. To fulfil the requirements for the award of the degree, a student must complete units totalling at least 288 credit points, comprising major and minor studies, and supporting units.

Major and minor studies are defined in terms of the discipline and the academic level at which units are offered:

- (i) A major must be completed in one of the following discipline areas – biology, biotechnology, chemistry, mathematics, geology, microbiology/biochemistry, or physics. Completion of a major consists of passing units totalling at least 120 credit points from the second and third schedules, including a minimum of 48 credit points at third level. The general requirements for each major are set out after the Course Rules.
- (ii) A minor may be completed in any approved discipline within the University. Completion of a minor consists of passing units totalling at least 48 credit points from the second and third levels, and including at least 24 credit points at third level.

Major and minor studies may be undertaken in the same or in closely related discipline areas.

5. A registered student who has successfully completed the equivalent of the first and second years of the standard full-time course, normally with a grade point average (GPA) of not less than 4.5 overall, may, at the discretion of the Cooperative Education Program Coordinator, undertake the Cooperative Education Program.

This involves 10-12 months of paid full-time employment in an approved industrial/commercial environment during which time the student is enrolled in the unit SCB100 Cooperative Education. On completion of the approved cooperative education placement the student resumes formal studies.

### Notes on the Rules

- (i) First, second and third level units are defined, respectively, to be those listed in the first, second and third schedules to the course rules. In general, it is expected that a



second level unit will have one or more first level prerequisite units. Similarly, a third level unit is likely to have one or more second level prerequisite units. The unit schedules are shown in the Schedule of Units.

- (ii) Instead of the major and minor requirement described in Rule 3, students may, in special circumstances and with the written approval of the Dean, undertake two majors or a major and two minors.

### General requirements for majors

The units and specifications listed are the minimum requirements for completion of a major in each discipline.

#### BIOLOGY

- First level: Animal and Plant Structure and Function  
Cell and Molecular Biology  
Chemistry 1 and 2  
Introduction to Life Science  
Statistics or Statistics 1A
- Second & third levels: 120 credit points of Biology units including 48 from the third level

#### BIOTECHNOLOGY

- First Level: Animal and Plant Structure and Function  
Cell and Molecular Biology 1  
Chemistry 1 and 2  
Introduction to Life Science  
Statistics or Statistics 1A
- Second & third levels: 120 credit points of Biotechnology units including 48 from the third level

#### CHEMISTRY

- First level: Chemistry 1 and 2  
At least 36 credit points from other first level Science units OR  
Computing OR  
Introduction to Computing
- Second & third levels: 120 credit points of Chemistry units including 48 from the third level

#### GEOLOGY

- First level: Physical Geology  
Historical Geology  
At least 48 credit points from other first level Science units (to include at least 12 credit points from Maths, Physics or Chemistry) OR  
Computing OR  
Introduction to Computing
- Second & third levels: 120 credit points of Geology units including 48 from the third level

#### MATHEMATICS

- First level: Discrete Mathematics  
Statistics or Statistics 1A OR Algebra and Analysis B  
Mathematics 1 and 2 Calculus and Analysis A  
Calculus and Vector Algebra<sup>2</sup>  
Statistics 1A
- Second & third levels: 120 credit points of Mathematics units including 48 from the third level

<sup>2</sup> This unit can be replaced by another first level mathematics unit with permission from the School of Mathematics.

## MICROBIOLOGY/BIOCHEMISTRY

First level:	Animal and Plant Structure and Function Cell and Molecular Biology Chemistry 1 and 2 Introduction to Life Science Statistics or Statistics 1A
Second & third levels:	120 credit points of Microbiology/Biochemistry units including 48 from the third level

## PHYSICS

First level:	Computing OR Introduction to Computing <sup>3</sup> Maths 1 and 2 Physics 1 and 2 Statistics <sup>2</sup> or Statistics 1A <sup>3</sup>
Second & third levels:	120 credit points of Physics units including 48 from the third level Mathematics 3 Mathematics 4

All students must take SCB001 Learning at University unless exemption has been granted.

**Note:** There is no evening program for part-time students. Part-time students will attend classes with full-time students and therefore will require day release from employment to attend most units. Many mathematics units are available by evening study.

Schedule of Units		Semester	Credit	Contact
First Schedule – First Level Units		Offered	Points	Hrs/Wk
CHB142	Chemistry 1	1	12	6
CHB182	Chemistry 1	1,2	12	6
CHB213	Concepts of Analytical Chemistry	2	12	5
CHB242	Chemistry 2	2	12	6
CHB282	Chemistry 2	1,2	12	6
CSB155	Introduction to Computing	1,2	12	4
CSB263	Computing	1,2	12	4
ESB122	Physical Geology	1	12	5
ESB222	Historical Geology	2	12	5
LSB118	Introduction to Life Science	1	12	6
LSB122	Biology 1	1	12	5
LSB150	Human Anatomy	1	12	5
LSB222	Biology 2	2	12	5
LSB228	Animal & Plant Structure & Function	2	12	5
LSB238	Cell and Molecular Biology 1	2	12	5
MAB102	Basic Mathematics	1	12	4
MAB212	Mathematics 1	1,2	12	4
MAB222	Mathematics 2	1,2	12	4
MAB232	Discrete Mathematics	1,2	12	4
MAB237	Statistics	1,2	12	4
MAB301	Calculus & Analysis A	1,2	12	4
MAB303	Algebra & Analysis B	1,2	12	4
MAB304	Calculus & Vector Algebra	1,2	12	4
MAB321	Computational Mathematics 1	1,2	12	4
MAB342	Mathematics of Finance	1,2	12	4
MAB347	Statistics 1A	1,2	12	4
MAB348	Statistics 1B	1,2	12	4
PHB122	Physics 1	1	12	5

<sup>2</sup> This unit can be replaced by another first level mathematics unit with permission from the School of Mathematics.

<sup>3</sup> These units need not be taken in First Year.

