

2009 Course Summary Sheet

■ Bachelor of Applied Science (Honours) (SC60)

This course is a one year honours program in one of the following disciplines: Chemistry, Ecology, Environmental Science, Geology, Life Science, Mathematics or Physics.

This document will assist you with the selection of your study program and completion of your enrolment. Other useful information can be found on the Student Services website studentservices.qut.com/, which can also be accessed via the Online Enrolment portlet.

Location: Gardens Point campus

Course Duration: 2 semesters (1 year) full-time, 4 semesters (2 years) part-time

Course Commencement: Course commences in February and July

Total Credit Points: 96

Standard Credit Points/Full-time Semester: 48

Course Coordinator: Associate Professor Peter Mather, Phone 07 3138 1737, Fax 07 3138 2330, Room R412 Gardens Point, Email: p.mather@qut.edu.au

Major Coordinators:

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Physics Major: Dr Esa Jaatinen, Phone 07 3138 4281, Fax 07 3138 9079, Room M205 Gardens Point, Email: e.jaatinen@qut.edu.au

Entry Requirements

To be eligible for admission, students should have completed one of the Faculty's Bachelor of Applied Science degrees (LS37, MA54, SC01, SC40 or SC45) or equivalent and should have attained a grade point average of at least 5.0 over that degree, including grades of at least 5 in all units directly relevant to the proposed honours program. Application for admission should normally be made at the end 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 Engineering and Statistics) may provide suitable entry to the program.

Course Structure

The honours program comprises 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.

Part-time candidates undertake annually 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.

The general course structure consists of a project (see below) and units or advanced topics chosen from the program of the selected major. Students will develop their program of study with their supervisor.

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

Limits on grades of 3: A new policy concerning grades of 3 comes into effect from 1 January 2009 (QUT MOPP C/9.2). With effect from this date grades of 3 will no longer be considered a conceded or low pass but will be classified as a fail grade. Any grades of 3 awarded prior to 1 January 2009 will retain the conceded pass status and will be counted for graduation purposes up to the maximum number of grades of 3 permitted for your course. Grades of 3 incurred in units that commence after 1 January 2009 will not count towards your degree. The maximum number of pre-2009 grades of 3 permitted for this course can be found [here](#).

Important Note: Please ensure you select the correct teaching period, class and location code for all units you are enrolled in. All units in this course have a location of Gardens Point and a class of Internal.

| | | Credit Points | Contact Hrs/Wk | Location Code | Prerequisite(s) | Corequisite(s) |
|---|--|--------------------------|---------------------------|--------------------------|------------------------|-----------------------|
| CHEMISTRY MAJOR | | | | | | |
| Year 1, Semester 1 | | | | | | |
| PCB700-1 | Research Project | 12 | | GP | | |
| PCB700-2 | Research Project | 12 | | GP | | |
| PCB780-1 | Advanced Topics in Chemistry 1 | 12 | 6 | GP | | |
| PCB742 | Elective Unit | 12 | 4 | GP | | |
| Year 1, Semester 2 | | | | | | |
| PCB700-3 | Research Project | 12 | | GP | | |
| PCB700-4 | Research Project | 12 | | GP | | |
| PCB700-5 | Research Project | 12 | | GP | | |
| PCB780-2 | Advanced Topics in Chemistry 1 | 12 | 6 | GP | | |
| ECOLOGY, ENVIRONMENTAL SCIENCE & GEOLOGY MAJOR | | | | | | |
| Year 1, Semester 1 | | | | | | |
| NRB720-1 | Project | 12 | | GP | | |
| NRB730-1 | Research Methods and Strategies | 12 | | GP | | |
| NRB730-2 | Research Methods and Strategies | 12 | | GP | | |
| NRB735 | Advanced Studies in Resource Sciences | 12 | | GP | | |
| Year 1, Semester 2 | | | | | | |
| NRB720-2 | Project | 12 | | GP | | |
| NRB720-3 | Project | 12 | | GP | | |
| NRB720-4 | Project | 12 | | GP | | |
| NRB720-5 | Project | 12 | | GP | | |
| LIFE SCIENCE MAJOR | | | | | | |
| Year 1, Semester 1 | | | | | | |
| LSB850-1 | Research Strategies | 6 | 2 | GP | | |
| LSB851-1 | Readings in Life Science 1 | 12 | | GP | | LSB850-1 |
| LSB852-1 | Project | 30 | | GP | | LSB850-1 |
| Year 1, Semester 2 | | | | | | |
| LSB850-2 | Research Strategies | 6 | 2 | GP | | |
| LSB851-2 | Readings in Life Science 1 | 12 | | GP | | LSB850-2 |
| LSB852-2 | Project | 30 | | GP | | LSB850-2 |

