Bachelor of Arts/Bachelor of Applied Science (IF86)

Year offered: 2010
Admissions: No
Course duration (full-time): 4 Years
Domestic fees (indicative): 2010: CSP rate 2010 available July 2009
Domestic Entry: Course has been discontinued
International Entry: Course has been discontinued
Past rank cut-off: 72
Past OP cut-off: 13
OP Guarantee: Yes
Assumed knowledge: English (4, SA) and Maths B (4, SA)
Preparatory studies: For information on acquiring assumed knowledge visit http://www.studentservices.qut.edu.au/apply/ug/info/knowledge.jsp
Total credit points: 384 (192 cp in the Bachelor of Arts and 192 cp in the Bachelor of Applied Science)
Standard credit points per full-time semester: 48
Course coordinator: Contract Ms Eve Teague (Arts) - Dr Perry Hartfield (Science and Technology)
Discipline coordinator: Dr Perry Hartfield (Biochemistry Major); Dr Marion Bateson (Biotechnology Major); Dr Robert Johnson (Chemistry Major); Dr Ian Williamson (Ecology Major); Dr Robin Thwaites (Environmental Science Major); Dr Emad Kiriakous (Forensic Science Major); Dr Gary Huftile (Geoscience Major); Dr Scott McCue (Mathematics Major); Dr Christine Knox (Microbiology Major); Dr Greg Michael (Physics Major)
Campus: Gardens Point and Kelvin Grove

Course discontinued
This course has been discontinued and is open to continuing students only.

Career Opportunities
As a graduate of this course you will receive both a Bachelor of Arts degree and a Bachelor of Applied Science degree. This combination of degrees provides a valuable foundation for a wide range of careers in areas such as government, diplomacy, higher education and public service. Opportunities in tourism, translation, and the hospitality industry are open to those with a Language major. Complementary majors chosen from Arts and Science provide an excellent background for careers in environmental management.

Course Design
A feature of the course design is the flexibility and choice it offers. Students can tailor the double degree to their career interests by combining any one of the 10 majors that are available in the Bachelor of Applied Science (SC01) degree with a specialisation chosen from a wide range of offerings in the humanities.

The program is integrated so that students will study both science and arts units in each semester.

Professional Recognition
Relevant professional bodies for the Bachelor of Applied Science (SC01) are listed under the separate entry for the course. Eligibility for membership depends on the majors undertaken.

Further Information
For further information about this course, please contact the following:

Humanities Coordinator
Ms Eve Teague
Phone: +61 7 3138 4541
Email: e.teague@qut.edu.au

Science and Technology Coordinator
Dr Perry Hartfield
Phone: +61 7 3138 2782
Email: enquiry.scitech@qut.edu.au

Example of Full-Time Course Structure

<table>
<thead>
<tr>
<th>Year 1, Semester 1</th>
<th>Year 2, Semester 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Major Unit - Arts</td>
<td>Major Unit - Arts</td>
</tr>
<tr>
<td>Applied Skills and Scholarship</td>
<td>Discipline Major Unit or Elective unit</td>
</tr>
<tr>
<td>Two Science units (SC01 Level 1): Foundation units</td>
<td>Two Science units (SC01 Levels 1 and 2: Level 2 from Major)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Year 1, Semester 2</th>
<th>Year 2, Semester 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Major Unit - Arts</td>
<td>Major Unit - Arts</td>
</tr>
<tr>
<td>Discipline Major Unit or Elective unit</td>
<td>Minor Unit - Arts</td>
</tr>
<tr>
<td>Two Science units (SC01 Level 1): at least one Foundation unit</td>
<td>Two Science Units (SC01 Levels 1 and 2:</td>
</tr>
</tbody>
</table>
### Course structure - Major in Biochemistry

#### Year 1, Semester 1
- SCB111 Chemistry 1
- SCB112 Cellular Basis of Life

#### Year 1, Semester 2
- SCB120 Plant and Animal Physiology
- SCB121 Chemistry 2

#### Year 2, Semester 1
- SCB110 Science Concepts and Global Systems
  - Plus either:
    - MAB101 Statistical Data Analysis 1
    - Or
    - MAB105 Preparatory Mathematics

#### Year 2, Semester 2
- SCB122 Cell and Molecular Biology
- SCB123 Physical Science Applications

### Year 3, Semester 1
- LQB381 Biochemistry: Structure and Function
- LQB383 Molecular and Cellular Regulation

### Year 3, Semester 2
- LQB481 Biochemical Pathways and Metabolism
- LQB483 Molecular Biology Techniques

### Year 4, Semester 1
- LQB581 Functional Biochemistry
- LQB582 Biomedical Research Technologies

### Year 4, Semester 2
- LQB681 Biochemical Research Skills
- LQB682 Protein Biochemistry and Bioengineering

### Course structure - Major in Biotechnology

#### Year 1, Semester 1
- SCB111 Chemistry 1
- SCB112 Cellular Basis of Life

#### Year 1, Semester 2
- SCB120 Plant and Animal Physiology
- SCB121 Chemistry 2

#### Year 2, Semester 1
- SCB110 Science Concepts and Global Systems
  - Plus either:
    - MAB101 Statistical Data Analysis 1
    - Or
    - MAB105 Preparatory Mathematics