PHB222	Physics 2	2	12	5
SCB001	Learning at University	1	2	1
SCB222	Exploration of the Universe	2	12	5

#### INTRODUCTORY UNITS

CHB001	Introductory Chemistry	1,2	6	3
LSB001	Introductory Biology	1	6	3
PHB001	Introductory Physics	1,2	6	3

#### OTHER UNITS

Students may take units from any discipline within the University. Some other units offered at first level are listed below:

PHB150	Physics 1H	1	12	6
PHB263	Physics 2E	2	12	6

#### Schedule of Units – Second Level Units

CHB313	Analytical Chemistry 3	1,2	12	5
CHB333	Inorganic Chemistry 3	1	12	5
CHB352	Organic Chemistry 3	1	12	5
CHB372	Physical Chemistry 3	1	12	5
CHB423	Chemical Technology 4	2	12	5
CHB453	Organic Chemistry 4	2	12	5
CHB473	Physical Chemistry 4	2	12	5
ESB312	Mineralogy	1	12	5
ESB332	Geophysics	1	12	5
ESB342	Structural Geology and Geomechanics	1	12	5
ESB392	Field Techniques and Studies	1	12	5
ESB432	Geomorphology and Sedimentary Geology	2	12	5
ESB452	Geochemistry	2	12	5
ESB462	Lithology	2	12	5
ESB472	Mineral Deposits & Mine Geology	2	12	5
LSB302	Animal Biology 1	1	12	5
LSB308	Biochemistry 3	1	12	5
LSB318	Biochemical Methodology 3	1	12	5
LSB322	Plant Biology	1	12	5
LSB328	Microbiology 3	1	12	5
LSB332	Plant Physiology 1	1	12	5
LSB352	Population Ecology	1	12	5
LSB358	Physiology 2S	1	12	5
LSB362	Quantitative Methods in Life Science	1	12	5
LSB402	Animal Biology 2	2	12	5
LSB408	Biochemistry 4	2	12	5
LSB412	Applied Ecology A	2	12	5
LSB418	Biochemical Methodology 4	2	12	5
LSB422	Applied Ecology B	2	12	5
LSB428	Microbiology 4	2	12	5
LSB432	Genetics	2	12	5
LSB438	Immunology 4	2	12	5
LSB442	Plant Tissue Culture 1	2	12	5
LSB452	Marine Studies	2	12	5
LSB458	Physiology 3S	2	12	5
LSB468	Molecular Biology	2	12	5
MAB422	Topics in Mathematics	2	12	4
MAB432	Mathematics 3	1	12	4
MAB452	Mathematics 4	2	12	4
MAB601	Multivariable Calculus	1	12	4
MAB612	Differential Equations	2	12	4
MAB618	Computational Mathematics 2	1,2	12	4
MAB620	Finite Mathematics	2	12	4
MAB630	Linear Algebra & its Applications	1	12	4
MAB632	Mathematical Modelling	2	12	4
MAB637	Operations Research 1A	1,2	12	4
MAB638	Operations Research 1B	2	12	4
MAB641	Actuarial Mathematics	1	12	4

MAB642	Methods of Mathematical Economics	2	12	4
MAB647	Statistics 2A	1	12	4
MAB648	Statistics 2B	2	12	4
PHB322	Physics 3A	1	12	5
PHB332	Physics 3B	1	12	5
PHB342	Physics 3C	1	12	5
PHB422	Physics 4A	2	12	5
PHB432	Physics 4B	2	12	5
PHB462	Experimental Physics 4	2	12	5

#### OTHER UNITS

Students may take units from any discipline within the University. Some other units offered at second level are listed below.

PUB353	Consumer Food	1	12	4
PUB405	Human Nutrition	2	12	5

#### Cooperative Education Program

A registered student who has completed the equivalent of the first and second years of the standard full-time course, normally with a GPA of not less than 4.5 overall, may, at the discretion of the Cooperative Education Program Coordinator, undertake the Cooperative Education option. This involves 10-12 months of paid full-time employment in an approved industrial/commercial environment during which time the student is enrolled in the unit SCB100 Cooperative Education. On completion of the approved cooperative education placement the student resumes formal studies.

#### Schedule of Units – Third Level Units

CHB513	Instrumental Analysis 5	1	12	5
CHB523	Chemical Technology 5	1	12	5
CHB533	Inorganic Chemistry 5	1	12	5
CHB553	Organic Chemistry 5	1	12	5
CHB573	Physical Chemistry 5	1	12	5
CHB603	Project	2	12	5
CHB613	Instrumental Analysis 6	2	12	5
CHB623	Chemical Technology 6	2	12	5
CHB643	Applied Spectroscopy	2	12	5
CHB663	Environmental Chemistry	2	12	5
CHB693	Materials Chemistry	2	12	5
ESB512	Igneous & Metamorphic Petrology	1	12	5
ESB522	Hydrogeology	1	12	5
ESB542	Engineering & Environmental Geology	1	12	5
ESB582	Ore Genesis	1	12	5
ESB592	Geological Field Excursions	Y <sup>4</sup>	12	
ESB602	Geological Investigations	2	12	5
ESB652	Exploration Geoscience	2	12	5
ESB672	Fossil Fuel Geology	2	12	5
ESB682	Sedimentology & Basin Analysis	2	12	5
LSB502	Projects 1	1	12	5
LSB508	Biochemistry 5	1	12	5
LSB522	Population Management	1	12	5
LSB528	Microbial Physiology & Metabolism	1	12	5
LSB532	Population Genetics	1	12	3
LSB537	Genetic Engineering	1	12	5
LSB542	Plant Tissue Culture 2	1	12	5
LSB548	Biochemical Separations	2	12	5
LSB552	Aquaculture 1	1	12	5
LSB558	Applied Physiology	1	12	5
LSB568	Electron Microscopy	2	12	5
LSB578	Virology	1	12	5
LSB582	Selected Topics 1	1	12	5

<sup>4</sup> Year long unit.

LSB592	Field Studies 2	1	12	5
LSB602	Projects 2	2	12	5
LSB608	Biochemistry 6	2	12	5
LSB612	Aquaculture 2	2	12	5
LSB618	Analytical Biochemistry 6	1	12	5
LSB622	Case Studies	2	12	5
LSB628	Applied Microbiology	2	12	5
LSB632	Plant Physiology 2	2	12	5
LSB637	Molecular Genetics	2	12	5
LSB648	Microbial Technology	2	12	5
LSB652	Biological Resources	2	12	5
LSB658	Clinical Physiology	2	12	5
LSB682	Selected Topics 2	2	12	5
MAB906	Topics in Analysis	1	12	4
MAB907	Statistics 3A	1	12	4
MAB908	Statistics 3B	2	12	4
MAB911	Computational Mathematics 3A	1	12	4
MAB912	Continuum Modelling	1	12	4
MAB913	Computational Mathematics 3B	2	12	4
MAB927	Operations Research 2A	1	12	4
MAB928	Operations Research 2B	2	12	4
MAB929	Time Series & Statistical Forecasting	2	12	4
MAB933	Mathematical Biology	1	12	4
MAB941	Mathematical Modelling in Economics	1	12	4
MAB942	Optimisation Methods	1	12	4
MAB960	Project Work	1,2	12	4
MAB970	Probability Theory & Stochastic Processes	1	12	4
MAB971	Advanced Mathematics of Finance	2	12	4
MAB973	Partial Differential Equations	2	12	4
MAB974	Sampling & Survey Techniques	2	12	4
PHB512	Project	1,2	12	5
PHB522	Applied Quantum Mechanics	1	12	5
PHB532	Electromagnetic Field Theory	1	12	5
PHB562	Physical Methods of Analysis	1	12	5
PHB622	Solid State Physics	2	12	5
PHB632	Nuclear & Particle Physics	2	12	5
PHB642	Applied Radiation & Health Physics	2	12	5
PHB662	Topics in Physics	1	12	5
SCB510	Introduction to Quality Management	1	12	4

