

FACULTY OF SCIENCE

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Courses Offered

- ASN273 Master of Applied Science
- PHN176 Master of Applied Science with Strands in Medical Physics and Medical Ultrasound
- CHN217 Master of Applied Science – Chemical Analysis
- IFM242 Graduate Diploma in Quality (see page 21)
- PHM271 Graduate Diploma in Applied Science
- ASJ226 Bachelor of Applied Science
- ASJ247 Bachelor of Applied Science (Honours)+
- CHJ129 Bachelor of Applied Science – Applied Chemistry
- ESJ132 Bachelor of Applied Science – Applied Geology*
- MAJ133 Bachelor of Applied Science – Mathematics
- PHJ248 Bachelor of Applied Science – Medical Radiation Technology
- PHK205 Diploma of Applied Science – Diagnostic Radiography*
- PHK206 Diploma in Applied Science – Therapeutic Radiography*
- ASL225 Associate Diploma in Applied Science

The Faculty

The Faculty of Science - which comprises the Departments of Applied Geology, Biology, Chemistry, and Physics, and the School of Mathematics - provides up-to-date educational programs with both practical emphasis and sound theoretical foundation. Hence, QUT science graduates are able to avail themselves of a range of satisfying career opportunities in widely diverse fields.

The Faculty maintains its pre-eminence through strong links with professional bodies, employers and allied groups, and through the continuing expertise of its staff. Close interaction between employers and academic staff is afforded by the co-operative education option available in the Faculty's degree level courses - it integrates academic studies with an extended period of paid industrial experience. The academic area also interacts with the community both in Australia and overseas through continuing education courses on a range of topics, and through applied research projects, consultancy activities and testing services based on expertise within the Faculty.

+ Honours strands are being phased in. Intending candidates should consult the Faculty office concerning the current offering.

* These courses are being phased out and intending students directed into other courses. Students re-enrolling after a break from study should consult the Head of the relevant department about the course program.

Technology transfer services offered by the Faculty are channelled through several research and development centres.

The Centre for Biological Population Management, in the Department of Biology, is developing new economic techniques and resources such as aquaculture and production of new plant varieties. Centre scientists have already made significant contributions to the agricultural industry world-wide by developing management strategies for the control of pest populations. The Centre also offers an environmental monitoring service.

The Centre for Analytical Science in the Department of Chemistry pioneered the joint acquisition/management of expensive research facilities with the other Brisbane universities. The Centre assists manufacturing industry with consulting/testing services not readily available elsewhere, and offers research/consulting activities including analytical method development, mass spectrometry, atomic spectroscopy, laboratory automation, corrosion and polymer science.

Consulting, research and technical services are also available to the mining and civil engineering industries through the Centre for Sedimentary and Environmental Geology based in the Department of Applied Geology. Its services include geotechnical investigations, petro-chemical analysis of geological material, environmental geochemistry, and specialised geological training programs for professionals.

The application of physics to clinical and occupational health internationally is fostered by the expertise available in the Faculty's Medical and Health Physics Centre, in the Department of Physics. Centre staff are active in many areas including new product development, improving the performance of existing medical instrumentation, environmental assessment including radiation monitoring, and technology transfer.

A Key Centre in Strategic Management through Quality has been established through the collaborative efforts of QUT's Business, Engineering and Science Faculties. Its activities include specialised courses, consulting services and specific research.

Course Structures

■ ASN273 Master 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 further education in research methods.
- to enable graduates employed in industry to undertake further education by research and thesis.
- to enable industrial organisations and other external agencies to sponsor a student research program under the control and supervision of the faculty, and thus to further relationships between the University and industry or other external agencies engaged in applied science, to their mutual advantage.

1. General Conditions

1.1 The Council of the Queensland University of Technology was established in 1989 under the Queensland University of Technology Act 1988.

- 1.2 The Council's power to approve recommendations from faculty academic boards regarding the registration, supervision and examination of research degree candidates and to develop policy and procedure relating to research degrees is exercised through a Research Management Committee which shall be a subcommittee of Academic Committee.
- 1.3 Research Management Committee has delegated responsibility for day to day administration of research master degree courses to faculty academic boards. Academic boards shall report biannually to Research Management Committee on progress made by research master degree candidates.
- 1.4 Unless the context otherwise indicates or requires, the words "academic board" and "faculty" shall refer to the faculty in which the candidate registers.
- 1.5 In order to qualify for the award of the degree of Master of Applied Science, a candidate must
 - have completed the approved course of study under the supervision prescribed by the Academic Board
 - have submitted, and the Academic Board have accepted, a thesis prepared under the supervision of the supervisor
 - have completed any other work prescribed by the Academic Board, and
 - submit to the Academic Board a declaration signed by the candidate that he/she has not been a candidate for another tertiary award without permission of the Academic Board during the term of enrolment.

2. Registration

- 2.1 Applications shall be accepted subject to the availability of facilities and supervision.
- 2.2 Applications may be lodged with the Registrar at any time.
- 2.3 The minimum academic qualifications for admission to a program leading to a Master of Applied Science, shall be
 - possession of a bachelor degree in applied science from the Queensland University of Technology, or
 - possession of an equivalent qualification, or
 - submission of such other evidence of qualifications as will satisfy the Academic Board that the applicant possesses the capacity to pursue the course of study.
- 2.4 Additional requirements for admission to a particular program may be laid down by the Academic Board.
- 2.5 In considering an applicant for registration the Academic Board shall, in addition to assessing the applicant's suitability, assess the proposed program and its relevance to the aims and objectives of the University.
- 2.6 A candidate may register either as a full-time or as a part-time student.
 - 2.6.1 To be registered as a full-time student, a candidate must be able to commit to the course not less than three-quarters of a normal working week, averaged over each year of candidacy. Such a student may not devote more than 300 hours annually to teaching activities, including preparation and marking.
 - 2.6.2 A candidate who is unable to devote to the course the proportion of time specified in Section 2.6.1 may register as a part-time student.
- 2.7 A candidate may be internal or external. An external candidate is one whose program of research and investigation is based at a place of employment or sponsoring institution. Normally, support of the sponsoring institution for the candidate's application is required for registration.

- 2.8 A candidate shall be registered initially in Stage 1 of the course unless exemption has been obtained (see 3.7 below).
- 2.9 The Academic Board may cancel a candidate's registration if, after consulting a candidate's supervisors and having taken account of all relevant circumstances, the Academic Board is of the opinion that the candidate either has effectively discontinued his/her studies or has no reasonable expectation of completing the course of study within the maximum time allowed (see Section 4).
- 2.10 A candidate whose registration has lapsed or has been cancelled and who wishes subsequently to re-enter the course to undertake a research program which is the same or essentially the same as the previous program may be re-admitted under such conditions as the Academic Board may prescribe.

3. Course of Study

- 3.1 A candidate for the degree of Master of Applied Science shall undertake a program of research and investigation on a topic approved by the Academic Board. All projects should be sponsored either by outside agencies such as industry, government authorities, or professional organisations, or by the University itself.
- 3.2 The program must be such as to enable the candidate to develop and demonstrate a level of scientific competence significantly higher than that expected of a first degree graduate. The required competence normally would include mastery of relevant techniques, investigatory skills, critical thinking, and a high level of knowledge in the specialist area.
- 3.3 The program consists of two parts, Stage 1 and Stage 2. Progression to Stage 2 will be dependent on satisfactory completion of Stage 1 or special permission from the Academic Board. Stage 1 will comprise a program of assessed coursework as defined in 3.4 and 3.5 as appropriate for each candidate. Stage 2 will comprise a program of supervised research and investigation as indicated in 3.1 and 3.2.
- 3.4 Coursework at masters level may be conducted in a number of ways such as
 - advanced lecture courses
 - seminars in which faculty and students present critical studies of selected problems within the subject field
 - independent study or reading courses, or
 - research projects conducted under faculty supervision.

In all cases, coursework will be based upon a formal syllabus setting out the educational outcomes expected from the course, a list of topics to be covered, the prescribed reading material and the method of assessment of progress through and at the end of the course.
- 3.5 A candidate shall be required to participate in and present seminars as considered appropriate by the Principal Supervisor. The candidate shall be notified of minimum attendance requirements at the time of acceptance of enrolment.
- 3.6 Stage 1 will normally occupy not more than half of the total period of registration and not more than 96 credit points.
- 3.7 Students entering the course with an honours degree or its equivalent or candidates with substantial relevant work experience will normally gain exemption from most or all of Stage 1 at the discretion of the Academic Board on the recommendation of the Head of Department/School.
- 3.8 An application for registration should set out systematically and fully the candidate's intended course of study. The description should include the area of study within which the candidate's course lies, the coursework to be undertaken, the proposed title

of the thesis to be written, the aim of the proposed program of research and investigation, its background, the significance and possible application of the research program, and the research plan.

4. Period of Time for Completion of Course of Study

- 4.1 A full-time candidate who does not hold an honours degree appropriate to the course of study will normally be required to complete both Stage 1 and Stage 2, including submission of the thesis for examination as required in Stage 2, during a period of registration of twenty-four months. The corresponding period in the case of a part-time candidate shall be forty-eight months. In special cases the Academic Board may approve a shorter period.
- 4.2 On successful completion of Stage 1 (96 credit points), students with GPA of 5.0 or greater will be permitted to continue to Stage 2.
- 4.3 A holder of an honours degree appropriate to the course of study may submit the thesis for examination after not less than twelve months of registration in Stage 2 if a full-time student, or twenty-four months if a part-time student. Exemption from all or part of Stage 1 may be granted as indicated in 3.7 above. In special cases the Academic Board may approve a shorter period.
- 4.4 Where application is made for permission to extend the period within which the candidate may submit a thesis for examination, details of the candidate's progress shall be presented to the Academic Board together with the reasons for the delay in completing the work and the expected date of completion. Where the Academic Board agrees to an extension, it may set a limit to the maximum period of registration in the program.