#### Year 2, Semester 2
- SCB122 Cell and Molecular Biology
- SCB123 Physical Science Applications

#### Year 3, Semester 1
- LQB381 Biochemistry: Structure and Function
- LQB383 Molecular and Cellular Regulation

#### Year 3, Semester 2
- LQB483 Molecular Biology Techniques
- LQB484 Introduction to Genomics and Bioinformatics

#### Year 4, Semester 1
- TWO units selected from:
**Course structure - Major in Chemistry**

<table>
<thead>
<tr>
<th>Year 1, Semester 1</th>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>SCB111</td>
<td>Chemistry 1</td>
<td></td>
</tr>
<tr>
<td>SCB121</td>
<td>Chemistry 2</td>
<td></td>
</tr>
<tr>
<td>SCB112</td>
<td>Cellular Basis of Life</td>
<td></td>
</tr>
<tr>
<td>SCB110</td>
<td>Science Concepts and Global Systems</td>
<td></td>
</tr>
<tr>
<td>MAB101</td>
<td>Statistical Data Analysis 1</td>
<td></td>
</tr>
<tr>
<td>MAB105</td>
<td>Preparatory Mathematics</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Year 2, Semester 1</th>
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</thead>
<tbody>
<tr>
<td>SCB120</td>
<td>Plant and Animal Physiology</td>
<td></td>
</tr>
<tr>
<td>SCB122</td>
<td>Cell and Molecular Biology</td>
<td></td>
</tr>
<tr>
<td>SCB123</td>
<td>Physical Science Applications</td>
<td></td>
</tr>
<tr>
<td>SCB131</td>
<td>Experimental Chemistry</td>
<td></td>
</tr>
<tr>
<td>MAB120</td>
<td>Algebra and Calculus</td>
<td></td>
</tr>
<tr>
<td>SCB110</td>
<td>Science Concepts and Global Systems</td>
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</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Year 3, Semester 1</th>
<th></th>
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<tbody>
<tr>
<td>NQB302</td>
<td>Earth Surface Systems</td>
<td></td>
</tr>
<tr>
<td>NQB321</td>
<td>Ecology</td>
<td></td>
</tr>
<tr>
<td>NQB421</td>
<td>Experimental Design</td>
<td></td>
</tr>
<tr>
<td>NQB422</td>
<td>Genetics and Evolution</td>
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</table>

**Course structure - Major in Environmental Science**

<table>
<thead>
<tr>
<th>Year 1, Semester 1</th>
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</thead>
<tbody>
<tr>
<td>SCB111</td>
<td>Chemistry 1</td>
<td></td>
</tr>
<tr>
<td>SCB112</td>
<td>Cellular Basis of Life</td>
<td></td>
</tr>
<tr>
<td>SCB110</td>
<td>Science Concepts and Global Systems</td>
<td></td>
</tr>
<tr>
<td>MAB101</td>
<td>Statistical Data Analysis 1</td>
<td></td>
</tr>
<tr>
<td>MAB105</td>
<td>Preparatory Mathematics</td>
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</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Year 2, Semester 1</th>
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</thead>
<tbody>
<tr>
<td>NQB521</td>
<td>Population Genetics and Molecular Ecology</td>
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</tr>
<tr>
<td>NQB523</td>
<td>Population Management</td>
<td></td>
</tr>
<tr>
<td>NQB622</td>
<td>Conservation Biology</td>
<td></td>
</tr>
<tr>
<td>NQB623</td>
<td>Ecological Systems</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Year 4, Semester 1</th>
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</tr>
</thead>
<tbody>
<tr>
<td>SCB111</td>
<td>Chemistry 1</td>
<td></td>
</tr>
<tr>
<td>SCB112</td>
<td>Cellular Basis of Life</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Year 4, Semester 2</th>
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<tbody>
<tr>
<td>SCB120</td>
<td>Plant and Animal Physiology</td>
<td></td>
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</tbody>
</table>
SCB121  Chemistry 2

Year 2, Semester 1
SCB110  Science Concepts and Global Systems
       Plus either:
MAB101  Statistical Data Analysis 1
       Or
MAB105  Preparatory Mathematics

Year 2, Semester 2
NQB202  History of Life on Earth
SCB123  Physical Science Applications

Year 3, Semester 1
NQB302  Earth Surface Systems
NQB321  Ecology

Year 3, Semester 2
NQB403  Soils and the Environment
NQB421  Experimental Design

Year 4, Semester 1
NQB501  Environmental Modelling
NQB502  Field Methods in Natural Resource Sciences

Year 4, Semester 2
NQB601  Sustainable Environmental Management
NQB602  Environmental Chemistry

Course structure - Major in Forensic Science

Year 1, Semester 1
SCB111  Chemistry 1
SCB112  Cellular Basis of Life

Year 1, Semester 2
SCB121  Chemistry 2
SCB122  Cell and Molecular Biology

Year 2, Semester 1
SCB110  Science Concepts and Global Systems
       Plus either:
MAB101  Statistical Data Analysis 1
       Or
MAB105  Preparatory Mathematics

Year 2, Semester 2
NQB202  History of Life on Earth
SCB222  Exploration of the Universe

Year 3, Semester 1
NQB311  Mineralogy
NQB314  Sedimentary Geology

Year 3, Semester 2
NQB411  Petrology of Igneous and Metamorphic Rocks
Course structure - Major in Mathematics (WITH Mathematics C from Senior)

Year 1, Semester 1
MAB101 Statistical Data Analysis 1
MAB111 Mathematical Sciences 1B

Year 1, Semester 2
MAB112 Mathematical Sciences 1C
MAB210 Statistical Modelling 1

Year 2, Semester 1
MAB220 Computational Mathematics 1
One Science unit - selected from:
SCB110 Science Concepts and Global Systems
SCB112 Cellular Basis of Life

Year 2, Semester 2
One Science unit - selected from:
SCB110 Science Concepts and Global Systems
SCB112 Cellular Basis of Life

Year 3, Semester 1
Two Level 2 Mathematics units* - available units are:
MAB311 Advanced Calculus
MAB312 Linear Algebra
MAB313 Mathematics of Finance
MAB314 Statistical Modelling 2
* Students must complete at least one of MAB311, MAB312, MAB413

Year 3, Semester 2
Two Level 2 Mathematics units* - available units are:
MAB315 Operations Research 2

Course structure - Major in Mathematics (WITHOUT Mathematics C from Senior)

Year 1, Semester 1
MAB100 Mathematical Sciences 1A
MAB101 Statistical Data Analysis 1

Year 1, Semester 2
MAB111 Mathematical Sciences 1B
MAB112 Mathematical Sciences 1C

Year 2, Semester 1
MAB220 Computational Mathematics 1
One Science unit - selected from:
SCB110 Science Concepts and Global Systems
SCB112 Cellular Basis of Life

Year 2, Semester 2
Two Level 2 Mathematics units - available units are:
MAB311 Advanced Calculus
MAB312 Linear Algebra
MAB313 Mathematics of Finance
MAB314 Statistical Modelling 2
* Students must complete at least one of MAB311, MAB312, MAB413

Year 3, Semester 1
Two Level 2 Mathematics units* - available units are:
MAB315 Operations Research 2
MAB210  Statistical Modelling 1
One Science unit - selected from:
SCB110  Science Concepts and Global Systems
SCB112  Cellular Basis of Life