#### OTHER UNITS

Students may take units from any discipline within the University. One other unit offered at third level is:

PUB631	Nutritional Biochemistry	2	12	5
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### ■ Bachelor of Applied Science (Applied Chemistry) (CH32)

**Location:** Gardens Point campus

**Course Duration:** 3 years full-time, 6 years part-time

**Total Credit Points:** 288 (minimum)

**Standard Credit Points/Full-Time Semester:** 48

**Course Coordinator:** Mr Eric O'Reilly

#### Full-Time Course Structure

Credit Points	Contact Hrs/Wk
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**Note:** It is strongly recommended that students also undertake the unit SCB001 Learning at University in their first semester.

#### Year 1, Semester 1

CHB173	Chemistry 1A	12	6
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CHB183	Chemistry 1B	12	6
MAB212	Mathematics 1	12	4
PHB122	Physics 1	12	5
<b>Year 1, Semester 2</b>			
CHB213	Concepts of Analytical Chemistry	12	5
CHB283	Chemistry 2A	12	5
CHB253	Chemistry 2B	12	5
MAB237	Statistics	12	4
<b>Year 2, Semester 1</b>			
CHB313	Analytical Chemistry 3	12	5
CHB333	Inorganic Chemistry 3	12	5
CHB353	Organic Chemistry 3A	12	5
CHB373	Physical Chemistry 3A	12	5
<b>Year 2, Semester 2</b>			
CHB423	Chemical Technology 4	12	5
CHB453	Organic Chemistry 4	12	5
CHB473	Physical Chemistry 4	12	5
CSB263	Computing	12	4
<b>Year 3, Semester 1</b>			
CHB513	Instrumental Analysis 5	12	5
CHB523	Chemical Technology 5	12	5
Two of:			
CHB533	Inorganic Chemistry 5	12	5
CHB553	Organic Chemistry 5	12	5
CHB573	Physical Chemistry 5	12	5
	Elective Unit	12	
<b>Year 3, Semester 2</b>			
CHB613	Instrumental Analysis 6	12	5
CHB623	Chemical Technology 6	12	5
CHB693	Materials Chemistry	12	5
One of:			
CHB603	Project	12	5
CHB643	Applied Spectroscopy	12	5
CHB653	Applied Biological Chemistry	12	5
CHB663	Environmental Chemistry	12	5
	Elective Unit	12	

### Cooperative Education Program

A registered student who has completed the equivalent of the first and second years of the standard full-time course, normally with a GPA of not less than 4.5 overall, may, at the discretion of the Cooperative Education Program Coordinator, undertake the Cooperative Education option.

This involves 10 – 12 months of paid full-time employment in an approved industrial/commercial environment during which time the student is enrolled in the unit SCB100 Cooperative Education. On completion of the approved industrial experience the student resumes formal studies.

### Part-Time Course Structure

Credit Points	Contact Hrs/Wk
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**Note:** It is strongly recommended that students also undertake the unit SCB001 Learning at University in their first semester.

### Year 1, Semester 1

CHB173	Chemistry 1A	12	6
PHB122	Physics 1	12	5

**Year 1, Semester 2**

CHB183	Chemistry 1B	12	6
MAB212	Mathematics 1	12	4

**Year 2, Semester 1**

CHB283	Chemistry 2A	12	5
MAB237	Statistics	12	4

**Year 2, Semester 2**

CHB213	Concepts of Analytical Chemistry	12	5
CHB253	Chemistry 2B	12	5

**Year 3, Semester 1**

CHB353	Organic Chemistry 3A	12	5
CHB373	Physical Chemistry 3A	12	5

**Year 3, Semester 2**

CHB453	Organic Chemistry 4	12	5
CHB473	Physical Chemistry 4	12	5

**Year 4, Semester 1**

CHB313	Analytical Chemistry 3	12	5
CHB333	Inorganic Chemistry 3	12	5

**Year 4, Semester 2**

CHB423	Chemical Technology 4	12	5
CSB263	Computing	12	4

**Year 5, Semester 1**

CHB513	Instrumental Analysis 5	12	5
CHB523	Chemical Technology 5	12	5

**Year 5, Semester 2**

CHB613	Instrumental Analysis 6	12	5
CHB623	Chemical Technology 6	12	5

**Year 6, Semester 1**

Two of:			
CHB533	Inorganic Chemistry 5	12	5
CHB553	Organic Chemistry 5	12	5
CHB573	Physical Chemistry 5	12	5
	Elective Unit	12	

**Year 6, Semester 2**

CHB693	Materials Chemistry	12	5
One of:			
CHB603	Project	12	5
CHB653	Applied Biological Chemistry	12	5
CHB663	Environmental Chemistry	12	5
	Elective Unit	12	

**Note:** It is not intended that all Chemistry elective units will be offered. Those units offered in any one year will be determined by student demand.

## ■ Bachelor of Applied Science (Mathematics) (MA34)

**Location:** Gardens Point campus

**Course Duration:** 3 years full-time, 6 years part-time

**Total Credit Points:** 288

**Standard Credit Points/Full-Time Semester:** 48

**Course Coordinator:** Mr Clif Bothwell

## Course Requirements

A student selects units from the list given below, having regard to specified prerequisites and co-requisites, and must complete:

- (i) all units from List A
- (ii) at least 36 credit points from List B
- (iii) at least 144 credit points from Lists C and D with at least 48 credit points from List D
- (iv) a minimum of 288 credit points.