5. Transfer of Registration

- 5.1 Where a candidate has undertaken part of a proposed course of study as a registered student in another institution, this period of registration may, on application in writing to the Academic Board at the time of application for registration, be counted towards the candidate's period of registration in the QUT course. The application must include details of the work already undertaken, the reasons for the transfer and the expected date of completion.
- 5.2 Applications for transfer normally should be submitted at least twelve months in advance of the probable date of submission of the thesis.

6. Supervision

- 6.1 For each candidate the Academic Board shall appoint one or more supervisors with appropriate experience provided that, where more than one supervisor is appointed, one shall be nominated as the Principal Supervisor and the others as Associate Supervisors.
- 6.2 In the case of an internal student, the Principal Supervisor normally shall be from the academic staff of the school/department where the student carries out the work.
- 6.3 In the case of an external student, the Principal Supervisor normally shall be from the academic staff of the school/department supporting the work and at least one Associate Supervisor shall be from the sponsoring organisation.
- 6.4 At the end of each six month period a student shall submit a report on the work undertaken to the Principal Supervisor and the Principal Supervisor shall submit a report to the Academic Board on the student's work. This report shall be seen by the candidate before submission to the Academic Board.

7. Place and Conditions of Work

- 7.1 The research program must normally be carried out under supervision in a suitable environment in Australia.
- 7.2 The Academic Board shall not admit a candidate to undertake a program of research based at the University unless it has received a statement from the Head of School/Department and/or Director of Centre in which the study is proposed that, in his/her opinion, the applicant is a fit person to undertake a research program leading to the master degree, that the program is supported, and that the School/Department/Centre is willing to undertake the responsibility of supervising the applicant's work.
- 7.3 The Academic Board shall not admit a candidate to undertake a research program based at a sponsoring establishment unless it has received:
- A statement from the employer or director of the sponsoring institution that the applicant will be provided with facilities to undertake the research project and that he/she is willing to accept responsibility for supervising the applicant's work, and
 - A statement from the Head of School/Department or Director of Centre in which the study is proposed that, in his/her opinion, the applicant is a fit person to undertake a research program leading to the master degree, that the program is supported, and that after examination of the proposed external facilities and supervision, the school/department is willing to accept the responsibility of supervising the work.

8. Thesis

- 8.1 In the form of presentation, availability and copyright, the thesis shall comply with the provisions of the document *Requirements for Presenting Theses*.
- 8.2 Not later than six months after confirmed registration the candidate shall submit the title of the thesis for approval by the Academic Board. After approval has been granted, no change shall be made except with the permission of the Academic Board.
- 8.3 The candidate shall give two months' notice of intention to submit the thesis. Such notice shall be accompanied by the appropriate fee, if any.
- 8.4 The thesis shall comply with the following requirements
- a significant portion of the work described must have been carried out subsequent to initial registration for the degree
 - it must describe a program of work carried out by the candidate, and must involve either an original contribution to knowledge or an original application of existing knowledge
 - it must reach a satisfactory standard of literary presentation
 - it shall be the candidate's own account of the work. Where work is carried out jointly with other persons, the academic board shall be advised of the extent of the candidate's contribution to the joint work
 - the thesis shall not contain as its main content any work or material which the student has previously submitted for another degree or similar award
 - supporting documents, such as published papers, may be submitted with the thesis if they have a bearing on the subject of the thesis, and
 - the thesis shall contain an abstract of not more than 300 words.
- 8.5 Except with the specific permission of the Academic Board the thesis must be presented in the English language. Such permission must be sought at the time of application for registration, and will not be granted solely on the grounds that the

candidate's ability to satisfy the examiners will be affected adversely by the requirement to present the thesis in English.

8.6 Subject to QUT's Intellectual Property policy, the copyright of the thesis is vested in the candidate.

8.7 Where a candidate or the sponsoring establishment wishes the thesis to remain confidential for a period of time after completion of the work, application for approval must be made to the Academic Board when the thesis is submitted. The period of confidentiality normally shall not exceed two years from the date on which the examiners recommend acceptance of the thesis, during which time the thesis will be held on restricted access in the QUT Library.

9. Examination of Thesis

9.1 The Academic Board shall appoint at least two examiners, of whom at least one shall be from outside the University. Normally examiners will be required to agree to read and report upon the thesis within two months of its receipt.

9.2 A candidate may be required to make an oral defence of the thesis.

9.3 On receipt of satisfactory reports from the examiners, and when the provisions of 7.1 have been fulfilled, the Academic Board shall recommend to Academic Committee that the candidate be awarded the degree.

9.4 If the examiners reports are conflicting, the Academic Board may, after appropriate consultation with the Principal Supervisor, seek advice from a further external examiner.

9.5 If, on the basis of the examiners' reports, the Academic Board does not recommend that the degree be awarded then it shall

- permit the student to resubmit the thesis within one year for re-examination, or
- cancel the student's registration.

■ PHN176 Master of Applied Science with Strands in Medical Physics and Medical Ultrasound

Course Duration: 4 semesters full-time or 8 semesters part-time (plus Summer Semester)

Total Credit Points: 192

Standard Credit Points/Full-Time Semester: 48

Course Co-ordinator: Dr Bob Treffene

Entry Requirements

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

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

To be eligible to enrol in the Medical Ultrasound Strand, 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 as a practising radiographer.

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

Course Requirements

MEDICAL PHYSICS STRAND

To complete Stage I, students must complete subjects selected from the list below, totalling 96 credit points. Subjects PHN157, PHN257, PHN357, PHN352, PHN354, PHN155, PHN156 are not available to students in the Medical Physics Strand.

MEDICAL ULTRASOUND STRAND

To complete Stage I, students must complete subjects selected from the list below totalling 108 credit points. Subjects PHN157, PHN257 and PHN357 are compulsory for students in the Medical Ultrasound Strand. Subject PHN402 is not available to students in the Medical Ultrasound Strand.

For both strands, progression to Stage II will be dependent upon satisfactory completion of Stage I or special permission of the Head of Department.

On successful completion of Stage I:

1. students with GPA <5 will normally graduate with a GradDipAppSc (Medical Physics or Medical Ultrasound); while
2. students with GPA \geq 5 will be permitted to
 - (a) graduate as above, or
 - (b) continue with Stage II (which is a further one year full-time or equivalent) involving a project leading to the award MAppSc.

Stage I		Credit Points	Contact Hrs/Wk
Autumn Semester			
PHN101	Analogue Electronics	6	2
PHN102	Introduction to Medical Statistics & Computing	6	2
PHN103	Radiation Physics I	6	2
PHN104	Radiation Physics II	8	3
PNN161	Anatomy & Physiology I	6	2
PHN202	Biomechanics	8	3
PHN204	Health & Occupational Physics	8	3
PHN206	Medical Imaging	8	3
PHN351	Ultrasound Equipment II	6	2
PHN352	Ultrasonic Examination in Cardiology	6	2
PHN353	Ultrasound in Medical Diagnosis	6	2
PHN354	Ultrasonic Examination of Head, Neck & Peripheral Organs	6	2
PHN357	Clinical Ultrasound III*	12	
Spring Semester			
PHN301	Microprocessors	8	3
PHN302	Instrumentation	8	3
PHN304	Medical Imaging Science	6	2
PNN165	Anatomy & Physiology II	8	3
PHN151	Physics of Ultrasound	6	2
PHN152	Cross-sectional Anatomy	6	2
PHN153	Ultrasound Equipment I	6	2
PHN154	Principles of Ultrasound Imaging	6	2

* No formal class attendance required.

PHN155	Ultrasonic Examination in Obstetrics/Gynaecology	6	2
PHN156	Ultrasonic Examination of the Abdomen	6	2
PHN402	Radiotherapy	6	2
PHN157	Clinical Ultrasound I*	12	
PHN405	Physiological Measurement	6	2
PHN407	Case Studies*	6	2

Summer Semester (10 weeks)

PHN257	Clinical Ultrasound II*	12	
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The three units PHN157, PHN257 and PHN357 are compulsory for students in the Medical Ultrasound Strand. Each unit involves 240 hours of clinical experience and students must successfully complete these units in the order PHN157, PHN257 and PHN357.

Stage II

Credit Points

PHN520-1	Project (F/T)	48
PHN520-2	Project (F/T)	48
PHN540-1	Project (P/T)	24
PHN540-2	Project (P/T)	24
PHN540-3	Project (P/T)	24
PHN540-4	Project (P/T)	24

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 Department 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 subject.

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

Enrolments in the Medical Physics Strand are accepted in February each year. Enrolments in the Medical Ultrasound Strand are accepted in July each year.

Medical Ultrasound students undertake Stage I Spring Semester subjects in their first semester of enrolment, and Stage I Autumn Semester subjects in their second semester of enrolment.

■ CHN217 Master of Applied Science – Chemical Analysis

From 1990 no new enrolments into this course will be accepted. New students are referred to the rules for ASN273 Master of Applied Science. Continuing students should refer to the course rules set out in the 1989 *Faculty of Science Handbook*.

* *No formal class attendance required.*

■ PHM271 Graduate Diploma In Applied Science with Strands in Medical Physics and Medical Ultrasound

No enrolments are accepted directly into this course.

For details see Course Rules for PHN176 Master of Applied Science with strands in Medical Physics and Medical Ultrasound.

■ ASJ226 Bachelor of Applied Science with Strands in Biology, Chemistry, Microbiology/Biochemistry, Geology, Mathematics, Physics

Course Duration: 6 semesters full-time, 12 semesters part-time

Total Credit Points: 288

Standard Credit Points/Full-Time Semester: 48

Course Co-ordinator: Dr Don Field

Special Course Requirements

1. To fulfil the requirements for the award of the degree, a student must complete subjects totalling at least 288 credit points, including a maximum of 120 credit points at first level, and comprised of major, sub-major and supporting studies. Major and sub-major studies are defined in Requirement 5.
2. 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 affecting any change of enrolment.
3. Students are normally expected to complete the course in minimum time. A full-time student will enrol in an average of 48 credit points per semester for six semesters, and a part-time student will complete the same number of credit points over twelve semesters.
4. A typical program of study* will consist of not less than 288 credit points, including a maximum of 120 credit points at first level and will include:
 - (a) major studies: A minimum total of 136 credit points, including a minimum of 48 credit points at third level and a maximum of 32 credit points at first level as specified in Requirement 5;
 - (b) sub-major studies: at least 64 credit points, including a minimum of 16 credit points at third level and a maximum of 16 credit points at first level as specified in Requirement 5; and
 - (c) supporting studies: subjects not limited by course rules (see Note 3 for details). Specified supporting subjects are required in some areas, especially at first level (see Specification of Majors Table below).
5. Major and sub-major studies are defined in terms of the discipline and the academic level at which subjects are offered:

*See Course Requirements Note 4.