Year 3, Semester 1
Two Level 2 Mathematics units* - available units are:
MAB311  Advanced Calculus
MAB312  Linear Algebra
MAB313  Mathematics of Finance
MAB314  Statistical Modelling 2
* Students must complete at least one of MAB311, MAB312, MAB413

Year 3, Semester 2
Two Level 2 Mathematics units* - available units are:
MAB315  Operations Research 2
MAB413  Differential Equations
MAB414  Applied Statistics 2
MAB420  Computational Mathematics 2
MAB422  Mathematical Modelling
MAB480  Introduction to Scientific Computation
* Students must complete at least one of MAB311, MAB312, MAB413

Year 4, Semester 1
Two Level 3 Mathematics units - available units are:
MAB521  Applied Mathematics 3
MAB522  Computational Mathematics 3
MAB523  Introduction to Quality Management
MAB525  Operations Research 3A
MAB526  Statistical Science 3
MAB672  Advanced Mathematical Modelling

Year 4, Semester 2
Two Level 3 Mathematics units - available units are:
MAB524  Statistical Inference
MAB613  Partial Differential Equations
MAB621  Discrete Mathematics
MAB623  Financial Mathematics
MAB624  Applied Statistics 3
MAB625  Operations Research 3B

Course structure - Major in Microbiology
Year 1, Semester 1
SCB111  Chemistry 1
SCB112  Cellular Basis of Life

Year 1, Semester 2
SCB120  Plant and Animal Physiology
SCB121  Chemistry 2

Year 2, Semester 1
SCB110  Science Concepts and Global Systems
Plus either:
MAB101  Statistical Data Analysis 1
Or
MAB105  Preparatory Mathematics

Year 2, Semester 2
SCB122  Cell and Molecular Biology
SCB123  Physical Science Applications

Year 3, Semester 1
LQB381  Biochemistry: Structure and Function
LQB386  Microbial Structure and Function

Year 3, Semester 2
LQB483  Molecular Biology Techniques
LQB486  Clinical Microbiology 1

Year 4, Semester 1
LQB586  Clinical Microbiology 2
LQB587  Applied Microbiology 1: Water, Air and Soil

Year 4, Semester 2
LQB686  Microbial Technology and Immunology
LQB687  Applied Microbiology 2: Food and Quality Assurance

Course structure - Major in Physics
Year 1, Semester 1
MAB121  Calculus and Differential Equations
SCB111  Chemistry 1

Year 1, Semester 2
MAB122  Algebra and Analytic Geometry
PQB250  Mechanics and Electromagnetism
<table>
<thead>
<tr>
<th>Year 2, Semester 1</th>
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</thead>
<tbody>
<tr>
<td>SCB110  Science Concepts and Global Systems</td>
<td></td>
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<tr>
<td>SCB112  Cellular Basis of Life</td>
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<tr>
<td>Year 2, Semester 2</td>
<td></td>
</tr>
<tr>
<td>MAB220  Computational Mathematics 1</td>
<td></td>
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<tr>
<td>PQB251  Waves and Optics</td>
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<tr>
<td>Year 3, Semester 1</td>
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<tr>
<td>MAB311  Advanced Calculus</td>
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<tr>
<td>PQB350  Thermodynamics of Solids and Gases</td>
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<tr>
<td>Year 3, Semester 2</td>
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<tr>
<td>PQB450  Energy, Fields and Radiation</td>
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<tr>
<td>PQB451  Electronics and Instrumentation</td>
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<td>Year 4, Semester 1</td>
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<tr>
<td>PQB550  Quantum and Condensed Matter Physics</td>
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<td>PQB551  Physical Analytical Techniques</td>
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<td>Year 4, Semester 2</td>
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<tr>
<td>PQB650  Advanced Theoretical Physics</td>
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<tr>
<td>PQB651  Experimental Physics</td>
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**Major in the Bachelor of Arts - International and Global Studies**

<table>
<thead>
<tr>
<th>International and Global Studies</th>
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<tbody>
<tr>
<td>Seven (7) units are required for an International and Global Studies (IGS) Major. These can include units completed in the IGS Major up to 2009 as well as any completed from the following list.</td>
<td></td>
</tr>
<tr>
<td>BSB119  Global Business</td>
<td></td>
</tr>
<tr>
<td>CLB049  The Global Teacher</td>
<td></td>
</tr>
<tr>
<td>CLB104  Colonialism and Independence in Asia-Pacific</td>
<td></td>
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<tr>
<td>CLB105  Australia and the South Pacific</td>
<td></td>
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<tr>
<td>CLB106  Modern China</td>
<td></td>
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<tr>
<td>CLB108  Nations and Nationalism in Modern Europe</td>
<td></td>
</tr>
<tr>
<td>CLB109  World Regions</td>
<td></td>
</tr>
<tr>
<td>CLB112  South East Asia in Focus</td>
<td></td>
</tr>
<tr>
<td>MDB454  Science, Technology and Society</td>
<td></td>
</tr>
<tr>
<td>SCB110  Science Concepts and Global Systems</td>
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</tr>
<tr>
<td>Students may select one language unit as an elective in the International Studies Strand. Students may also undertake a Combined Major in Languages/International and Global Studies, comprising: 3 elective units, 4 units in</td>
<td></td>
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</table>

**Major in the Bachelor of Arts - Society and Change**

<table>
<thead>
<tr>
<th>Society and Change</th>
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<tbody>
<tr>
<td>Seven (7) units are required for a Society and Change Major. These can include units completed in the Society and Change Major up to 2009 as well as any completed from the following list.</td>
<td></td>
</tr>
<tr>
<td>CLB107  The Classical World</td>
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</tr>
<tr>
<td>CLB110  Environment and Society</td>
<td></td>
</tr>
<tr>
<td>CLB111  Environmental Hazards</td>
<td></td>
</tr>
<tr>
<td>JSB171  Justice and Society</td>
<td></td>
</tr>
<tr>
<td>KMB003  Sex Drugs Rock ‘n’ roll</td>
<td></td>
</tr>
<tr>
<td>MDB454  Science, Technology and Society</td>
<td></td>
</tr>
<tr>
<td>PUB209  Health, Culture and Society</td>
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<tr>
<td>PYB067  Human Sexuality</td>
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<tr>
<td>SCB110  Science Concepts and Global Systems</td>
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</tr>
<tr>
<td>SWB102  The Human Condition</td>
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<tr>
<td>SWB104  Interpersonal Communication</td>
<td></td>
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<tr>
<td>SWB212  Community Work</td>
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</tr>
<tr>
<td>SWB214  Team Practice and Group Processes</td>
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</tr>
<tr>
<td>SWB222  Advanced Communication for Human Services and Social Work</td>
<td></td>
</tr>
<tr>
<td>SWB223  People, Society and Social Work</td>
<td></td>
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<tr>
<td>SWB302  Social Policy Processes</td>
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</table>