List A		Semester Offered	Credit Points	Contact Hrs/Wk
CSB155	Introduction to Computing	1,2	12	4
MAB301	Calculus and Analysis A	1,2	12	4
MAB303	Algebra and Analysis B	1,2	12	4
MAB347	Statistics 1A	1,2	12	4
List B				
MAB304	Calculus and Vector Algebra	1,2	12	4
MAB321	Computational Mathematics 1	1,2	12	4
MAB342	Mathematics of Finance	1,2	12	4
MAB348	Statistics 1B	1,2	12	4
List C				
MAB601	Multivariable Calculus	1	12	4
MAB612	Differential Equations	2	12	4
MAB618	Computational Mathematics 2	1,2	12	4
MAB620	Finite Mathematics	2	12	4
MAB630	Linear Algebra & its Applications	1	12	4
MAB632	Mathematical Modelling	2	12	4
MAB637	Operations Research 1A	1,2	12	4
MAB638	Operations Research 1B	2	12	4
MAB641	Actuarial Mathematics	1	12	4
MAB642	Methods of Mathematical Economics	2	12	4
MAB647	Statistics 2A	1	12	4
MAB648	Statistics 2B	2	12	4
	Elective Units [a maximum total of 72 credit points with not more than 48 at first level]	1,2	8-12ea	3-6ea
List D				
MAB906	Topics in Analysis	1	12	4
MAB907	Statistics 3A	1	12	4
MAB908	Statistics 3B	2	12	4
MAB911	Computational Mathematics 3A	1	12	4
MAB912	Continuum Modelling	1	12	4
MAB913	Computational Mathematics 3B	2	12	4
MAB927	Operations Research 2A	1	12	4
MAB928	Operations Research 2B	2	12	4
MAB929	Time Series & Statistical Forecasting	2	12	4
MAB933	Mathematical Biology	1	12	4
MAB941	Mathematical Modelling in Economics	1	12	4
MAB942	Optimisation Methods	1	12	4
MAB960	Project Work	1,2	12	4
MAB970	Probability Theory & Stochastic Processes	1	12	4
MAB971	Advanced Mathematics of Finance	2	12	4
MAB973	Partial Differential Equations	2	12	4
MAB974	Sampling & Survey Techniques	2	12	4
SCB510	Introduction to Quality Management	1	12	4

## Cooperative Education Program

A registered student who has completed the equivalent of the first and second years of the standard full-time course, normally with a GPA of not less than 4.5 overall, may, at the



discretion of the Cooperative Education Program Coordinator, undertake the Cooperative Education option.

This involves 10-12 months of paid full-time employment in an approved industrial/commercial environment during which time the student is enrolled in the unit SCB100 Cooperative Education. On completion of the approved Cooperative Education placement the student resumes formal studies.

## ■ Bachelor of Applied Science (Medical Laboratory Science) (LS36)

**Location:** Gardens Point campus

**Course Duration:** 3 years full-time, 6 years part-time

**Total Credit Points:** 288

**Standard Credit Points/Full-Time Semester:** 48

**Course Coordinator:** Ms Pam Stallybrass

### Professional Recognition

Graduates are immediately eligible for graduate membership of the Australian Institute of Medical Scientists and will have completed the academic requirements for admission as associate members.

### Special Course Requirements

Students in the part-time program should be aware that they are required to attend much of their program during the day.

Students are required to undertake a two to four week work experience program in a practising pathology laboratory. This takes place at the end of the second year full-time and in a suitable vacation period during the part-time program. This is a requirement for the unit LSB480 Professional Practice.

### Full-Time Course Structure

		Credit Points	Contact Hrs/Wk
<b>Year 1, Semester 1</b>			
CHB142	Chemistry 1	12	6
LSB118	Introduction to Life Science	12	6
LSB150	Human Anatomy	12	5
PHB150	Physics 1H	12	6
<b>Year 1, Semester 2</b>			
CHB242	Chemistry 2	12	6
LSB238	Cell & Molecular Biology 1	12	5
LSB250	Human Physiology	12	6
LSB260	Quantitative Methods in Life Science	12	5
<b>Year 2, Semester 1</b>			
CHB382	Chemistry 3	4	2
LSB300	Microbiology 3	8	4
LSB308	Biochemistry 3	12	5
LSB310	Quantitative Laboratory Technology 3	8	4
LSB340	Physiology 3	8	4
LSB370	Disease Processes 3	4	2
<b>Year 2, Semester 2</b>			
LSB400	Microbiology 4	8	4
LSB408	Biochemistry 4	12	5
LSB430	Immunology 4	8	4

LSB437	Molecular Biology	8	4
LSB450	Haematology 4	8	4
LSB460	Histopathology 4	8	4
LSB480	Professional Practice		2-4 wks
<b>Year 3, Semester 1</b>			
LSB500	Microbiology 5	16	7
LSB520	Clinical Biochemistry 5	8	4
LSB530	Immunology 5	8	4
LSB550	Haematology 5	8	4
LSB560	Histopathology 5	8	4
<b>Year 3, Semester 2</b>			
LSB600	Clinical Bacteriology 6	16	7
LSB620	Clinical Biochemistry 6	8	4
LSB630	Immunohaematology 6	8	4
LSB650	Haematology 6	8	4
LSB660	Histopathology 6	8	4
<b>Part-Time Course Structure</b>			
<b>Year 1, Semester 1</b>			
CHB142	Chemistry 1	12	6
LSB150	Human Anatomy	12	5
<b>Year 1, Semester 2</b>			
CHB242	Chemistry 2	12	6
LSB260	Quantitative Methods in Life Science	12	5
<b>Year 2, Semester 1</b>			
ISB382	Microcomputer Applications	8	3
LSB300	Microbiology 3	8	4
PHB150	Physics 1H	12	6
<b>Year 2, Semester 2</b>			
PHB262	Physics 2L	8	4
LSB260	Quantitative Methods in Life Science	12	5
<b>Year 3, Semester 1</b>			
CHB382	Chemistry 3	4	2
LSB308	Biochemistry 3	12	5
LSB310	Quantitative Laboratory Technology 3	8	4
<b>Year 3, Semester 2</b>			
LSB400	Microbiology 4	8	4
LSB408	Biochemistry 4	12	5
LSB437	Molecular Biology	8	4
<b>Year 4, Semester 1</b>			
LSB340	Physiology 3	8	4
LSB370	Disease Processes 3	4	2
<b>Year 4, Semester 2</b>			
LSB430	Immunology 4	8	4
LSB450	Haematology 4	8	4
LSB460	Histopathology 4	8	4
LSB480	Professional Practice		2-4 wks
<b>Year 5, Semester 1</b>			
LSB520	Clinical Biochemistry 5	8	4
LSB550	Haematology 5	8	4
LSB560	Histopathology 5	8	4
<b>Year 5, Semester 2</b>			
LSB620	Clinical Biochemistry 6	8	4
LSB650	Haematology 6	8	4
LSB660	Histopathology 6	8	4

**Year 6, Semester 1**

LSB530	Immunology 5	8	4
LSB600	Clinical Bacteriology 6	16	7

**Year 6, Semester 2**

LSB500	Microbiology 5	16	7
LSB630	Immunohaematology 6	8	4

## ■ Bachelor of Applied Science (Medical Radiation Technology) (PH38)

With majors in: Medical Imaging Technology and Radiotherapy Technology

**Location:** Gardens Point campus

**Course Duration:** 3 years full-time

**Total Credit Points:** 288

**Standard Credit Points/Full-Time Semester:** 48

**Course Coordinator:** Associate Professor Brian J Thomas

**Coordinators:**

Medical Imaging Technology Major: Ms Pam Rowntree

Radiotherapy Technology Major: Ms Jan Veitch

**Conversion Program**

A program to allow holders of an associate diploma or diploma to upgrade to degree level is offered in both majors. Refer to PH90 for course details.