(a) A major must be completed in one of the following discipline areas - biology, chemistry, microbiology/biochemistry, geology, mathematics, physics. Completion of a major consists of passing subjects totalling at least 136 credit points, of which no more than 32 credit points shall be at first level. At least 48 credit points must be completed at third level. The total credit points specified for each major are set out in Specification of Majors Table below, together with prescribed supporting studies.

(b) A sub-major may be completed in any approved area within the University. Completion of a sub-major consists of passing subjects totalling at least 64 credit points, of which no more than 16 credit points shall be at first level. Except in special circumstances and with the prior permission of the Dean, at least 16 credit points must be completed at third level.

Major and sub-major studies may be undertaken in the same or in closely related discipline areas.

6. Co-operative Education Option - one year's paid industrial experience.

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 Co-operative Education Program Co-ordinator, undertake the Co-operative 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 units Industrial Experience I (first semester) and Industrial Experience II (second semester). On completion of the approved industrial experience the student resumes formal studies.

Subject Schedules

Pre- and co-requisite subjects and incompatible subjects are shown in Outline of Subjects.

(A) = offered in Autumn Semester; (S) = offered in Spring Semester; (A/S) = offered in either semester; (Y) = offered all year long.

First Schedule - First Level Subjects

		Credit Points	Contact Hrs/Wk
BIOLOGY SUBJECTS			
BEB103	Biology IA (A)	8	3
BEB104	Biology IB (A)	6	3
BEB201	Cell Biology (S)	8	3
BEB207	Biological Systems (S)	8	3
CHEMISTRY SUBJECTS			
CHB101	Chemistry IA (A)	8	3
CHB102	Chemistry IB (A/S)	6	3
CHB201	Chemistry IIA (S)	8	3
CHB202	Chemistry IIB (S)	6	3
GEOLOGY SUBJECTS			
ESB101	Earth Science IA (A)	8	3
ESB102	Earth Science IB (A)	8	3
ESB201	Earth Science IIA (S)	8	3
ESB202	Earth Science IIB (S)	8	3
MATHEMATICS SUBJECTS			
MAB211	Mathematics IA (A/S)	8	3
MAB216	Discrete Mathematics (A)	8	3
MAB224	Mathematics IB (A/S)	8	3
MAB225	Mathematics IC (S)	8	3
MAB226	Mathematics ID (S)	8	3

MAB227	Statistics (A/S)	8	3
MICROBIOLOGY/BIOCHEMISTRY SUBJECT			
MSB101	Microbiology I (S)	6	3
PHYSICS SUBJECTS			
PHB110	Physics IA (A)	8	3
PHB111	Physics IB (A)	8	3
PHB210	Physics IIA (S)	8	3
PHB211	Physics IIB (S)	8	3
OTHER SUBJECTS			
ASB101	Study Support Skills (A) *	2	1
ASB200	Introductory Meteorology (S)	8	3
BEB149	Introductory Biology (A)	6	3
CHB001	Introductory Chemistry (A)	6	3
CMB106	Professional Communication (A/S)	6	3
CSB155	Introduction to Computing (A/S)	8	3
CSB283	Scientific Applications (S)	8	3
MNB154	Psychology (A/S)	9	3
PHB104	Introductory Physics (A)	6	3

and such other subjects as may be approved by the Faculty of Science Academic Board from time to time.

Second Schedule - Second Level Subjects		Credit Points	Contact Hrs/Wk
BEB303	Biology II (S)	6	6
BEB321	Plant Physiology (A)	8	3
BEB357	Populations & Systems Ecology (A)	8	3
BEB358	Experimental Design (A)	8	3
BEB366	Biology & Soils (A)	8	3
BEB388	Aquaculture (A)	8	3
BEB390	Field Studies I (S)	8	3
BEB411	Animal Physiology (S)	8	3
BEB423	Plant Tissue Culture I (S)	8	3
BEB429	Vegetation Studies (S)	8	3
BEB435	Genetics (S)	8	3
BEB444	Population Analysis (S)	8	3
CHB310	Analytical Chemistry III (A/S)	8	4
CHB327	Chemical Technology III (A)	6	3
CHB340	Spectroscopy (A/S)	8	3
CHB351	Organic Chemistry IIIC (A)	8	4
CHB371	Physical Chemistry IIIC (A)	8	4
CHB411	Environmental Analytical Chemistry (S)	8	4
CHB427	Chemical Technology IV (S)	8	4
CHB430	Inorganic Chemistry IV (S)	8	3
CHB440	Separation Methods (S)	8	3
CHB451	Organic Chemistry IVC (S)	8	3
CHB471	Physical Chemistry IVC (S)	8	3
ESB317	Optical Mineralogy (A)	8	3
ESB320	Mineral Assemblages (A)	8	3
ESB357	Structural Geology (A)	8	3
ESB367	Economic Mineral Deposits (A)	8	3
ESB397	Field Techniques (A)	8	3
ESB403	Geochemistry (S)	8	3
ESB417	Igneous & Metamorphic Petrology II (S)	8	3
ESB437	Geophysics (S)	8	3
ESB447	Petroleum Geology (S)	8	3
ESB453	Applied Geomorphology (S)	8	3
ESB477	Land Law & Mining Applications (S)	8	3

* This subject must be undertaken by all students unless exemption has been granted.

ESB487	Geological Field Studies (S)	8	3
ESB497	Sedimentology (S)	8	3
MAB409	Modern Algebra (A/S)	10	3
MAB410	Linear Algebra A (A/S)	10	3
MAB411	Mathematics 2A (A)	10	3
MAB412	Mathematics 2B (A)	10	3
MAB417	Mathematical Statistics A (A/S)	10	3
MAB418	Mathematical Statistics B (A/S)	10	3
MAB425	Mathematics 2C (S)	10	3
MAB442	Financial Mathematics (A/S)	10	3
MSB310	Biochemical Methodology III (A)	8	4
MSB408	Virology IV (S)	8	4
MSB410	Biochemical Methodology IV (S)	8	4
MSB412	Immunology IV (S)	8	4
MSB415	Biochemistry III (A/S)	10	5
MSB416	Biochemistry IV (A/S)	10	5
MSB450	Microbiology III (A)	6	3
MSB454	Microbiology IV (A/S)	8	4
PHB308	Electronics I (A)	8	3
PHB310	Wave Theory & A.C. Circuits (A)	8	3
PHB311	Optics & Acoustics (A)	8	3
PHB312	Physical Properties of Materials (A)	8	3
PHB316	Experimental Physics III (A)	8	3
PHB401	Thermal & Vacuum Physics (S)	8	3
PHB402	Relativity & Radiation Physics (S)	8	3
PHB405	Instrumentation (S)	8	3
PHB408	Electronics II (S)	8	3
PHB411	Astronomy (S)	8	3
PHB416	Experimental Physics IV (S)	12	6
PNB305	Human Nutrition I (A)	6	3
PNB405	Human Nutrition II (S)	6	3
PNB231*	Anatomy & Physiology I (A/S)	8	4
PNB232*	Anatomy & Physiology II (A/S)	8	4

such other subjects as may be approved by the Faculty of Science Academic Board from time to time.

Third Schedule - Third Level Subjects

		Credit Points	Contact Hrs/Wk
BEB447	Environmental Monitoring (A)	8	3
BEB490	Field Studies II (A)	8	3
BEB500	Selected Topics I (A)	8	3
BEB523	Plant Tissue Culture II (A)	12	5
BEB535	Population Genetics (A)	8	3
BEB560	Projects I (A)	16	6
BEB563	Biological Resources (S)	8	3
BEB588	Aquaculture II (A)	8	3
BEB600	Selected Topics II (S)	8	3
BEB621	Plant Physiology II (S)	8	3
BEB653	Population Management (S)	8	3
BEB655	Case Studies(S)	12	5
BEB660	Projects II (S)	16	6
CHB510	Instrumental Analysis (A)	8	4
CHB527	Chemical Technology V (A)	8	4
CHB530	Inorganic Chemistry V (A)	8	3
CHB551	Organic Chemistry VC (A)	8	3
CHB571	Physical Chemistry VC (A)	8	3

* Students wishing to undertake studies in Nutrition will be required to pursue alternative physiology units.