**Major in the Bachelor of Arts - Ethics and Human Rights**

<table>
<thead>
<tr>
<th>Ethics and Human Rights</th>
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</thead>
<tbody>
<tr>
<td>Seven (7) units are required for an Ethics and Human Rights Major. These can include units completed in the Ethics and Human Rights Major up to 2009 as well as any completed from the following list.</td>
<td></td>
</tr>
<tr>
<td>JSB171  Justice and Society</td>
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</tr>
<tr>
<td>JSB175  Social Ethics and the Justice System</td>
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</tr>
<tr>
<td>LWS101  Ethics Law and Health Care</td>
<td></td>
</tr>
<tr>
<td>NSB113  Diversity and Health: Introduction to Indigenous and Multicultural Perspectives</td>
<td></td>
</tr>
<tr>
<td>PUB486  Ethics and the Law in Health Service Delivery</td>
<td></td>
</tr>
<tr>
<td>SWB105  Introduction to Human Rights and Ethics</td>
<td></td>
</tr>
<tr>
<td>SWB219  Ethical and Legal Dimensions of Human Services and Social Work</td>
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</tbody>
</table>

**Major in the Bachelor of Arts - Community Studies**

<table>
<thead>
<tr>
<th>Community Studies</th>
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</table>
Community Studies

Seven (7) units are required for a Community Studies Major. These can include units completed in the Community Studies Major up to 2009 as well as any completed from the following list.

EDB040 Indigenous Knowledge: Research Ethics and Protocols
EDB041 Indigenous Australia: Country, Kin and Culture
SWB100 Introduction to Human Services and Social Work
SWB102 The Human Condition
SWB103 Contemporary Social and Community Issues
SWB104 Interpersonal Communication
SWB204 Child and Family Services: Introduction
SWB206 Disability Services: Introduction
SWB207 Services to Young People: Introduction
SWB212 Community Work
SWB214 Team Practice and Group Processes
SWB216 The Human Dimensions of Space
SWB219 Ethical and Legal Dimensions of Human Services and Social Work
SWB220 Practice Theories
SWB221 Social Work Processes and Methods
SWB222 Advanced Communication for Human Services and Social Work
SWB302 Social Policy Processes
SWB304 Child and Family Services: Advanced
SWB305 Community and Youth Corrections
SWB306 Disability Services: Advanced
SWB307 Services to Young People: Advanced
SWB308 Child Protection Intervention Skills

Major in the Bachelor of Arts - Australian Studies

Australian Studies

Seven (7) units are required for an Australian Studies Major. These can include units completed in the Australian Studies Major up to 2009 as well as any completed from the following list.

CLB101 Australian Society and Culture
CLB102 Australian Historical Studies
CLB103 Interpreting the Past
CLB104 Colonialism and Independence in Asia-Pacific
CLB105 Australia and the South Pacific
CLB106 Modern China
CLB107 The Classical World
CLB108 Nations and Nationalism in Modern Europe

Mandarin

Six sequenced units are required for a Mandarin Discipline Major. These can include units completed in the Mandarin Discipline Major up to 2009 as well as those from the following list:

AMB030 Mandarin for Chinese
AMB031 Mandarin 1
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>AMB032</td>
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</tr>
<tr>
<td>AMB033</td>
<td>Mandarin 3</td>
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<td>AMB034</td>
<td>Mandarin 4</td>
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<tr>
<td>AMB035</td>
<td>Mandarin 5</td>
</tr>
<tr>
<td>AMB036</td>
<td>Mandarin 6</td>
</tr>
<tr>
<td>AMB037</td>
<td>Mandarin 7</td>
</tr>
<tr>
<td>AMB038</td>
<td>Mandarin 8</td>
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</table>

**Overseas Units - All Languages**

<table>
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<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>AMB041</td>
<td>International Intensive Program</td>
</tr>
<tr>
<td>AMB042</td>
<td>International Summer School or Equivalent</td>
</tr>
<tr>
<td>AMB043</td>
<td>In-Country Study - A</td>
</tr>
<tr>
<td>AMB044</td>
<td>In-Country Study - B</td>
</tr>
</tbody>
</table>

**French**

The following units are taught at UQ. Six sequenced units are required for a French Discipline Major. These can include units completed in the French Discipline Major up to 2009 as well as those from the following list:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>FREN1010</td>
<td>French 1/Introductory French A</td>
</tr>
<tr>
<td>FREN1020</td>
<td>French 2/Introductory French B</td>
</tr>
<tr>
<td>FREN3112</td>
<td>French Language A *</td>
</tr>
<tr>
<td>FREN2020</td>
<td>French 4/Intermediate French B</td>
</tr>
<tr>
<td>FREN3113</td>
<td>French Language B</td>
</tr>
<tr>
<td>FREN3114</td>
<td>French 5/French Language C</td>
</tr>
<tr>
<td>FREN3115</td>
<td>French 6/French Language D</td>
</tr>
<tr>
<td>FREN3116</td>
<td>French 7/Advanced French Language **</td>
</tr>
<tr>
<td>FREN3330</td>
<td>French for Business</td>
</tr>
<tr>
<td>FREN3360</td>
<td>Le cinema en Francais</td>
</tr>
<tr>
<td>FREN3120</td>
<td>French 8/Advanced Oral French</td>
</tr>
</tbody>
</table>

**German**

The following units are taught at UQ. Six sequenced units are required for a German Discipline Major. These can include units completed in the German Discipline Major up to 2009 as well as those from the following list:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>GRMN1010</td>
<td>German 1/Introductory German Language 1</td>
</tr>
<tr>
<td>GRMN1020</td>
<td>German 2/Introductory German Language 2</td>
</tr>
<tr>
<td>GRMN2010</td>
<td>German 3/Continuing German Language 1</td>
</tr>
<tr>
<td>GRMN2020</td>
<td>German 4/Continuing German Language 2</td>
</tr>
<tr>
<td>GRMN3010</td>
<td>German 5/Advanced German Language 1</td>
</tr>
<tr>
<td>GRMN3020</td>
<td>German 6/Advanced German Language 2</td>
</tr>
<tr>
<td>GRMN3110</td>
<td>German 7/Advanced German Language 3</td>
</tr>
<tr>
<td>GRMN3120</td>
<td>German 8/Advanced German Language 4</td>
</tr>
</tbody>
</table>