**Course Structure**

The course has been reaccredited, the following program will operate from 1995. (Subject to final approval.)

<b>Full-Time Course Structure (Commencing students)</b>		<b>Credit Points</b>	<b>Contact Hrs/Wk</b>
<b>Year 1, Semester 1</b>			
COMMON UNITS			
LSB141	Anatomy 1	10	4
MAB151	Quantitative Techniques	4	2
NSB201	Principles of Patient Care	4	2
PHB111	Physics 1B	8	3
PHB178	Principles of Medical Radiations	12	6
SSB910	Introductory Psychology for Health Professionals	4	2
<b>Year 1, Semester 2</b>			
COMMON UNITS			
LSB221	Introduction to Pathology	8	3
LSB241	Anatomy 2	10	4
PHB272	Radiation Physics 1	12	5
MEDICAL IMAGING TECHNOLOGY MAJOR			
PHB275	Processing Technology	4	2
PHB276	General Radiography 1	12	6
PHB278	General Radiography Practice 1	8	3
RADIOTHERAPY TECHNOLOGY MAJOR			
PHB286	Treatment Planning 1	12	6
PHB287	Megavoltage Therapy 1	8	4

## Full-time Course Structure (Continuing Students)

### Year 2, Semester 1

#### COMMON UNITS

LSB321	Systematic Pathology	8	3
LSB341	Regional & Sectional Anatomy	8	4

#### MEDICAL IMAGING TECHNOLOGY MAJOR

PHB373	Nuclear Medicine Imaging 1	4	2
PHB374	Radiographic Equipment 1	6	3
PHB376	General Radiography 2	12	5
PHB379	Clinical Radiography 2	10	5

#### RADIOTHERAPY TECHNOLOGY MAJOR

PHB382	Radiotherapy Physics 1	4	2
PHB386	Treatment Planning 2	8	4
PHB387	Megavoltage Therapy 2	10	5
PHB389	Clinical Radiotherapy 2	10	5

### Year 2, Semester 2

#### COMMON UNITS

PHB475	Medical Radiation Computing 1	8	3
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#### MEDICAL IMAGING TECHNOLOGY MAJOR

LSB441	Imaging Anatomy	8	4
PHB473	Medical Ultrasound	4	2
PHB474	Radiographic Equipment 2	4	2
PHB476	Special Procedures	8	3
PHB479	Clinical Radiography 3	8	4
PHB573	Digital Imaging Modalities	6	2

#### RADIOTHERAPY TECHNOLOGY MAJOR

PHB481	Dosimetry	6	3
PHB482	Radiotherapy Physics 2	6	3
PHB484	Principles of Treatment 1	6	3
PHB487	Megavoltage Therapy 3	10	4
PHB489	Clinical Radiotherapy 3	8	4
PHB585	Computer Assisted Treatment Planning 1	8	3

### Year 3, Semester 1

#### COMMON UNITS

PHB471	Radiation Physics 2	4	2
PHB575	Medical Radiation Computing 2	8	3
PHB672/1	Project	6	

#### MEDICAL IMAGING TECHNOLOGY MAJOR

LSB421	Imaging Pathology	4	2
PHB572	Image Recording & Evaluation	4	2
PHB574	Quality Assurance in Medical Imaging	6	3
PHB576	Advanced Radiographic Technique 1	12	6
PHB578	Image Interpretation	4	2
PHB579	Clinical Radiography 4	8	4

#### RADIOTHERAPY TECHNOLOGY MAJOR

PHB584	Principles of Treatment 2	4	2
PHB587	Orthovoltage & Superficial Therapy	10	4
PHB589	Clinical Radiotherapy 4	12	6
PHB685	Computer Assisted Treatment Planning 2	8	4

### Year 3, Semester 2

#### COMMON UNITS

PHB671	Radiation Biology	4	2
PHB672/2	Project	6	
SSB918	Counselling for Health Professionals	4	2

<b>MEDICAL IMAGING TECHNOLOGY MAJOR</b>			
PHB676	Advanced Radiographic Technique 2	8	3
PHB679	Clinical Radiography 5	14	6
Select one of the following units:			
PHB680	Nuclear Medicine Imaging 2	10	5
PHB681	Computed Tomography Imaging	10	5
<b>RADIOTHERAPY TECHNOLOGY MAJOR</b>			
PHB583	Complementary & Evolving Techniques	6	3
PHB683	Oncological Imaging	6	3
PHB687	Specialised Radiotherapy Technique 2	10	4
PHB689	Clinical Radiotherapy 5	8	4

## ■ Bachelor of Applied Science (Medical Radiation Technology) (PH90)

**Conversion Course** with majors in: Medical Imaging Technology and Radiotherapy Technology

**Location:** Gardens Point campus

**Course Duration:** 2 years part-time for holders of a Diploma in Radiography (QUT) or equivalent or 3 years part-time for holders of an Associate Diploma in Radiography (QUT) or equivalent. The programs are also available over half the duration mentioned above in full-time mode.