CHB590	Materials Science (A)	8	3
CHB600	Project (S)	20	10
CHB610	Advanced Analysis (S)	4	2
CHB627	Chemical Technology VI (S)	4	2
CHB628	Energy Technology (S)	6	3
CHB631	Advanced Inorganic Chemistry (S)	8	3
CHB641	Advanced Spectroscopy (S)	8	3
CHB651	Biological Chemistry (S)	8	3
CHB660	Industrial Visits (S)	2	1
CHB671	Solids & Surfaces (S)	8	3
CHB690	Advanced Materials Science (S)	8	3
CHB691	Environmental Chemistry (S)	8	3
ESB517	Mineral Exploration (A)	8	3
ESB520	Applied Geochemistry (A)	8	3
ESB527	Hydrogeology (S)	8	3
ESB547	Igneous & Metamorphic Petrology (A)	8	3
ESB577	Field Excursions V (A)	8	3
ESB597	Stratigraphy (A)	8	3
ESB607	Coal Geology (S)	8	3
ESB617	Mining Geology (S)	8	3
ESB633	Exploration Geophysics (A)	8	3
ESB647	Structural Geology & Geotectonics (S)	8	3
ESB653	Engineering Geology (S)	8	3
ESB677	Field Excursions VI (S)	8	3
ESB687	Geological Investigations (S)	8	3
MAB710	Linear Algebra B (S)	10	3
MAB718	Numerical Analysis A (A/S)	10	3
MAB719	Numerical Analysis B (S)	10	3
MAB735	Mechanics (A)	10	3
MAB737	Operations Research (A/S)	10	3
MAB741	Actuarial Mathematics (A)	10	3
MAB782	Field Theory (S)	10	3
MAB788	Mathematical Statistics (A/S)	10	3
MSB510	Food Microbiology (A)	8	3
MSB511	Microbial Physiology & Metabolism V (A)	10	4
MSB512	Virology V (A)	8	3
MSB520	Biochemistry V (A)	12	5
MSB521	Biochemical Separations (A)	10	4
MSB530	Introductory Molecular Biology (A)	10	5
MSB610	Microbial Technology (S)	10	5
MSB611	Applied Microbiology (S)	10	4
MSB620	Biochemistry VI (S)	12	5
MSB621	Analytical Biochemistry (S)	10	4
MSB630	Genetic Engineering (S)	10	5
MSB712	Immunology V (A)	8	4
MSB718	Clinical Biochemistry V (A)	8	4
MSB719	Clinical Biochemistry VI (S)	8	4
MSB755	Microbiology V (A)	16	7
MSB756	Clinical Bacteriology VI (S)	16	7
PHB501	Applied Quantum Mechanics (A)	8	3
PHB502	Electromagnetic Field Theory (A)	8	3
PHB508	Electronics III (A)	8	3
PHB510	Physical Methods of Analysis (A)	8	3
PHB516	Experimental Physics V (A)	12	6
PHB601	Solid State Physics (S)	8	3
PHB602	Nuclear Physics & Energy (S)	8	3
PHB608	Applied Acoustics (S)	8	3
PHB609	Applied Radiation Physics (S)	8	3
PHB613	Biophysics (S)	8	3
PHB616	Project (A/S)	16	6
PHB620	Topics in Physics (S)	8	3

and such other subjects as may be approved by the Faculty of Science Academic Board from time to time.

A registered student who has completed the first and second years of the standard full-time course may undertake a Co-operative Education Option at the discretion of the Course Co-ordinator. During this period, the student should enrol in the following units:

- ASB300 Industrial Experience I (A)
 ASB400 Industrial Experience II (S)

Specification of Majors Table

Detailed information concerning the specification of majors is available from the Faculty office.

The credit points (#) specified are minimal; additional subjects may be undertaken.

To satisfy prerequisite requirements within a given program, it may be necessary to include specific first level and/or second level subjects.

Major	First Level	Second & Third Levels
Biology (136#)	(i) 30# of biology subjects. (ii) Required supporting subjects: <ul style="list-style-type: none"> • 16# of mathematics subjects, including Statistics. • 8# of computing. • 16# of chemistry. 	106# of biology subjects, including 48# from the third schedule.
Chemistry (136#) [See also Note 6]	(i) 28# of chemistry subjects. (ii) Required supporting subjects: <ul style="list-style-type: none"> • 24# of mathematics subjects. • 8# of computing. 	108# of chemistry subjects, including 56# from the third schedule.
Microbiology/ Biochemistry (136#) [See also Note 6]	(i) 6# of microbiology subjects. (ii) Required supporting subjects: <ul style="list-style-type: none"> • 20# of biology subjects. • 24# of subjects from mathematics and computing. • 28# of chemistry subjects. 	At least 104# of microbiology and biochemistry subjects, including 74# from the third schedule.
Geology (136#)	(i) 24# of geology subjects. (ii) Required supporting subjects: <ul style="list-style-type: none"> • 24# of subjects from mathematics, physics, chemistry, biology, computing. 	112# of geology subjects, including 48# from the third schedule.
Mathematics (136#)	32# of mathematics subjects.	104# of mathematics subjects, including 60# from the third schedule.

Physics
(136#)
[See also Note 6]

- (i) 32# of physics subjects.
- (ii) Required supporting subjects:
 - 32# of mathematics subjects, including Statistics I.
 - 16# of computing.

- (i) 104# of physics, including 52# from the third schedule.
- (ii) 20# of mathematics subjects.

Course Requirements Notes

1. Subjects are presented as units, usually of one semester's duration.
2. First level subjects are defined to be those listed in the first schedule to the course rules. Second level and third level subjects are defined, respectively, to be those listed in the second and third schedules to the course rules. In general, it is expected that a second level subject will have one or more first level prerequisite subjects. Similarly, a third level subject is likely to have one or more second level prerequisite subjects.
3. Sub-major studies and supporting studies may be selected (subject to prerequisite and timetabling constraints) from any approved area within the University.
4. Instead of the major and sub-major requirement in the typical minimum program as described in Requirement 4, students may, in special circumstances and with the approval of the Dean, undertake two majors as defined above or a major and two sub-majors.
5. Supporting studies are subjects selected in order to
 - (a) complete the required number of credit points (see Requirement 1);
 - (b) satisfy prerequisite or co-requisite requirements;
 - (c) satisfy general requirements for first level programs as indicated in Specification of Majors Table;
 - (d) increase the scope of the program (e.g., for a teaching career) by the inclusion of specific skills or additional content.
6. Students wishing to major in Chemistry are encouraged to take Statistics and 8 credit points of Computing at first level.

Students wishing to major in Microbiology/Biochemistry should note that supporting studies taken at first level will affect their choice of subjects in later years because of prerequisite requirements.

Students wishing to major in Physics will be required to undertake at least 20 credit points of second level Mathematics.
7. Detailed information concerning the specification of majors and sub-majors is available from the Faculty office or from an academic adviser

■ ASJ247 Bachelor of Applied Science (Honours)

From 1990 a fourth year Honours program in Geology will be available following completion of the multidisciplinary Bachelor of Applied Science degree course. Other major strands are proposed to be offered in 1991.

Course Duration: 2 semesters full-time, 4 semesters part-time

Total Credit Points: 96

Standard Credit Points/Full-Time Semester: 48

Entry Requirements

To be eligible to enrol in the Honours year, an applicant must hold a recognised Bachelor's degree, with major study in the relevant discipline area. The applicant's overall level of achievement at undergraduate level is normally expected to be no less than 5.0 on a 7 point grading scale over all third-level subjects related to the area of study in the Honours year. The third-level subjects deemed relevant to the Honours year will be determined by the Head of Department/School and the Dean.

Applicants for entry to the Honours program will, normally, be new graduates or those who completed their Bachelor's degree no more than 15 months prior to commencement of the Honours year.

Course Structure

The Honours program is comprised of 96 credit points. The course structure may vary slightly from one student to another, depending on particular subjects chosen.

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

The general course structure is:

Information Retrieval Skills 4 credit points
Advanced Topics (min) 36 credit points
Complementary Studies (max) 16 credit points
Project (max) 40 credit points

		Credit Points	Contact Hrs/Wk
IFN001	Information Retrieval Skills	4	4
ASP702	Complementary Studies	16	6
ESP700	Project	40	

Advanced Topics selected from:

ASP703	Studies in Global Systems A	9	3
ESP701	Biogeography, Palaeoecology & Evolution	9	4
ESP702	Geology Case Studies I	9	4
ESP703	Geology Case Studies II	9	4
ESP704	Advanced Sedimentary & Environmental Geology	6	2
ESP705	Advanced Resource Geology	6	2
ESP706	Advanced Engineering Geology	6	2

■ CHJ129 Bachelor of Applied Science - Applied Chemistry

Course Duration: 6 semesters full-time, 12 semesters part-time

Total Credit Points: 314

Standard Credit Points/Full-Time Semester: 52.33

Course Co-ordinator: Mr Eric O'Reilly

Full-Time Course Structure		Credit Points	Contact Hrs/Wk
Semester 1 (Autumn)			
CHB110	Analytical Chemistry I	6	3
CHB150	Organic Chemistry I	8	4
CHB180	Physical & Inorganic Chemistry I	8	4
MAB211	Mathematics IA	8	3
PHB110	Physics IA	8	3
PHB111	Physics IB	8	3
CMB106	Professional Communication	6	3
ASB101	Study Support Skills	2	1
Semester 2 (Spring)			
CHB210	Analytical Chemistry II	6	3
CHB230	Inorganic Chemistry II	6	3
CHB250	Organic Chemistry II	8	4
CHB270	Physical Chemistry II	8	4
MAB224	Mathematics IB	8	3
PHB260	Physics IIG	8	4
	Strand Subject (one only)*		
MSB101	A Microbiology I	6	3
	OR		
CSB155	B Introduction to Computing	8	3
	OR		
ESB220	C Mineralogy	8	3
Semester 3 (Autumn)			
CHB310	Analytical Chemistry III	8	4
CHB327	Chemical Technology III	6	3
CHB340	Spectroscopy	8	3
CHB350	Organic Chemistry III	8	4
CHB370	Physical Chemistry III	8	4
CSB262	Computing (Strand A and C)**	6	2
	OR		
CSB281	Computer Systems I (Strand B)	12	3
	Strand Subject*		
MSB473	A Biochemistry III	6	3
	OR		
PHB308	B Electronics I	8	3
	OR		
ESB320	C Mineral Assemblages	8	3
Semester 4 (Spring)			
CHB427	Chemical Technology IV	8	4
CHB430	Inorganic Chemistry IV	8	3
CHB440	Separation Methods	8	3
CHB450	Organic Chemistry IV	8	4
CHB470	Physical Chemistry IV	8	4
MAB227	Statistics	8	3
	Strand Subject*		
MSB474	A Biochemistry IV	6	3
	OR		
PHB408	B Electronics II	8	3
	OR		
ESB403	C Geochemistry	8	3

**Elective Strand is indicated by A Biochemistry/ Microbiology, B Computing/Electronics, or C Geology.*

***Students who elect to study elective Strand B Computing/ Electronics are required to study CSB281 rather than CSB262. Students electing Strands A or C study CSB262.*

Semester 5 (Autumn)

CHB510	Instrumental Analysis	8	4
CHB527	Chemical Technology V	8	4
CHB530	Inorganic Chemistry V	8	3
CHB550	Organic Chemistry V	8	4
CHB570	Physical Chemistry V	8	4
CHB590	Materials Science Strand Subject*	8	3
MSB102	A Microbiology II OR	6	3
PHB508	B Electronics III OR	8	3
ESB520	C Applied Geochemistry	8	3

Semester 6 (Spring)

CHB600	Project	20	10
CHB610	Advanced Analysis	4	2
CHB627	Chemical Technology VI	4	2
CHB640	Chemistry VI	4	2
CHB660	Industrial Visits	2	1
MNB040	Management Chemistry Elective	4	1
CHB628	Energy Technology OR	6	3
CHB690	Advanced Materials Science Strand Subject*	8	3
MSB103	A Microbiology III OR	8	3
CHB618	B Laboratory Automation OR	8	3
ESB411	C Earth Resources	8	3

Co-operative Education Option

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 Co-operative Education Program Co-ordinator, undertake the Co-operative Education option.