**Japanese**

The following units are taught at UQ. Six sequenced units are required for a Japanese Discipline Major. These can include units completed in the Japanese Discipline Major up to 2009 as well as those from the following list:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>JAPN1011</td>
<td>Japanese 1/Introductory Japanese 1</td>
</tr>
<tr>
<td>JAPN2011</td>
<td>Japanese 2/Introductory Japanese 2</td>
</tr>
<tr>
<td>JAPN2101</td>
<td>Japanese 3/Intermediate Japanese 1</td>
</tr>
<tr>
<td>JAPN3001</td>
<td>Japanese 4/Intermediate Japanese 2</td>
</tr>
</tbody>
</table>

* FREN2010 is third semester French for students who have done HHB061 and HHB0062 (semester 1 and 2 of beginner French). FREN3112 is first semester French for students who have successfully complete year 12 French in the last three years.

** Students who have already completed HHB066 French 6 at QUT should not enrol in FREN3116.
JAPN3101 Japanese 5/Continuing Japanese 3
JAPN3102 Japanese 6/Continuing Japanese 4
JAPN3200 Japanese 7/Multimedia Japanese
OR
JAPN3240 Modern Literary Texts
OR
JAPN3210 Polite Japanese Written & Spoken Styles
JAPN3500 Japanese 8/Language and Society in Japan

Indonesian
The following units are taught at UQ. Six sequenced units are required for an Indonesian Discipline Major. These can include units completed in the Indonesian Discipline Major up to 2009 as well as those from the following list:

INDN1000 Indonesian 1/Introductory Indonesian A
INDN1001 Indonesian 2/Introductory Indonesian B
INDN2000 Indonesian 3/Intermediate Indonesian A
INDN2001 Indonesian 4/Intermediate Indonesian B
INDN3000 Indonesian 5/Advanced Indonesian A
INDN3001 Indonesian 6/Advanced Indonesian B
INDN3003 Indonesian 7/Indonesian Through the Media
INDN3005 Indonesian 8/Indonesian Translation B

Discipline Major - Social Science

SOCIAL SCIENCE
Six (6) units are required for a Social Science Discipline Major which comprises Sociology units and Political Studies units. These can include units completed in the Social Science Discipline Major up to 2009 as well as any completed from the following list.

Sociology
CLB403 Gender And Sexuality Issues For Teachers
JSB272 Theories of Crime
JSB372 Youth Justice
JSB378 Drugs and Crime
JSB971 Gender Crime and the Criminal Justice System
KMB003 Sex Drugs Rock ‘n’ roll
MDB454 Science, Technology and Society
PYB067 Human Sexuality
PUB209 Health, Culture and Society
SWB216 The Human Dimensions of Space

Political Studies
EDB039 Indigenous Politics and Political Culture
JSB271 Policy Governance and Justice
KCB302 Political Communication
SWB218 Social Change, Politics, Policy and Activism
SWB302 Social Policy Processes

Potential Careers:
Academic, Actuary, Administrator, Analytical Chemist, Astrophysicist, Biochemist, Biologist, Biotechnologist, Chemist, Chemist Industrial, Coastal Scientist, Conservation Biologist, Corporate Secretary, Database Manager, Ecologist, Environmental Health Officer, Environmental Scientist, Forensic Scientist, Geologist, Geophysicist, Geoscientist, Government Officer, Health Physicist, Higher Education Worker, Hydrogeologist, Immunologist, Industrial Chemist, Information Officer, Laboratory Technician (Chemistry), Manager, Mapping Scientist/Photogrammetrist, Marine Scientist, Mathematician, Medical Biotechnologist, Medical Physicist, Microbiologist, Molecular Biologist, Natural Resource Scientist, Network Administrator, Network Manager, Physicist, Plant Biotechnologist, Policy Officer, Population Ecologist, Programmer, Project Developer, Project Manager, Public Servant, Quantitative Analyst, Statistician, Virologist.

UNIT SYNOPSES

AMB030 MANDARIN FOR CHINESE
In this unit students will receive instructions in listening and speaking Putonghua, reading and writing Pinyin Romanisation and reading and writing simplified characters. They learn differences in structure and nuance between their native dialect and Putonghua.

Antirequisites: HHB050 and HUB450

Equivalents: HHB030

Credit points: 12

Campus: Gardens Point

Teaching period: 2010 SEM-1 and 2010 SUM-1

AMB031 MANDARIN 1
This unit introduces students who have little or no prior knowledge of Chinese Mandarin to the four macro skills of listening, speaking, reading and writing through an integrated communicative approach to teaching. Content will include: the Mandarin sound and tonal systems; the Pinyin Romanisation system; introduction to Chinese character writing, greetings and introductions; family, identification of nationalities, places and objects, locations and directions.

Antirequisites: HHB051 and HUB453

Equivalents: HHB031

Credit points: 12

Campus: Gardens Point

Teaching period: 2010 SEM-1 and 2010 SUM-1

AMB032 MANDARIN 2

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This subject continues to develop the four macro skills of listening, speaking, reading and writing through an integrated communicative approach. While there is further consolidation of the knowledge of the Pinyin Romanisation system, greater attention is devoted to the reading and writing of characters. With acquisition of language, students receive further exposure to aspects and characteristics of Chinese culture.

Prerequisites: AMB031 or HHB031 or HUB453 or HHB051

AMB033 MANDARIN 3
This unit is designed to meet student needs to further develop their basic knowledge and skills for understanding, speaking, reading and writing Mandarin Chinese in a wide range of everyday situations. Eligible students are those who have: successfully completed introductory Mandarin units HHB031/AMB031 and HHB032/AMB032 at QUT; or successfully completed equivalent Mandarin study elsewhere. Graduates from high schools who have completed Year 12 Mandarin should also enrol in this unit. (Students who have undergone primary and secondary education in China and Taiwan are not eligible for this unit. Students who cannot speak Mandarin Chinese but can read and write Chinese script are not eligible either. They should enrol in AMB030 Mandarin for Chinese.)