| | | Credit Points | Contact Hrs/Wk | Location Code | Prerequisite(s) | Corequisite(s) |
|--|--|----------------------|-----------------------|----------------------|------------------------------------|--------------------------------|
| MATHEMATICS MAJOR | | | | | | |
| Year 1, Semester 1 | | | | | | |
| MAN787-1 | Project | 12 | | GP | | |
| (36 credit points of elective units selected from the list below)* | | 36 | | GP | | |
| Year 1, Semester 2 | | | | | | |
| MAN787-2 | Project | 12 | | GP | | |
| MAN787-3 | Project | 12 | | GP | | |
| (24 credit points of elective units selected from the list below) * | | 24 | | | | |
| Elective list (Mathematics) – 60 credit points to be selected | | | | | | |
| MAN717 | Minor Project | 12 | | GP | <i>Permission from coordinator</i> | |
| MAN761 | Analysis | 12 | 3 | GP | MAB311 | |
| MAN764 | Applied Mathematical Modelling | 12 | 3 | GP | MAB613, MAB672 | |
| MAN765 | Bayesian Data Analysis | 12 | 3 | GP | MAB524 | <i>Recommended: MAB624</i> |
| MAN766 | Applied Time Series Analysis | 12 | 3 | GP | MAB524, MAB536 or MAB526 | |
| MAN768 | Advanced Techniques in Operations Research | 12 | 3 | GP | MAB525 | |
| MAN769 | Mathematics of Finance | 12 | 3 | GP | MAB413 | <i>Recommended: MAB623</i> |
| MAN771 | Computational Mathematics 4 | 12 | 3 | GP | MAB522, MAB613 | |
| MAN774 | Perturbation Methods | 12 | 3 | GP | MAB413, MAB521 | |
| MAN775 | Statistical Modelling of Financial Processes | 12 | 3 | GP | MAB524, MAB536 or MAB526 | |
| MAN777 | Mathematics of Fluid Flow | 12 | 3 | GP | MAB613 | MAB672 |
| MAN778 | Applications of Discrete Mathematics | 12 | 3 | GP | MAB461 or MAB621 | |

Up to 12 credit points from the following lists can be included in the 60 credit points of electives:

| | | | | | | |
|--------|---------------------------------|----|---|----|--------------------|--------------------------------|
| MAB522 | Computational Mathematics 3 | 12 | 4 | GP | MAB311, MAB420 | |
| MAB524 | Statistical Inference | 12 | 4 | GP | MAB314 | |
| MAB536 | Time Series Analysis | 12 | 4 | GP | MAB101, MAB314, | |
| MAB613 | Partial Differential Equations | 12 | 4 | GP | MAB311, MAB413 | |
| MAB672 | Advanced Mathematical Modelling | 12 | 4 | GP | MAB312, MAB422 | <i>Recommended: MAB413</i> |

Up to two units of a quantitative nature from another Faculty or School or from Access Grid units offered by AMSI may be included with the permission of the Mathematics Coordinator. The unit(s) must be of honours level and relevant to the proposed program. Examples of suitable units are:

| | | | | | | |
|--------|---------------------------|--|--|--|--------|--|
| EFN505 | Financial Risk Management | | | | | |
| PCB706 | Quantum Mechanics | | | | PCB561 | |

* The Course Coordinator may approve a student taking 24 credit points of elective units (together with MAN787-1 and MAN787-2) in Semester 1 and 36 credit points of elective units (together with MAN787-3) in Semester 2.

| | | Credit Points | Contact Hrs/Wk | Location Code | Prerequisite(s) | Corequisite(s) |
|--------------------------------|--------------------------------|--------------------------|---------------------------|--------------------------|--|-----------------------|
| PHYSICS MAJOR | | | | | | |
| Year 1, Semester 1 | | | | | | |
| PCB700-1 | Project | 12 | | GP | | |
| PCB700-2 | Project | 12 | | GP | | |
| PCB706 | Quantum Mechanics* | 12 | 4 | GP | PCB561 | |
| | Elective | 12 | | GP | | |
| Year 1, Semester 2 | | | | | | |
| PCB700-3 | Project | 12 | | GP | | |
| PCB700-4 | Project | 12 | | GP | | |
| PCB700-5 | Project | 12 | | GP | | |
| | Elective | 12 | | GP | | |
| Elective List (Physics) | | | | | | |
| PCB664 | Lasers and Photonics | 12 | 4 | GP | PCB260 or EEB340 & MAB134 or MAB311 | |
| PCB669 | Astrophysics 2 | 12 | 4 | GP | PCB362 & MAB134 or MAB521 | |
| PCB708 | Advanced Topics in Physics** | 12 | 4 | GP | | |
| PCN716 | Advanced Topics in Physics 2** | 12 | 4 | GP | | |

Other units may be chosen in consultation with the Course Coordinator

* An alternative may be permitted

** These units typically comprise two components chosen from atmospheric aerosol physics, classical mechanics, non-linear optics, quantum electrodynamics, advanced general relativity or aspects of units from the Masters in Medical Physics course.