This involves 10-12 months of paid full-time employment in an approved industrial/commercial environment during which time the student will be enrolled in the units Industrial Experience I (first semester) and Industrial Experience II (second semester). On completion of the approved industrial experience the student resumes formal studies.

Part-Time Course Structure

		Credit Points	Contact Hrs/Wk
Semester 1 (Autumn)			
CHB110	Analytical Chemistry I	6	3
CHB180	Physical & Inorganic Chemistry I	8	4
PHB110	Physics IA	8	3
PHB111	Physics IB	8	3
ASB101	Study Support Skills	2	1
Semester 2 (Spring)			
CHB150	Organic Chemistry I	8	4
MAB106	Professional Communication	6	3
MAB211	Mathematics IA	8	3

*Elective Strand is indicated by A Biochemistry/ Microbiology, B Computing/Electronics, or C Geology.

Semester 3 (Autumn)			
CHB230	Inorganic Chemistry II	6	3
CHB250	Organic Chemistry II	8	4
MAB224	Mathematics IB	8	3
Semester 4 (Spring)			
CHB270	Physical Chemistry II	8	4
PHB260	Physics IIG	8	4
	Strand Subject*		
MSB101	A Microbiology I	6	3
	OR		
CSB155	B Introduction to Computing	8	3
	OR		
ESB220	C Mineralogy	8	3
Semester 5 (Autumn)			
CHB370	Physical Chemistry III	8	4
CHB430	Inorganic Chemistry IV	8	3
CSB262	Computing (Strand A and C) ++	6	2
	OR		
CSB281	Computer Systems I (Strand B)	12	3
	Strand Subject*		
MSB473	A Biochemistry III	6	3
	OR		
PHB308	B Electronics I	8	3
	OR		
ESB320	C Mineral Assemblages	8	3
Semester 6 (Spring)			
CHB310	Analytical Chemistry III	8	4
CHB340	Spectroscopy	8	3
CHB350	Organic Chemistry III	8	4
Semester 7 (Autumn)			
CHB327	Chemical Technology III	6	3
CHB450	Organic Chemistry IV	8	4
CHB470	Physical Chemistry IV	8	4
Semester 8 (Spring)			
CHB427	Chemical Technology IV	8	4
CHB440	Separation Methods	8	3
MAB227	Statistics	8	3
	Strand Subject		
MSB474A	Biochemistry IV	6	3
	OR		
PHB408B	Electronics II	8	3
	OR		
ESB403C	Geochemistry	8	3
Semester 9 (Autumn)			
CHB550	Organic Chemistry V	8	4
CHB570	Physical Chemistry V	8	4
	Strand Subject*		
MSB102A	Microbiology II	6	3
	OR		
PHB508B	Electronics III	8	3
	OR		
ESB520C	Applied Geochemistry	8	3

* Elective Strand is indicated by A, B or C.

++ Students who elect to study Elective Strand B are required to study CSB281 rather than CSB262. Students electing strands A or C study CSB262.

Semester 10 (Spring)

CHB527	Chemical Technology V	8	4
CHB530	Inorganic Chemistry V	8	3
CHB590	Material Science Strand Subject*	8	3
MSB103	A Microbiology III OR	8	3
CHB618	B Laboratory Automation OR	8	3
ESB411	C Earth Resources	8	3

Semester 11 (Autumn)

CHB510	Instrumental Analysis	8	4
CHB601-1	Project	10	4
CHB527	Chemical Technology VI	4	2
CHB640	Chemistry VI	4	2

Semester 12 (Spring)

CHB610	Advanced Analysis	4	2
CHB601-2	Project	10	6
CHB660	Industrial Visits	2	1
MNB040	Management	4	1
CHB628	Chemistry Elective +* Energy Technology OR	6	3
CHB690	Advanced Material Science	8	3

■ ESJ132 Bachelor of Applied Science - Applied Geology

From 1989 no new students will be admitted to this course. Intending students are referred to the multidisciplinary BAppSc course - ASJ226 in which a major in geology can be undertaken. Continuing students who have failed subjects no longer offered should consult the course co-ordinator concerning their enrolment.

Course Duration: 6 semesters full-time

Total Credit Points: 298

Standard Credit Points/Full-Time Semester: 49.67

Special Course Requirement

Students may be required to attend intensive segments of coursework at weekends and in QUT recess periods (normally to fulfil field work requirements of the course).

**Full-Time Course Structure
(for continuing students only)**

**Credit
Points** **Contact
Hrs/Wk**

Semester 5 (Autumn)

ESB513	Economic Geology V	8	4
ESB533	Exploration Geochemistry	8	4
ESB543	Petrology V	6	3
ESB593	Sedimentary Petrology	6	3
ESB563	Project V	6	3
ESB573	Field Excursions V	4	2
ESB633	Exploration Geophysics	8	3

* Elective Strand is indicated by A, B or C.

+*It is not intended that all Chemistry Elective units will be offered. Those units offered in any one year will be determined by the student demand.

Semester 6 (Spring)

ESB523	Hydrogeology	6	3
ESB613	Mineragraphy & Mining Geology	6	3
ESB603	Petroleum & Coal Geology	10	5
ESB643	Structural Geology VI	6	3
ESB653	Engineering Geology	8	3
ESB663	Project VI	8	4
ESB673	Field Excursions VI	4	2
ESB693	Mining Property Evaluation	4	2

■ MAJ133 Bachelor of Applied Science - Mathematics

Course Duration: 6 semesters full-time, 12 semesters part-time

Total Credit Points: 288

Standard Credit Points/Full-Time Semester: 48

Course Requirements

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

- all 14 mandatory units;
- at least 14 units above first year level;
- at least 48 credit points in mathematics units above second year level;
- a minimum of 288 credit points.

Note: The specialisation codes shown below are MS - Mathematical Science, and IA - Information Analysis.

		Credit Points	Contact Hrs/Wk
FIRST YEAR LEVEL			
MAB301	Calculus & Analysis A*	10	3
MAB302	Calculus & Analysis B*	10	3
CSB155	Introduction to Computing*	8	3
ISB493	Business Computer Programming*	12	3
MAB309	Modern Algebra*	10	3
MAB310	Linear Algebra*	10	3
MAB317	Mathematical Statistics I*	10	3
MAB318	Mathematical Statistics IIA*	10	3
MAB331	Introductory Vector Analysis*	10	3
MAB342	Mathematics of Finance*	10	3
CMB106	Professional Communication	6	3
	First year elective units*	8-12	3-6
	First year elective units*	8-12	3-6
	First year elective units	8-12	3-6
	First year elective units	8-12	3-6
SECOND YEAR LEVEL			
MAB601	Multivariable Calculus A (MS)*	10	3
MAB612	Differential Equations (MS)*	10	3
MAB602	Multivariable Calculus C (MS)	10	3
CSB281	Computer Systems I (IA)	12	3
MAB608	Mathematical Statistics IIB (MS)	10	3

**These units are mandatory; the remainder are referred to as optional; optional units include approved elective units offered by other Departments or Schools.*

MAB610	Applied Linear Algebra (MS)	10	3
MAB618	Numerical Analysis I (MS)	10	3
MAB619	Numerical Analysis II (MS)	10	3
MAB637	Operations Research IA (IA)	10	3
MAB638	Operations Research IB (MS)	10	3
MAB635	Classical Theoretical Mechanics (MS)	10	3
MAB641	Actuarial Mathematics (IA)	10	3
	Second year elective units	8-12	3-9
	Second year elective units	8-12	3-9

THIRD YEAR LEVEL

MAB906	Topics in Analysis (MS)	12	3
MAB907	Mathematical Statistics IIIA (IA)	12	3
MAB908	Mathematical Statistics IIIB (IA)	12	3
MAB913	Numerical Analysis III (MS)	12	3
MAB920	Coding & Encryption Techniques (IA)	12	3
MAB921	Methods of Mathematical Physics A (MS)	12	3
MAB924	Applied Statistical Techniques (IA)	12	3
MAB927	Operations Research IIA (IA)	12	3
MAB928	Operations Research IIB (IA)	12	3
MAB929	Statistical Forecasting (IA)	12	3
MAB941	Methods of Mathematical Economics (MS)	12	3
MAB960	Project Work (IA)	12	3

Elective Units

The choice of elective units will be subject to timetabling constraints, but elective groupings for which timetabling arrangements may be expected to be made will include selections from the programs offered by the following Faculties: Science, Business, Information Technology. No more than four elective units may be counted as second year level subjects. Students are required to consult the Head of School prior to initial enrolment in an elective unit.

Co-operative Education Option

A co-operative education option is available within the program after the successful completion of the equivalent of four semesters of full-time study. It involves a period of 10-12 months of paid full-time employment in an approved industrial/commercial environment. During this period, students will be enrolled in the following units: ASB330 Industrial Experience I (Semester 1); ASB430 Industrial Experience II (Semester 2).