Prerequisites: AMB032 or HHB032

AMB034 MANDARIN 4
This unit follows on from AMB033. Students further develop their knowledge and skills needed to understand, speak, read and write Mandarin Chinese in a wide range of everyday situations and to give presentations on given topics. Resources include textbook, workbook, CDs, DVDs and online multimedia materials. Students learn about 400 Chinese characters and have further exposure to various aspects of Chinese society and culture.

Prerequisites: AMB033 or HHB033

AMB035 MANDARIN 5
This unit develops students’ communication skills in using Mandarin Chinese at the intermediate level. It provides students with opportunities to further practise and consolidate what they have learned in the previous units, and at the same time it expands students' knowledge and skills by engaging them in learning new contents and in participating in various types of communicative tasks. Students are exposed to a wide range of topics of interest to them about Chinese society and culture. Resources include textbook, workbook, CDs, DVDs and online multimedia programs.

Prerequisites: AMB034 or HHB034

AMB036 MANDARIN 6
This unit continues on from the first semester. It provides Mandarin language instruction and interaction at the intermediate level. It allows students to discuss various aspects of Chinese society and culture in relation to the society and culture they come from and familiar with. Resources include textbook, workbook, CDs, DVDs and online multimedia programs.

Prerequisites: AMB035

AMB037 MANDARIN 7
This unit primarily builds on the language skills students have acquired at the intermediate level. It provides further language instruction and interaction for those students who want to develop their communication skills even further in Mandarin Chinese to an advanced level. Apart from set materials, students are also encouraged to make full use of online recourses and current computer technology to research on topics of their interest about Chinese language, society and culture. In accordance with student makeup, business Chinese may be included.

Prerequisites: AMB036

AMB038 MANDARIN 8
This unit follows on from the first semester. It provides further language instruction and interaction for those students who want to proceed to an advanced proficiency level in Mandarin Chinese. Apart from set materials, students are also encouraged to make full use of online recourses and current computer technology to research on topics of their interest about Chinese language, society and culture. In accordance with student makeup, business Chinese may be included.

Prerequisites: AMB037

AMB041 INTERNATIONAL INTENSIVE PROGRAM
Equivalents: HHB056

AMB042 INTERNATIONAL SUMMER SCHOOL OR EQUIVALENT
Equivalents: HHB057

AMB043 IN-COUNTRY STUDY - A
This unit involves an approved course of study at a designated foreign institution for one semester.

Equivalents: HHB058

Other requisites: Subject to Unit Coordinator approval. Students are required to have completed (AMB031 or HHB031) and (AMB032 or HHB031), GPA of 4.5 or above and completion of 96 credit
There are now competing ideologies and contexts shaping, dominating and influencing the way we think historically about Australia. This unit presents a past in Australia that is constructed, invented, contested and open to interpretation.

**Credit points:** 12  **Campus:** Kelvin Grove  **Teaching period:** 2010 SEM-2

**CLB103 INTERPRETING THE PAST**

For the purposes of this unit, 'history' will be taken to mean a set of practices developed by professional historians to produce knowledge about the past. The study of these practices promotes understandings of how historians set about their work, the rules that govern their methods, the reliability of historical knowledge and the value of history socially and culturally.

**Equivalents:** HHB121  **Credit points:** 12  **Campus:** Kelvin Grove  **Teaching period:** 2010 SEM-1

**CLB104 COLONIALISM AND INDEPENDENCE IN ASIA-PACIFIC**

This unit provides a general introduction to the history, geography and cultures of the Asia-Pacific region. It traces the rise and decline of colonial empires, the growth of nationalism in East Asia, Southeast Asia and the Pacific and the dynamic policies of the Asia-Pacific and their search for identity, independence, growth and stability.

**Credit points:** 12  **Campus:** Kelvin Grove  **Teaching period:** 2010 SEM-2

**CLB105 AUSTRALIA AND THE SOUTH PACIFIC**

This unit is based on a critical study of the evolving relationship between Australia and the Pacific Islands. The key issue in this unit is: does Australia have a Pacific history?

**Credit points:** 12  **Campus:** Kelvin Grove  **Teaching period:** 2010 SEM-2

**CLB106 MODERN CHINA**

The unit provides students with the knowledge of how China, formerly a Dynastic Empire, was disempowered by Western Imperialism, only to obtain independence through the governmental embrace of Communism. The role of powerful individuals in determining China's destiny, and an understanding of how the country's fortunes changed over time are additional features of the content.

**Credit points:** 12  **Campus:** Kelvin Grove  **Teaching period:** 2010 SEM-1

**CLB107 THE CLASSICAL WORLD**

The aim of this unit is to endeavour to explain/understand particular societies and their transition in the Classical World, by focusing attention on selected periods, aspects and individuals pertaining to ancient Greece and Rome.
CLB108 NATIONS AND NATIONALISM IN MODERN EUROPE
This unit will develop an understanding of matters pertinent to the evolution of nationalism in Europe in the modern era. This will include the influence of social movements and cultural and economic issues.

Credit points: 12  Campus: Kelvin Grove  Teaching period: 2010 SEM-2

CLB109 WORLD REGIONS
This unit offers an introductory geographical overview of global regions. This is an excellent basis from which to develop an understanding of complex interrelationships between regions and nations. The integrated knowledge gained is of current and practical value to professionals in many fields requiring a knowledge of international affairs including teachers, planners, journalists, business managers and travellers and people in general.

Credit points: 12  Campus: Kelvin Grove  Teaching period: 2010 SEM-1

CLB110 ENVIRONMENT AND SOCIETY
People and nature interact to create distinctive and dynamic places and landscapes. Applied geography, with its integrating perspective and skills-base, helps us to understand this. The discipline hence addresses some of our most pressing social and environmental problems. Geography objectively views human activities, natural systems and their inter-relationships in terms of consequent spatial patterns and impacts on landscapes, regions and places.

Credit points: 12  Campus: Kelvin Grove  Teaching period: 2010 SEM-2

CLB111 ENVIRONMENTAL HAZARDS
This unit takes a geographical perspective to investigate the characteristics and distribution of environmental hazards, patterns of risk and vulnerability, and how people perceive, manage and adjust to hazardous environments.