**Total Credit Points:** 96 (diploma holders); 144 (associate diploma holders).

**Standard Credit Points/Part-Time Semester:** 24

**Course Coordinator:** Associate Professor Brian Thomas

### Coordinators:

Medical Imaging Technology Major: Ms Pam Rowntree

Radiotherapy Technology Major: Ms Jan Veitch

<b>Part-Time Course Structure for Diploma Holders (for commencing students)</b>		<b>Credit Points</b>	<b>Contact Hrs/Wk</b>
<b>Year 1, Semester 1</b>			
COMMON UNITS			
LSB321	Systematic Pathology	8	3
LSB341	Regional & Sectional Anatomy	8	4
MAB151	Quantitative Techniques	4	2
<b>Year 1, Semester 2</b>			
COMMON UNITS			
LSB441	Imaging Anatomy	8	4
PHB475	Medical Radiation Computing 1	8	3
<b>Part-Time Course Structure for Diploma Holders (for continuing students)</b>			
<b>Year 2, Semester 1</b>			
COMMON UNITS			
PHB575	Medical Radiation Computing 2	8	3
PHB673/1	Project	2	1
<b>MEDICAL IMAGING TECHNOLOGY MAJOR</b>			
LSB421	Imaging Pathology	4	2
PHB571	Quality Assurance in Medical Imaging	6	3
PHB578	Image Interpretation	4	2

RADIOTHERAPY TECHNOLOGY MAJOR			
PHB685	Computer Assisted Treatment Planning 2	8	4

### Year 2, Semester 2

COMMON UNIT			
PHB673/2	Project	6	

MEDICAL IMAGING TECHNOLOGY MAJOR			
PHB670	Advanced Radiographic Practice 2	20	4

Select one of the following units:

PHB680	Nuclear Medicine Imaging 2	10	5
PHB681	Computed Tomography Imaging	10	5

RADIOTHERAPY TECHNOLOGY MAJOR			
PHB687	Specialised Radiotherapy Technique 2	10	4
PHB889	Advanced Radiotherapeutic Practice	20	4

### Part-Time Course Structure for Associate Diploma Holders (for commencing students)

#### Year 1, Semester 1

COMMON UNIT			
LSB321	Systematic Pathology	8	3
LSB341	Regional & Sectional Anatomy	8	4

MEDICAL IMAGING TECHNOLOGY MAJOR			
PHB500	Advanced Imaging Practice 1	14	4

RADIOTHERAPY TECHNOLOGY MAJOR			
MAB151	Quantitative Techniques	4	2

#### Year 1, Semester 2

COMMON UNIT			
LSB441	Imaging Anatomy	8	4

MEDICAL IMAGING TECHNOLOGY MAJOR			
PHB473	Medical Ultrasound	4	2
PHB573	Digital Imaging Modalities	6	

RADIOTHERAPY TECHNOLOGY MAJOR			
PHB475	Medical Radiation Computing 1	8	3
PHB585	Computer Assisted Treatment Planning 1	8	4

### Part-Time Course Structure for Associate Diploma Holders (for continuing students)

#### Year 2, Semester 1

MEDICAL IMAGING TECHNOLOGY MAJOR			
LSB341	Regional & Sectional Anatomy	8	4
LSB421	Imaging Pathology	4	2
MAB151	Quantitative Techniques	4	2

RADIOTHERAPY TECHNOLOGY MAJOR			
LSB321	Systematic Pathology	8	3
PHB471	Radiation Physics 2	4	2
PHB575	Medical Radiation Computing 2	8	3

#### Year 2, Semester 2

MEDICAL IMAGING TECHNOLOGY MAJOR			
LSB441	Imaging Anatomy	8	4
PHB475	Medical Radiation Computing 1	8	3
PHB679	Clinical Radiography 5	14	

<b>RADIOTHERAPY TECHNOLOGY MAJOR</b>		
PHB583	Complementary & Evolving Techniques	6 3
PHB671	Radiation Biology	4 2
PHB683	Oncological Imaging	6 3
<b>Year 3, Semester 1</b>		
<b>COMMON UNIT</b>		
PHB673/1	Project	2 1
<b>MEDICAL IMAGING TECHNOLOGY MAJOR</b>		
PHB571	Quality Assurance in Medical Imaging	6 3
PHB575	Medical Radiation Computing 2	8 3
PHB578	Image Interpretation 1	4 2
<b>RADIOTHERAPY TECHNOLOGY MAJOR</b>		
PHB685	Computer Assisted Treatment Planning 2	8 4
PHB889	Advanced Radiotherapeutic Practice 2	20 4
<b>Year 3, Semester 2</b>		
<b>COMMON UNIT</b>		
PHB673/2	Project	6
<b>MEDICAL IMAGING TECHNOLOGY MAJOR</b>		
PHB670	Advanced Radiotherapeutic Practice 2	20 4
Select one of the following units:		
PHB680	Nuclear Medicine Imaging 2	10 5
PHB681	Computed Tomography Imaging	10 5
<b>RADIOTHERAPY TECHNOLOGY MAJOR</b>		
PHB687	Specialised Radiotherapy Technique 2	10 4

## ■ Associate Degree in Applied Science (Biology) Associate Degree in Applied Science (Chemistry) (SC12)

**Location:** Gardens Point campus

**Course Duration:** 2 years full-time, 4 years part-time

**Total Credit Points:** 192

**Standard Credit Points/Full-Time Semester:** 48

**Course Coordinator:** Dr Graham Smith

<b>Full-Time Course Structure (Year 1, Semester 1 common to both Majors)</b>		<b>Credit Points</b>	<b>Contact Hrs/Wk</b>
<b>Year 1, Semester 1</b>			
CHA111	Laboratory Techniques	8	3
CHA145	Introductory Chemistry	8	3
LSX110	Introductory Biology	8	3
LSX111	Microscopy Techniques	8	3
MAA251	Statistics & Data Processing	8	3
PHA154	Introductory Physics	8	3
<b>BIOLOGY MAJOR</b>			
<b>Year 1, Semester 2</b>			
CHA218	Analytical Chemistry 1	8	3
CHA240	Instrumental Techniques	8	3
LSX210	Biology B	8	3
LSX211	Cell Structure & Function	8	3
LSX212	Biological Data Handling	8	3
LSX213	Introductory Biochemistry	8	3

### Year 2, Semester 1

CHA442	Introduction to Occupational Safety	4	2
LSX310	Introduction to Bioculture	8	3
LSX311	Computer Applications in Biology	8	3
LSX312	Animal & Plant Techniques	12	4
Plus two elective units selected from:			
LSX313	Taxonomy	8	3
LSX316	Hydrobiological Techniques	8	3
	Other approved Elective Units		

### Year 2, Semester 2

LSX223	Microbiology 2	8	3
LSX410	Environmental Biology	8	3
LSX411	Population Biology	8	3
LSX412	Field Techniques	8	3
LSX413	Applications in Electron Microscopy	8	3
Plus one elective unit selected from:			
CSA259	Introduction to Computing	8	2
	Any other approved Elective Unit		

### CHEMISTRY MAJOR

#### Year 1, Semester 2

CHA218	Analytical Chemistry 1	8	3
CHA219	Qualitative Analysis	6	3
CHA230	Chemistry of Inorganic Materials	4	2
CHA240	Instrumental Techniques	8	3
CHA250	Organic Chemistry 1	8	3
CHA270	Physical Chemistry 1	8	3
CSA259	Introduction to Computing	8	2