■ PHJ248 Bachelor of Applied Science - Medical Radiation Technology with Strands in Medical Imaging Technology and Radiotherapy Technology

Course Duration: 6 semesters full-time

Total Credit Points: 288

Standard Credit Points/Full-Time Semester: 48

Course Co-ordinator: Assoc. Prof. Brian J. Thomas

		Credit Points	Contact Hrs/Wk
Semester 1 (Autumn)			
COMMON SUBJECTS			
CMB106	Professional Communication	6	3
MAB151	Quantitative Techniques	4	2
MNB111	Introductory Psychology for Health Professionals	4	2
MSB120	Introduction to Pathology	6	3
PHB111	Physics IB	8	3
PHB178	Principles of Medical Radiations	10	5
PNB125	Anatomy & Physiology I	10	4
Semester 2 (Spring)			
COMMON SUBJECTS			
NSB201	Principles of Patient Care	4	2
PHB272	Radiation Physics I	12	5
PNB225	Anatomy & Physiology II	10	4
MEDICAL IMAGING TECHNOLOGY STRAND			
PHB275	Processing Technology	4	2
PHB276	General Radiography I	14	7
PHB279	Clinical Radiography I	4	2
RADIOTHERAPY TECHNOLOGY STRAND			
PHB286	Treatment Planning I	6	3
PHB287	Radiotherapy Technique I	12	6
PHB289	Clinical Radiotherapy I	4	2
Semester 3 (Autumn)			
COMMON SUBJECTS			
MSB320	Systematic Pathology	8	3
PNB325	Regional & Sectional Anatomy	8	4
MEDICAL IMAGING TECHNOLOGY STRAND			
PHB373	Nuclear Medicine Imaging I	4	2
PHB374	Radiographic Equipment I	6	3
PHB376	General Radiography II	12	5
PHB379	Clinical Radiography II	10	5
RADIOTHERAPY TECHNOLOGY STRAND			
PHB382	Radiotherapy Physics I	4	2
PHB386	Treatment Planning II	4	2
PHB387	Megavoltage Therapy I	14	6
PHB389	Clinical Radiotherapy II	10	5
Semester 4 (Spring)			
COMMON SUBJECTS			
PHB471	Radiation Physics II	4	2
PHB475	Medical Radiation Computing I	8	3
MEDICAL IMAGING TECHNOLOGY STRAND			
MSB420	Imaging Pathology	4	2
PHB473	Medical Ultrasound	4	2
PHB474	Radiographic Equipment II	4	2
PHB476	Special Procedures	8	3
PHB479	Clinical Radiography II	8	4
PNB425	Imaging Anatomy	8	4

RADIOTHERAPY TECHNOLOGY STRAND

PHB481	Dosimetry	6	3
PHB482	Radiotherapy Physics II	6	3
PHB484	Principles of Treatment I	6	3
PHB487	Megavoltage Therapy II	10	4
PHB489	Clinical Radiotherapy III	8	4

Semester 5 (Autumn)**COMMON SUBJECTS**

PHB575	Medical Radiation Computing II	8	3
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MEDICAL IMAGING TECHNOLOGY STRAND

PHB572	Image Recording & Evaluation	4	2
PHB573	Digital Imaging Modalities	6	2
PHB574	Quality Assurance in Medical Imaging	6	3
PHB576	Advanced Radiographic Technique I	12	6
PHB578	Image Interpretation I	4	2
PHB579	Clinical Radiography IV	8	4

RADIOTHERAPY TECHNOLOGY STRAND

PHB583	Complementary & Evolving Techniques	6	3
PHB584	Principles of Treatment II	4	2
PHB585	Computer Assisted Treatment Planning I	8	3
PHB587	Orthovoltage & Superficial Therapy	10	4
PHB589	Clinical Radiotherapy IV	12	6

Semester 6 (Spring)**COMMON SUBJECTS**

MNB666	Counselling for Health Professionals	4	2
PHB671	Radiation Biology	4	2
PHB672	Project	8	3

MEDICAL IMAGING TECHNOLOGY STRAND

PHB676	Advanced Radiographic Technique II	8	3
PHB679	Clinical Radiography V EITHER	14	6
PHB680	Nuclear Medicine Imaging II OR	10	5
PHB681	Computed Tomography Imaging	10	5

RADIOTHERAPY TECHNOLOGY STRAND

PHB683	Oncological Imaging	6	3
PHB685	Computer Assisted Treatment Planning III	8	4
PHB687	Specialised Radiotherapy Technique	10	4
PHB689	Clinical Radiotherapy V	8	4

■ PHK205 Diploma of Applied Science - Diagnostic Radiography

This course has been replaced by PHJ248 BACHELOR OF APPLIED SCIENCE - MEDICAL RADIATION TECHNOLOGY. In 1990 the third year of the course is offered to continuing students only.

Standard Credit Points/Full-Time Semester: 48

Course Structure	Credit Points	Contact Hrs/Wk
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Semester 5 (Autumn)

Part-time attendance in the clinical situation with part-time attendance at QUT

PHD572	Complementary Imaging Techniques	8	4
PHD573	Radiographic Technique III	6	3
PHD574	Radiographic Equipment III	6	3
PHD577	Clinical Practice IIID	16	
CMB106	Professional Communication OR equivalent elective	6	3

Semester 6 (Spring)

Full-time attendance in the clinical situation

PHD677	Clinical Practice IV	44	
PHD610	Advanced Radiographic Technique	4	2

■ PHK206 Diploma of Applied Science - Therapeutic Radiography

This course has been replaced by the course PHJ248 BACHELOR OF APPLIED SCIENCE - MEDICAL RADIATION TECHNOLOGY. In 1990 the third year of the course is offered to continuing students only.

Standard Credit Points/Full-Time Semester: 44

Course Structure	Credit Points	Contact Hrs/Wk
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Semester 5 (Autumn)

Attendance in clinical situation with day release to undertake formal coursework at QUT

PHD586	Radiotherapy Practice V	6	3
PHD580	Complementary & Evolving Techniques I	8	4
PHD587	Clinical Practice IVT	30	

Semester 6 (Spring)

Attendance in clinical situation with day release to undertake formal coursework at QUT

PHD680	Complementary & Evolving Techniques II	6	3
PHD471	Radiobiology & Protection	4	2
PHD687	Clinical Practice VT	22	
CMB106	Professional Communication OR equivalent elective	6	3

■ ASL225 Associate Diploma in Applied Science with strands in Biology and Chemistry

Course Duration: 4 semesters full-time, 8 semesters part-time

Total Credit Points: 192

Standard Credit Points/Full-Time Semester: 48

Course Co-ordinators: Dr Chris King and Dr Graham Smith

Full-Time Course Structure (Semester 1 common to both Strands)		Credit Points	Contact Hrs/Wk	
Semester 1 (Autumn)				
✓	BEA108	Introductory Biology	8	3
✓	BEA198	Microscopy Techniques	8	3
✓	CHA111	Laboratory Techniques	8	3
✓	CHA145	Introductory Chemistry	8	3
✓	MAA251	Statistics & Data Processing	8	3
✓	PHA154	Introductory Physics	8	3
BIOLOGY STRAND				
Semester 2 (Spring)				
	BEA200	Biology B	8	3
	BEA202	Cell Structure & Function	8	3
	BEA297	Biological Data Handling	8	3
	CHA218	Analytical Chemistry I	8	3
	CHA240	Instrumental Techniques	8	3
	MSA113	Introductory Biochemistry	8	3
Semester 3 (Autumn)				
	BEA339	Introduction to Bioculture	8	3
	BEA349	Computer Applications in Biology	8	3
	BEA398	Animal & Plant Techniques	12	4
	CHA442	Introduction to Occupational Safety	4	2
		Electives* - two of:		
	BEA004	Taxonomy	8	3
	BEA016	Aquaculture Techniques	8	3
	BEA021	Plant Physiology	8	3
	BEA060	Hydrobiological Techniques or other approved electives.	8	3
Semester 4 (Spring)				
	BEA403	Environmental Biology	8	3
	BEA405	Population Biology	8	3
	BEA498	Field Techniques	8	3
	BEA499	Applications in Electron Microscopy	8	3
	MSA162	Microbiology II	8	3
		Elective* - one of:		
	BEA011	Animal Physiology	8	3
	BEA026	Plant Cell & Tissue Culture	8	3
	CSA259	Introduction to Computing or another approved elective.	6	2
CHEMISTRY STRAND				
Semester 2 (Spring)				
✓	CHA218	Analytical Chemistry I	8	3
✓	CHA219	Qualitative Analysis	6	3
✓	CHA230	Chemistry of Inorganic Materials	4	2
✓	CHA270	Physical Chemistry I	8	3
✓	CHA240	Instrumental Techniques	8	3
✓	CHA250	Organic Chemistry I	8	3
	CSA259	Introduction to Computing	6	2
Semester 3 (Autumn)				
✓	CHA318	Instrumental Analytical Chemistry	8	4
✓	CHA319	Analytical Chemistry II	6	3
✓	CHA370	Physical Chemistry II	6	2

*Students should discuss their choice of electives with the Strand Co-ordinator.

✓	CHA320	Chemical Process Principles I	8	3
✓	CHA350	Organic Chemistry II	8	3
✓	CHA442	Introduction to Occupational Safety	4	2
		Elective - one of:		
	CHA580	Food Chemistry I	8	3
		OR		
	ESA310	Geology	8	3
		OR		
	MSA161	Microbiology I	8	3
		OR		
		any other approved elective.		

Semester 4 (Spring)

✓	CHA368	Industrial Chemistry	8	3
✓	CHA670	Physical Chemistry III	8	3
✓	CHA410	Computers in Chemistry	8	3
✓	CHA610	Industrial Analysis	8	3
✓	CHA550	Organic Chemistry III	8	3
		Elective - one of:		
	CHA680	Food Chemistry II	8	3
		OR		
	ESA510	Mineralogy Techniques	8	3
		OR		
	MSA162	Microbiology II	8	3
		OR		
	CHA520	Chemical Process Principles II	8	3
✓	OR	any other approved elective.		

Part-Time Course Structure (Semesters 1 and 2 common to both Strands)

Semester 1 (Autumn)

BEA108	Introductory Biology	8	3
CHA145	Introductory Chemistry	8	3
PHA154	Introductory Physics	8	3

Semester 2 (Spring)

BEA198	Microscopy Techniques	8	3
CHA111	Laboratory Techniques	8	3
MAA251	Statistics & Data Processing	8	3

BIOLOGY STRAND

Semester 3 (Autumn)

BEA202	Cell Structure & Function	8	3
BEA297	Biological Data Handling	8	3
CHA218	Analytical Chemistry I	8	3

Semester 4 (Spring)

CHA240	Instrumental Techniques	8	3
MSA113	Introductory Biochemistry	8	3
BEA200	Biology B	8	3

Semester 5 (Autumn)

BEA349	Computer Applications in Biology	8	3
BEA399	Applications in Electron Microscopy*	6	3

Semester 6 (Spring)

BEA398	Animal and Plant Techniques*	12	4
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* Day release will be required.