Credit points: 12  Campus: Kelvin Grove  Teaching period: 2010 SEM-2

CLB112 SOUTH EAST ASIA IN FOCUS
Australia’s interaction with Southeast Asia, including our most populous nearest neighbour, Indonesia, continues to increase in significance. This unit examines aspects of Southeast Asian geography, environment, society and culture, in a contemporary framework.

Credit points: 12  Campus: Kelvin Grove  Teaching period: 2010 SEM-2

CLB113 AUSTRALIAN GEOGRAPHICAL STUDIES
Australia faces challenging problems and changes in relation to its changing population, socio-economic development and environmental sustainability. Many of these problems, relating to land-use and settlement patterns, migration trends, resource and hazard distribution, regional socio-economic structure, remoteness and accessibility etc, have a geographical basis. The aim is to describe and analyse, Australia’s natural and social landscapes, their interaction, and the changes occurring in them from a geographical perspective.

Credit points: 12  Campus: Kelvin Grove  Teaching period: 2010 SEM-1

CLB114 GEOGRAPHY IN THE FIELD
The unit builds upon the geography program to develop advanced understanding of social science research approaches and information capture/analysis. This provides a foundation in research and project design, relevant to a wide range of professions. You will develop skills in the preparation of project grant applications and in presenting a research plan orally.

Credit points: 12  Campus: Kelvin Grove  Teaching period: 2010 SEM-2

CLB403 GENDER AND SEXUALITY ISSUES FOR TEACHERS
This unit addresses the following topics: gender and sexualities in cultural and school contexts; historical overview of gender relations; theoretical frameworks for gender and current debates in Australia about gender and equity; femininity and masculinity as social constructs; sexuality and the body; violence and gender; debates about boys' behaviour and performance in Australian schools.

Credit points: 12  Contact hours: 3 per week  Campus: Internet, Kelvin Grove and External  Teaching period: 2010 SEM-2

EDB038 INDIGENOUS AUSTRALIAN CULTURE STUDIES
This unit encourages an appreciation of the two distinct indigenous cultures of Australia and how external forces to Aboriginal and Torres Strait Islander cultures caused social, economic and political changes. It looks at traditional family life and organisation.

Credit points: 12  Campus: Kelvin Grove  Teaching period: 2010 SEM-1

EDB039 INDIGENOUS POLITICS AND POLITICAL CULTURE
This unit examines issues and influences underlying the world of indigenous politics: political representation; land rights; health; education; community development; criminal
justice; culture and heritage. This unit has an Australian focus with New Zealand and North American comparisons.

**Credit points:** 12  
**Campus:** Kelvin Grove  
**Teaching period:** 2010 SEM-2

**EDB040 INDIGENOUS KNOWLEDGE: RESEARCH ETHICS AND PROTOCOLS**

This unit provides students with a critical examination of the major ethical and moral issues arising from the designing and conducting of research 'on/in' Australian Indigenous people/communities or issues. The unit examines the calls by Indigenous researchers for the decolonising of research methods - a process which critically examines the historical and philosophical bases of Western research and the frustrations of Indigenous researchers with various Western paradigms, academic traditions and methodologies.

**Credit points:** 12  
**Campus:** Kelvin Grove  
**Teaching period:** 2010 SEM-1 and 2010 SEM-2

**JSB171 JUSTICE AND SOCIETY**

The Justice degree is about producing competent justice professionals. In order to achieve this purpose, this degree combines knowledge of the criminal justice system with an understanding and appreciation of the complexities of social justice. The purpose of this unit is to introduce students to the structural parameters of social justice.

**Equivalents:** JSB131, JSB011, JSB101  
**Credit points:** 12  
**Contact hours:** 3  
**Campus:** Gardens Point and External  
**Teaching period:** 2010 SEM-1

**JSB175 SOCIAL ETHICS AND THE JUSTICE SYSTEM**

It is essential for those employed within the justice system to be able to competently and confidently work at the borders between ethics and the law. Ethical ability will enable practitioners to critically assess the moral status of current laws, to interpret acceptable standards of behaviour in situations not covered by the laws, and to develop shared understandings of moral responsibility in justice organisations and the wider community.

**Equivalents:** JSB134  
**Credit points:** 12  
**Contact hours:** 3  
**Campus:** Gardens Point and External  
**Teaching period:** 2010 SEM-1

**JSB271 POLICY GOVERNANCE AND JUSTICE**

This unit will enable you to become familiar with policy-making practices and wider issues of governance. The unit aims to introduce the theory and practice of public policy with an emphasis on policy issues relevant to criminal and social justice. It analyses processes in policy development such as policy formation, writing, implementation and evaluation. You will gain tools for participating in policy development processes in both the public and community sectors.

**Equivalents:** JSB251, JSB081  
**Credit points:** 12  
**Contact hours:** 3  
**Campus:** Gardens Point and External  
**Teaching period:** 2010 SEM-2

**JSB272 THEORIES OF CRIME**

The main aim of this unit is to introduce the student to the study of theoretical criminology. This unit will address the social context of crime but is not exclusively sociological. The study of criminology is essentially multi-disciplinary and this is reflected in the diversity of theoretical approaches. Theory is typically offered as distinct from methods of research, however, together they provide the foundation for policy and practice. The unit provides an analytical framework in order to critically assess the epistemological claims and justifications found in criminological theory. Criminological theories are viewed embedded governmental practices aimed at ensuring the regulation and control of particular 'problem populations'.

**Antirequisites:** JSN113  
**Equivalents:** JSB231, JSB018  
**Credit points:** 12  
**Contact hours:** 3  
**Campus:** Gardens Point and External  
**Teaching period:** 2010 SEM-1

**JSB372 YOUTH JUSTICE**

This unit is concerned with the way in which a 'youth crime problem' is constructed and the implications of this for particular cohorts of young people in contemporary Australia. It is also concerned with the administration and management of youth crime through formal systems designed to prevent and reduce unlawful acts. Particular attention is drawn to the historical development of youth justice in Australia and to the changing nature of youth crime control across jurisdictions. Contemporary articulations of youth crime control are examined in relation to Queensland's system of youth justice, particularly as this relates to young indigenous people, young women and those from various social classes and ethnic groups. Theoretically, the unit takes as its starting point a genealogical analysis that focuses on questions of knowledge, power, regulation and discipline. These are discussed in relation to the contemporary government of young people in Australia and other 'western' countries.