#### Year 2, Semester 1

CHA318	Instrumental Analytical Chemistry	8	4
CHA319	Analytical Chemistry 2	6	3
CHA320	Chemical Process Principles 1	8	3
CHA350	Organic Chemistry 2	8	3
CHA370	Physical Chemistry 2	6	2
CHA442	Introduction to Occupational Safety	4	2

Plus one elective unit selected from:

ESA310	Geology	8	3
LSX123	Microbiology 1	8	3
	Any other approved Elective Unit		

#### Year 2, Semester 2

CHA368	Industrial Chemistry	8	3
CHA410	Computers in Chemistry	8	3
CHA550	Organic Chemistry 3	8	3
CHA610	Industrial Analysis	8	3
CHA670	Physical Chemistry 3	8	3

Plus one elective unit selected from:

LSX213	Introductory Biochemistry	8	3
LSX223	Microbiology 2	8	3
	Any other approved Elective Unit		

### Part-Time Course Structure

Part-time programs can be organised in consultation with the Course Coordinator. Refer to the full-time program for semesters in which units are offered. Day release from employment will be required for most units.

**Notes:** Students should discuss their choice of elective units with the Course Coordinator.

Students in the Biology Major with relevant technical experience may seek total or partial exemption from one or more of the elective units of the course.



Students participate in excursions and field work where these form part of the curriculum. Occasionally field work may be scheduled at weekends or during University recess periods.

## ■ Associate Degree in Clinical Techniques (LS12)

With elective units in: Laboratory Techniques and Anaesthetic Techniques

**Location:** Gardens Point campus

**Course Duration:** 2 years full-time, 4 years part-time

**Total Credit Points:** 192

**Standard Credit Points/Full-Time Semester:** 48

**Course Coordinator:** Ms Pam Stallybrass

### Professional Recognition

#### LABORATORY TECHNIQUES ELECTIVE UNITS

This program is recognised by both the Commonwealth and State Governments as a suitable employment qualification. Graduates from this program are recognised by the Australian Institute of Medical Scientists and are eligible to become intermediate members of this professional body.

#### ANAESTHETIC TECHNIQUES ELECTIVE UNITS

This program is endorsed by the College of Anaesthetists.

### Special Course Requirements

Students may undertake the course on a full-time or part-time basis. Part-time students are required to attend lectures during normal working hours.

#### Full-Time Course Structure

The first year is common to both Programs

		Credit Points	Contact Hrs/Wk
<b>Year 1, Semester 1</b>			
COX194	Communication Techniques	4	2
LSX121	Biological Chemistry 1	8	4
LSX122	Laboratory Instrumentation 1	8	4
LSX123	Microbiology 1	8	3
LSX124	Perspectives in Medicine	4	1
LSX125	Anatomy & Physiology 1	8	3
PHA154	Introductory Physics	8	3
<b>Year 1, Semester 2</b>			
LSX221	Biological Chemistry 2	8	4
LSX222	Laboratory Instrumentation 2	8	4
LSX223	Microbiology 2	8	3
LSX224	Pathology	8	2
LSX225	Anatomy & Physiology 2	8	3
PHA213	Medical Instrumentation 2	8	4

In Year 2 students should choose either the Laboratory Techniques Elective Units (Group A) or the Anaesthetic Techniques Elective Units (Group B).

#### LABORATORY TECHNIQUES PROGRAM

##### Year 2, Semester 1

MAA251	Statistics & Data Processing	8	3
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##### Group A Elective Units

Five of the following:

LSX320	Clinical Biochemical Techniques 3	8	4
LSX321	Clinical Microbiological Techniques 3	8	4

LSX322	Haematological Techniques 3	8	4
LSX323	Histological Techniques 3	8	4
LSX324	Immunological Techniques 3	8	4
LSX325	Cytological Techniques 3	8	4

### Year 2, Semester 2

CSA259	Introduction to Computing	8	2
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### Group A Elective Units

Five of the following:

LSX420	Clinical Biochemical Techniques 4	8	4
LSX421	Clinical Microbiological Techniques 4	8	4
LSX422	Haematological Techniques 4	8	4
LSX423	Histological Techniques 4	8	4
LSX424	Transfusion Techniques 4	8	4
LSX425	Cytological Techniques 4	8	4

## ANAESTHETIC TECHNIQUES PROGRAM

### Group B Elective Units

#### Year 2, Semester 1

LSX331	Foundations of Anaesthetic Techniques	12	5
LSX332	Physiology and Pharmacology	12	5
LSX333/1	Electronics and Computing	6	5
LSX334	Operating Room Equipment	12	5

#### Year 2, Semester 2

LSX333/2	Electronics & Computing	6	5
LSX431	Cardiac Care and Resuscitation	12	5
LSX432	Care of Respiratory Airways & Intensive Care	12	5
LSX433	Anaesthesia for Specialised Surgery	12	5
LSX434	Professional Practice	12	5

### Part-time Course Structure

In Year 3, Semester 1 students should choose either the Laboratory Techniques Elective Units or the Anaesthetic Techniques Elective Units.

## LABORATORY TECHNIQUES PROGRAM

Students enrolled in the part-time program are required to pass Introduction to Computing together with five Techniques 3 units and five Techniques 4 units over the four semesters.

### Year 3, Semester 1

LSX320	Clinical Biochemical Techniques 3	8	4
LSX321	Clinical Microbiological Techniques 3	8	4
LSX322	Haematological Techniques 3	8	4

### Year 3, Semester 2

CSA259	Introduction to Computing	8	2
LSX420	Clinical Biochemical Techniques 4	8	4
LSX421	Clinical Microbiological Techniques 4	8	4
LSX422	Haematological Techniques 4	8	4

### Year 4, Semester 1

LSX323	Histological Techniques 3	8	4
LSX324	Immunological Techniques 3	8	4
LSX325	Cytological Techniques 3	8	4

### Year 4 Semester 2

LSX423	Histological Techniques 4	8	4
LSX424	Transfusion Techniques 4	8	4
LSX425	Cytological Techniques 4	8	4

## ANAESTHETIC TECHNIQUES PROGRAM

**Note:** Students wishing to study the second year of the full-time course in a part-time program should consult the Course Coordinator.