MSA162	Microbiology II	8	3
BEA403	Environmental Biology	8	3

Semester 7 (Autumn)

BEA339	Introduction to Bioculture	8	3
CHA442	Introduction to Occupational Safety*	4	2
	Electives - two of		
BEA004	Taxonomy	8	3
BEA016	Aquaculture Techniques	8	3
BEA021	Plant Physiology	8	3
BEA060	Hydrobiological Techniques	8	3
BEA090	External Project I	8	3
BEA099	External Project II	8	3
	or other approved electives.		

Semester 8 (Spring)

BEA405	Population Biology+	8	3
BEA498	Field Techniques+	8	3
	Elective - one of:		
BEA011	Animal Physiology	8	3
BEA026	Plant Cell & Tissue Culture	8	3
BEA090	External Projects I	8	3
BEA099	External Projects II	8	3
CSA259	Introduction to Computing	6	2
	or another approved elective.		

CHEMISTRY STRAND

Semester 3 (Autumn)

CHA218	Analytical Chemistry I	8	3
CHA270	Physical Chemistry I	8	3
CHA230	Chemistry of Inorganic Materials	4	2
CHA250	Organic Chemistry I	8	3

Semester 4 (Spring)

CHA219	Qualitative Analysis	6	3
CHA240	Instrumental Techniques	8	3
CHA350	Organic Chemistry II	8	3

Semester 5 (Autumn)

CHA318	Instrumental Analytical Chemistry	8	4
CHA370	Physical Chemistry II	6	2
CHA319	Analytical Chemistry II	6	3

Semester 6 (Spring)

CHA550	Organic Chemistry III	8	3
CHA610	Industrial Analysis	8	3
CHA670	Physical Chemistry III	8	3
CSA259	Introduction to Computing	6	2

Semester 7 (Autumn)

CHA320	Chemical Process Principles I	8	3
CHA442	Introduction to Occupational Safety	4	2
	Elective - one of:		
CHA580	Food Chemistry I		
	OR	8	3
ESA310	Geology		
	OR	8	3
MSA161	Microbiology I		
	OR	8	3
	any other approved elective.		

* Students in appropriate employment may claim exemption from this subject.

+ Day release (one week total) will be required for the field component of this subject.

Semester 8 (Spring)

CHA410	Computers in Chemistry	8	3
CHA368	Industrial Chemistry Elective - one of:	8	3
CHA680	Food Chemistry II OR	8	3
ESA510	Mineralogy Techniques OR	8	3
MSA162	Microbiology II OR	8	3
CHA520	Chemical Process Principles II or any other approved elective	8	3

Notes:

Students in the Biology Strand may apply to have their current employment arranged and assessed in lieu of one or more electives. In such cases, the employer, in consultation with the Head of Department, will nominate an honorary supervisor to collaborate with a departmental tutor. Under such an arrangement students will be required to maintain a work log and complete such exercises and assignments as required.

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

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

Students who commenced the course prior to 1988 should consult the Strand Co-ordinator concerning requirements to complete the course.

General Information

Telephone Numbers

Faculty of Science Office	223 2152
Office of Co-operative Education	223 2156
Department of Applied Geology	223 2324
Department of Biology	223 2494
Department of Chemistry	223 2291
School of Mathematics	223 2308
Department of Physics	223 2597

Staff

Dean: R.B. Gardiner, MA, BSc(Hons), PhD(Edin), CPhys, FInstP, FAIP

Administration Officer: J. Murphy, BA(Hons)(Qld)

Development Manager: K.D. Pulsford, BBus

Department of Applied Geology

Head of Department: D. Gust, MA(Rice), PhD(ANU)

Principal Lecturer: L.H. Hamilton, BE, MSc(NSW), PhD(Lond), DIC, FAIG, MAusIMM

Lecturers:

A.V. Arakel, BSc(Shiraz), PhD(WA)

D.C. O'Connell, BSc DipEd(Qld), MSc(James Cook), BEd(BCAE), FGS(Lond), AMAusIMM

W.F. Ridley, MSc(Qld)
G.G. Shorten, MSc(Qld), TCert(Ku-ring-gai), AMAus/MM
J.P. Williams, BSc(Syd), MAppSc, FRAS, MSEG, MASEG, ASEG, AMAusIMM
Senior Technical Staff: W. Kwiecien, CIC, AssocDipAppChem,
Senior Laboratory Technician: B.J. Feely, MIST, Tech CEI, Technician Division I

Department of Biology

Head of Department: A. Bailey, BSc(Hons)(L'pool), PhD(Adel), CBiol, MIBiol, MAIBiol, MAIH

Senior Lecturer: W.A. Dodd, MSc(Adel), PhD(Alberta), MAIH

J.C. Wilson, MAppSc, CBiol, MIBiol (Award for Distinguished Academic Service 1988)

G.H. Yezdani, MSc(Sind), PhD (Monash), CBiol, MAIBS, MAIBiol (Award for Distinguished Academic Service 1988)

Lecturers:

G.J. Kelly, BSc(Hons), PhD(Syd)

C.R. King, BSc(Lond), MSc(Salford), PhD(Qld), ARCATS, CBiol, MIBiol

P.B. Mather, BSc(Hons), PhD(La Trobe)

B.J. McMahon, MSc(Qld), CBiol, MIBiol

N.A. White, MAppSc

I. Williamson, BSc(Hons)(Griff), PhD(Flin)

Senior Tutor: M. Cahill, BSc(Hons).

Senior Technical Staff:

K.D. Barton, CMLT, BAppSc, Senior Laboratory Technician

E. Guindy, Laboratory Technician Division I

N. Sherwin, CBLT, Laboratory Technician Division II

Department of Chemistry

Head of Department: S.F. Dyke, PhD(Aberdeen), DSc(Lond), CChem, FRSC, FRACI

Senior Lecturers:

J.P. Bartley, MSc(Hons), PhD(Auck), CChem(UK), MRSC, AAIFST (Award for Distinguished Academic Service 1988)

M.R. Chambers, PhD(Econ)(Stir), PhD(Lond), CChem(UK), MRSC

R.L.W. Frost, BEd, MSc, PhD(Qld), CChem, ARACI

P.S. Hallman, MSc, PhD(Syd), CChem, ARACI

P.J. Hetherington, BSc(App)(Hons), PhD(Tas)

E.J. O'Reilly, MSc(Qld), DipEd, CChem, FRACI

Lecturers:

D.P. Arnold, BSc, PhD(Qld), CChem, ARACI (Award for Distinguished Academic Service 1988)

N.D. Bofinger, BSc(NE), PhD(Qld), CChem, ARACI

G.K. Douglas, BSc(Hons)(NE), PhD(Tas), CChem, ARACI

W.J.W. Hanna, BSc(Hons), PhD(Belf), CChem(UK), MRSC

K.P. Herlihy, BSc(Hons)(Qld), DipIndChem, CChem, ARACI

G.M. Kimber, MSc, BEd(Qld), CChem, FRACI

S. Kokot, BSc(Hons), PhD(NSW), CChem, FRACI

D.S. Sagatys, BSc(Hons)(Qld), PhD(IIT)

D.P. Schweinsberg, ASTC, BSc(NSW), MSc, PhD(Qld), CChem, ARACI, AMAusIMM

G. Smith, BSc, PhD(Qld), DipIndChem, ARACI

B.N. Venzke, MSc, PhD(Qld)

Senior Technical Staff:

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P. Comino, CIC, AssocDipAppChem, Senior Laboratory Technician Division II
P. Stevens, CIC, AssocDipAppChem, Senior Laboratory Technician Division II
W. Skeaf, Laboratory Technician Division I
E. Martinez, CIC, AssocDipClinLab Tech, Laboratory Technician Division I
M. Hodgkinson, CBLT, Laboratory Technician Division II
V. Beecham, Laboratory Technician Division II
A. Grudzinski, AssocDipAppChem, Technician

School of Mathematics

Head of School: A.N. Pettit, MSc(Hons), PhD(Nottingham)

Senior Lecturers:

V.V. Anh, BSc(Hons), PhD(Tas), MEc(NE) (Award for Distinguished Academic Service 1988)

C.M. Bothwell, BSc, BEd, MLitSt(Qld), ALCM

J. Gudgeon, BSc(Hons)(Hull), MSc(Oxf), FIMA

I.F. Ogle, MSc(NE), FSS, MSSA

A.M.B. Wolanowski, MSc(Lublin), PhD(Warsaw), DipCompSc(Qld), MSSA, AMACS (Award for Distinguished Academic Service 1986)

Lecturers:

C.C. Calder, MSc(Lond)

E.P. Dawson, BSc, DipEd(Wash), MA(Syd), MLitSt, MSc(Qld)

B.P. Garfoot, BSc(Hons)(N'cle, NSW), PhD(Qld)

D. Huang, MSc, PhD(Peking)

R.F. Hubbard, BA(NZ), MLitSt(Qld)

M. Ilic, MSc(Qld)

M.T. Kelly, BSc, DipEd, MLitSt(Qld)

E. Kozan, MSc(MidEastTechUniv), PhD(Hacettepe)

M.R. Littler, DipMath(Tech), BSc(Hons)(Lond), AFIMA, CEng, FIMarE

L.M. Scotney, BSc, DipEd(Qld)

N. Spencer, BAppSc, AssocDipElecEng

B.S. Tasker, BA(NE)

E.M. Walker, BSc(Hons)(Qld), MSc(Oxon), AIA, AAlA

D.F. Welburn, BSc(Qld)