## ■ Associate Diploma in Applied Science (Biology) Associate Diploma in Applied Science (Chemistry) (SC10)

**Course discontinued:** This course is replaced by Associate Degree in Applied Science (SC12).

**Location:** Gardens Point campus

**Course Duration:** 2 years full-time, 4 years part-time

**Total Credit Points:** 192

**Standard Credit Points/Full-Time Semester:** 48

**Course Coordinator:** Dr Graham Smith

Full-Time Course Structure		Credit Points	Contact Hrs/Wk
<b>BIOLOGY MAJOR</b>			
<b>Year 2, Semester 1</b>			
CHA442	Introduction to Occupational Safety	4	2
LSX310	Introduction to Bioculture	8	3
LSX311	Computer Applications in Biology	8	3
LSX312	Animal & Plant Techniques	12	4
Plus two elective units selected from:			
LSX313	Taxonomy	8	3
LSX316	Hydrobiological Techniques	8	3
	Other approved Elective Units		
<b>Year 2, Semester 2</b>			
LSX223	Microbiology 2	8	3
LSX410	Environmental Biology	8	3
LSX411	Population Biology	8	3
LSX412	Field Techniques	8	3
LSX413	Applications in Electron Microscopy	8	3
Plus one elective unit selected from:			
CSA259	Introduction to Computing	8	2
	Any other approved Elective Unit		
<b>CHEMISTRY MAJOR</b>			
<b>Year 2, Semester 1</b>			
CHA318	Instrumental Analytical Chemistry	8	4
CHA319	Analytical Chemistry 2	6	3
CHA320	Chemical Process Principles 1	8	3
CHA350	Organic Chemistry 2	8	3
CHA370	Physical Chemistry 2	6	2
CHA442	Introduction to Occupational Safety	4	2
Plus one elective unit selected from:			
ESA310	Geology	8	3
LSX123	Microbiology 1	8	3
	Any other approved Elective Unit		
<b>Year 2, Semester 2</b>			
CHA368	Industrial Chemistry	8	3
CHA410	Computers in Chemistry	8	3
CHA550	Organic Chemistry 3	8	3
CHA610	Industrial Analysis	8	3
CHA670	Physical Chemistry 3	8	3
Plus one elective unit selected from:			
LSX213	Introductory Biochemistry	8	3
LSX223	Microbiology 2	8	3
	Any other approved Elective Unit		

## Part-Time Course Structure

Part-time programs can be organised in consultation with the Course Coordinator. Refer to the full-time program for semesters in which units are offered. Day release from employment will be required for most units.

**Notes:** Students should discuss their choice of elective units with the Course Coordinator.

Students in the Biology Major with relevant technical experience may seek total or partial exemption from one or more of the elective units of the course.

Students participate in excursions and field work where these form part of the curriculum. Occasionally field work may be scheduled at weekends or during University recess periods.

## ■ Associate Diploma in Clinical Techniques (LS15)

With elective units in: Laboratory Techniques and Anaesthetic Techniques

**Course Discontinued:** This course is being phased out. There will be no further intakes. It is replaced by the Associate Degree in Clinical Techniques (LS12)

**Location:** Gardens Point campus

**Course Duration:** 2 years full-time, 4 years part-time

**Total Credit Points:** 192

**Standard Credit Points/Full-Time Semester:** 48

**Course Coordinator:** Ms Pam Stallybrass

### Professional Recognition

#### LABORATORY TECHNIQUES ELECTIVE UNITS

This program is recognised by both the Commonwealth and State Governments as a suitable employment qualification. Graduates from this program are recognised by the Australian Institute of Medical Scientists and are eligible to become intermediate members of this professional body.

#### ANAESTHETIC TECHNIQUES ELECTIVE UNITS

This program is endorsed by the College of Anaesthetists.

### Special Course Requirements

Students may undertake the course on a full-time or part-time basis. Part-time students are required to attend lectures during normal working hours.

### Full-Time Course Structure

#### LABORATORY TECHNIQUES PROGRAM

##### Year 2, Semester 1

MAA251 Statistics & Data Processing

	Credit Points	Contact Hrs/Wk
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8

3

##### Group A Elective Units

Five of the following:

LSX320 Clinical Biochemical Techniques 3

8

4

LSX321 Clinical Microbiological Techniques 3

8

4

LSX322 Haematological Techniques 3

8

4

LSX323 Histological Techniques 3

8

4

LSX324 Immunological Techniques 3

8

4

LSX325 Cytological Techniques 3

8

4

##### Year 2, Semester 2

CSA259 Introduction to Computing

8

2

**Group A Elective Units**

Five of the following:

LSX420	Clinical Biochemical Techniques 4	8	4
LSX421	Clinical Microbiological Techniques 4	8	4
LSX422	Haematological Techniques 4	8	4
LSX423	Histological Techniques 4	8	4
LSX424	Transfusion Techniques 4	8	4
LSX425	Cytological Techniques 4	8	4

**ANAESTHETIC TECHNIQUES PROGRAM****Group B Elective Units****Year 2, Semester 1**

LSX331	Foundations of Anaesthetic Techniques	12	5
LSX332	Physiology and Pharmacology	12	5
LSX333/1	Electronics and Computing	6	5
LSX334	Operating Room Equipment	12	5

**Year 2, Semester 2**

LSX333/2	Electronics & Computing	6	5
LSX431	Cardiac Care and Resuscitation	12	5
LSX432	Care of Respiratory Airways & Intensive Care	12	5
LSX433	Anaesthesia for Specialised Surgery	12	5
LSX434	Professional Practice	12	5

**Part-time Course Structure**

In Year 3, Semester 1 students should choose either the Laboratory Techniques Elective Units or the Anaesthetic Techniques Elective Units.

**LABORATORY TECHNIQUES PROGRAM**

Students enrolled in the part-time program are required to pass Introduction to Computing together with five Techniques 3 units and five Techniques 4 units over the four semesters.

**Year 3, Semester 1**

LSX320	Clinical Biochemical Techniques 3	8	4
LSX321	Clinical Microbiological Techniques 3	8	4
LSX322	Haematological Techniques 3	8	4

**Year 3, Semester 2**

CSA259	Introduction to Computing	8	2
LSX420	Clinical Biochemical Techniques 4	8	4
LSX421	Clinical Microbiological Techniques 4	8	4
LSX422	Haematological Techniques 4	8	4

**Year 4, Semester 1**

LSX323	Histological Techniques 3	8	4
LSX324	Immunological Techniques 3	8	4
LSX325	Cytological Techniques 3	8	4

**Year 4 Semester 2**

LSX423	Histological Techniques 4	8	4
LSX424	Transfusion Techniques 4	8	4
LSX425	Cytological Techniques 4	8	4

**ANAESTHETIC TECHNIQUES PROGRAM**

**Note:** Students wishing to study the second year of the full-time course in a part-time program should consult the Course Coordinator.