Administration Officer: G. Scott, BEng(NSW), MSc(Lond), ThA(AustCollTheol), AIMM

Department of Physics

Head of Department: B.W. Thomas, MSc, PhD, DipEd(WA), FAIP, MACPSM, FAIM

Principal Lecturer: B.J. Thomas, BSc(Hons), PhD(WA), MAIP, MACPSM (Award for Distinguished Academic Service 1988)

Senior Lecturers:

J.A. Davies, BSc(Hons)(City, London), MSc(Qld), AIMEE

R.E. Dunlop, MSc(Qld), MAIP, MASUM

D.W. Field, BSc(Hons), PhD(Adel), DipT (ACAE)

B.M. O'Leary, BSc, DipEd(Syd), MSc(Surrey), MAIP

R.J. Treffene, BSc(Qld), MSc, PhD(Lond), FASMF

Lecturers: P. Best, BSc(Hons)(Bristol), PhD(Monash), MEIA

I.R. Cowling, BSc(Hons), PhD(Flinders), ISES

I.R. Edmonds, MSc(Auck), PhD(Warwick), MAIP, ISES

R.A. Fleming, MSc(Qld), MAIP

G.H. Johnston, AssocDipElecEng, MAppSc
P.D. Killen, BSc(Hons), PhD(Qld)
T.G. Lewis, BSc, BEd(Qld), MSc(Aston), MSc(Griffith), DipRMS, MAIP
W.C. Middleton, MSc, BEd(Qld), MAIP, MAAS
R.J. Norton, BSc(Qld), MSc(Brunel), MAIP
F. Quintarelli, BSc(Ed), BSc(Hons), PhD(Melb)
P.A. Rowntree, DAppSc, GradDipEd(Tert)(NE), MIR
C.F. Wong, DipSc(HongKong), MSc(McGill), PhD(Saskatch), MARPS, MAAPT
Technologist: N.A. Raftery, BSc(Hons), BA(Qld)
Administration Officer: J. Dennis, BAppSc, BBus
Senior Technical Staff:
R. Jeffery, SMIREE, Laboratory Manager
R.I. Kleinschmidt, Technician Division I
D.J. Pitt, Technician Division I
J.A. Jull, Senior Technician Division II
G.W. Kibbey, Senior Technician Division II
M.K. Power, Senior Technician Division II
B. Wheeler, Senior Technician Division II
N.G. Stead, Technician Division II

Prizes and Awards

AGFA-Gevaert/AIR Prize

Presented, in association with the Australian Institute of Radiography, to the student obtaining the highest marks in the first year subject Processing Technology of the Bachelor of Applied Science (Medical Imaging Technology) course.

L.G. Amos Prize

Awarded each year to the graduand from the multidisciplinary Bachelor of Applied Science with major studies in Chemistry who, in the opinion of the Head of the Department of Chemistry, obtains the best academic record over the length of the course.

Australian Laboratory Services Pty Ltd Prize

Awarded to a full-time or part-time student of the Bachelor of Applied Science - Applied Chemistry course or the multidisciplinary Bachelor of Applied Science course with major studies in Chemistry, who has the best results in the final year Analytical Chemistry subjects.

David Barry Memorial Prize

Awarded to the graduate with the best overall academic performance in the biology strand of either the Associate Diploma in Applied Science or the Bachelor of Applied Science - Biology course.

Canberra - Packard Prize

Awarded to the graduand undertaking major studies in Physics who has obtained the best academic record in the final year of the multidisciplinary Bachelor of Applied Science course.

Castlemaine Perkins Scholarship in Applied Chemistry

This scholarship is offered annually for a period of one academic year. Eligible students are those who have satisfactorily completed the third semester of the full-time program of the course Bachelor of Applied Science - Applied Chemistry. The scholarship takes the form of a stipend and a book allowance, together with periods of vacation employment. Further details of the scholarship can be obtained from the Department of Chemistry. Applications must be submitted on or before August 31 each year.

CRAE Mapping Prize

Donated by CRA Exploration Pty Ltd and awarded to the best project student in the Bachelor of Applied Science - Applied Geology course for demonstrated ability in geological mapping.

George Edward Curphey Prize in Mathematics

Awarded to the student enrolled in the Bachelor of Applied Science - Mathematics course who, in the opinion of the Head of the School of Mathematics, is the most academically outstanding graduate of the year.

George Edward Curphey Prize in Theoretical Mechanics

Awarded to the student enrolled in the Bachelor of Applied Science - Mathematics course who obtains the best performance of the year in 'Classical Theoretical Mechanics', providing that the Head of School judges him/her to be of sufficiently outstanding merit.

Dupont/AIR Award

Presented, in association with the Australian Institute of Radiography, to the student achieving the best academic record in the first year of the Bachelor of Applied Science (Medical Imaging Technology) course.

Hugo Flecker Memorial Prizes

Donated by the Australasian College of Radiologists, Queensland Branch, and awarded to students in the third year of the Diploma of Applied Science - Diagnostic Radiography and the Diploma of Applied Science - Therapeutic Radiography courses respectively, who obtain the best performance in the clinical practice subjects for that year.

J.L. Forsyth Prize

Donated by Meadow Lea Foods and awarded to the student who has shown the greatest proficiency in the subjects of the fifth and sixth years of the part-time course for the Bachelor of Applied Science (Applied Chemistry).

GEC Automation/AIR Prize

The GEC Automation Prize is presented in association with the Australian Institute of Radiography and awarded to the student obtaining the highest marks in the first year subject Treatment Planning I of the Bachelor of Applied Science (Radiotherapy Technology) course.

Geological Society of Australia Medal

Awarded to the graduand who obtains the best results in the Bachelor of Applied Science - Applied Geology course.

Colin Graham Memorial Prize

Awarded from monies held in trust to the graduand from the Bachelor of Applied Science - Applied Chemistry course who, in the opinion of the Head of the Department of Chemistry, has the best academic record over the length of the course.

Haines Medical/AIR Award

Presented, in association with the Australian Institute of Radiography, to the student achieving the best academic record in the first year of the Bachelor of Applied Science (Radiotherapy Technology) course.

Hanimex/AIR Prize

Presented, in association with the Australian Institute of Radiography, to the student achieving the best academic record in the third year of the Diploma of Applied Science (Diagnostic Radiography) course.

Incitec Ltd Prize

Awarded annually to a full-time or part-time student of the Bachelor of Applied Science course in Applied Chemistry or the multidisciplinary Bachelor of Applied course with

major studies in Chemistry who, in the opinion of the Head of Department, shows at first attempt the greatest overall proficiency in the third year (Semesters 5 and 6 or the part-time equivalent) of the above courses. If no student is considered suitable in a given year, no prize will be awarded.

Julius Kruttschnitt Education Fund

This fund has been established by the Southern Queensland Branch of the Australasian Institute of Mining and Metallurgy to provide assistance to students of geology, mining, petroleum or metallurgy from any university or college of advanced education in Queensland. Grants are made to students who find themselves with monetary problems while pursuing their studies. Successful applicants must belong to the Australasian Institute of Mining and Metallurgy. The value and duration of the award are dependent on each applicant's circumstances. Applications may be made at any time during the year and should be addressed to the Honorary Secretary, Julius Kruttschnitt Education Fund, GPO Box 1433, Brisbane, Qld 4001.

Mallinckrodt/AIR Award

Presented, in association with the Australian Institute of Radiography, to the student achieving the best academic record in the second year Therapeutic class of the Bachelor of Applied Science (Radiotherapy Technology) course.

Medical Applications/AIR Prize

Presented, in association with the Australian Institute of Radiography, to the student achieving the best academic record in the third year of the Diploma of Applied Science (Therapeutic Radiography) course.

MIM Holdings Limited Prize

Awarded to the student who obtains the highest mark in the subject 'Field Excursions VI' in the Bachelor of Applied Science - Applied Geology course.

Mining and Metallurgical Bursaries Fund Prizes

Donated by the Australasian Institute of Mining and Metallurgy and awarded to the students of the Bachelor of Applied Science - Applied Geology course who show the most outstanding potential in completing the course.

Oil and Colour Chemists' Association, Australia (Queensland Section) Prize

Awarded to a final year student enrolled in a course within the Department of Chemistry who has obtained the best results in Materials Science studies in the final year of Applied Chemistry, covering Materials Science I and II.

PESA (Qld) Geology Award

Awarded to the student who obtains the highest results for the third year geology subjects relating to the petroleum industry.

Physics Staff Prize

Awarded to the student completing the second year of the multidisciplinary Bachelor of Applied Science course, and undertaking major studies in Physics, who obtains the best academic record for that year.

Prospectors Supplies Pty Ltd Prize

Awarded to the first year student of the Bachelor of Applied Science Geology course who obtains the highest aggregate marks for the year.

Royal Australian Chemical Institute Queensland Branch Prize

Awarded to the student showing, at the first attempt, the greatest proficiency in the second year of the full-time course (or its part-time equivalent) leading either to the Bachelor of Applied Science (Applied Chemistry) or to the multidisciplinary Bachelor of Applied Science with major studies in Chemistry.

Schering/AIR Award

Presented, in association with the Australian Institute of Radiography, to the student achieving the best academic record in the second year Diagnostic class of the Bachelor of Applied Science (Medical Imaging Technology) course.

Charles O. Schloman Memorial Prize

Donated by Astra Panels Pty Ltd, and awarded to the student undertaking the Bachelor of Applied Science (Applied Chemistry) or the chemistry major of the multidisciplinary Bachelor of Applied Science who, in the opinion of the Head of Department, shows at the first attempt the greatest overall proficiency in the second year Organic Chemistry units of the full-time course (or its part-time equivalent). If no student is considered suitable for the award in a given year, no prize will be awarded.

Byron Watkins Prize

Awarded annually in honour of Mr Byron Watkins, the foundation Chief Instructor of the Chemistry Department of the former Central Technical College. The award is sponsored by the Industrial and Applied Chemistry Past Students' Association.

It is made to the graduating student in the Chemistry strand of the Associate Diploma in Applied Science course, who shows the highest level of achievement during the course.

Winthrop/AIR Travelling Fellowship

Presented, in association with the Australian Institute of Radiography, to the graduand of the Diploma of Applied Science (Diagnostic or Therapeutic Radiography) who achieves the best academic record over the three year course.