**Equivalents:** JSB232, JSB041  
**Credit points:** 12  
**Contact hours:** 3  
**Campus:** Gardens Point and External  
**Teaching period:** 2010 SEM-2
JSB378 DRUGS AND CRIME
Drugs, both legal and illegal, present many challenges to individuals, their families and communities as well as the criminal justice and health systems in Australia. This course examines issues and inter-relationships between drugs and crime. The course includes a detailed examination of drug use in Australia, including trends, patterns of usage and explanations for illicit drug use. A concentrated examination of the relationships between drugs and crime is a key focus as well as the current state of policy responses to drug control and prevention in Australia and internationally.
Credit points: 12    Contact hours: 3    Campus: Gardens Point and External    Teaching period: 2010 SEM-1

JSB971 GENDER CRIME AND THE CRIMINAL JUSTICE SYSTEM
This unit examines the experiences and treatment of men and women as criminals, victims and workers within the criminal justice system by asking whether and how: a) offending patterns vary according to gender, b) experiences of victimisation differ for men and women, c) the treatment and experiences of male and female offenders, victims and workers within the criminal justice system differ. Theories about crime, victimisation and criminal justice practice in relation to gender are also explored as are intersections between gender and Indigenous status. Recent developments in criminal justice policy and practice that could potentially effect future change with regard to gender inequities are critically examined.
Credit points: 12    Contact hours: 3    Campus: Gardens Point and External    Teaching period: 2010 SEM-1

JSB979 FORENSIC SCIENTIFIC EVIDENCE
The word 'forensic' once meant anything relating to a law court. However today the term 'forensic science' refers to a whole new subject: it means using science to solve legal issues. As science, and the many sub-disciplines of science, are appearing in court with ever-increasing rapidity, there is a clear need for scientists to understand the foundations to the law, the ways in which law reasons, the adversarial process, and the basics to the key area of evidence law. The aim of this unit is first to provide you with an understanding of evidence law, with a particular emphasis upon the foundations to reception of scientific evidence, and the ways in which expert scientific witnesses are received in our courts. The unit aims to clarify the links between science and law, as well as to articulate the differences between these two increasingly inter-twined disciplines.
Equivalents: JSB937, JSB444    Credit points: 12    Contact hours: 3    Campus: Gardens Point and External    Teaching period: 2010 SEM-2

KCB302 POLITICAL COMMUNICATION
This unit provides an overview of the theory and practice of political communication and the role of discursive strategies in the social construction of meaning, with particular reference to media and communications industries. The unit examines political campaigns in Australia and internationally, through a critical examination of theories of media influence, as well as notions of crisis management, rhetorical models, persuasion theory, and the use of images as a power resource to succeed in political campaigns. The unit explores how survey research helps the planning and development of political strategies through an analysis of their application in recent political campaigns.
Equivalents: KCB311    Credit points: 12    Contact hours: 4 per week    Campus: Kelvin Grove    Teaching period: 2010 SEM-1

KMB003 SEX DRUGS ROCK 'N' ROLL
In this unit, you gain an insight into the interaction between music and society by analysing the artistic, economic, and political landscape of the diverse, innovative music of the 21st century including rock and pop music, world music, dance music, indigenous music and new age music.
Equivalents: KMB640    Credit points: 12    Contact hours: 3 per week    Campus: Kelvin Grove and Caboolture    Teaching period: 2010 SEM-1

LQB381 BIOCHEMISTRY: STRUCTURE AND FUNCTION
This unit extends basic organic chemistry theory to the level of the biological macromolecules. A clear understanding of the structure and function of these molecules is essential to a student's understanding of the metabolism of living cells. Hence this biomolecular unit is a fundamental prerequisite for all advanced units in the various disciplines in the field of life sciences.
Prerequisites: (SCB121 and SCB122) or (SCB111 and SCB121) or SCB113    Antirequisites: LSB275 and LSB325 and LSB308    Credit points: 12    Contact hours: 4 per week    Campus: Gardens Point    Teaching period: 2010 SEM-1

LQB383 MOLECULAR AND CELLULAR REGULATION
Molecular and Cellular Regulation is a second year unit and is a continuation and expansion of topics introduced in SCB112 Cellular Basis of Life and SCB122 Cell & Molecular Biology. Molecular and Cellular Regulation strengthens the focus on the molecular and genetic aspects of cellular processes and the consequences to the organism of failure of these basic processes. Topics taught relate to gene structure and regulation in prokaryotes and eukaryotes and the role of gene expression in the development of complex organisms. Related concepts such as cell signalling, communication, proliferation and survival are further developed in this unit.
Prerequisites: SCB122 or LSB238    Antirequisites: LSB468 and LSB338    Credit points: 12    Contact hours:
4 per week  Campus: Gardens Point  Teaching period: 2010 SEM-1

LQB386 MICROBIAL STRUCTURE AND FUNCTION
Aspects of microbiology impinge upon many facets of daily life, for example, human health, genetic engineering, the food industry and the built and natural environment. The unit introduces you to and provides you with a solid foundation in the basic microbiology required for progression to advanced studies in Microbiology. This unit provides knowledge about safe handling and study of microorganisms that is also very important in many other disciplines, because micro-organisms are used as models and tools in a wide range of study areas.
Prerequisites: SCB112 and (SCB121 or SCB113)
Antirequisites: LSB328  Credit points: 12  Contact hours: 4 per week  Campus: Gardens Point  Teaching period: 2010 SEM-1

LQB484 INTRODUCTION TO GENOMICS AND BIOINFORMATICS
The completion of the Human Genome project, along with similar projects on other organisms of a prokaryote and eukaryote nature, marked the beginning of a major revolution in fundamental biology that changed our understanding of the natural world. To understand how information on genome structure-function relationships (ie bioinformatics) is being used in areas such as gene discovery, disease diagnosis and drug development, students need to understand how the information content of DNA and proteins is extracted and analysed. This unit introduces students to the approaches to database mining and genome exploration.
Prerequisites: LQB383 or LSB338 or LSN101 and LSN102
Antirequisites: LSB537, LSB619, LSB469  Credit points: 12  Contact hours: 4 per week  Campus: Gardens Point  Teaching period: 2010 SEM-2

LQB486 CLINICAL MICROBIOLOGY 1
Micro-organisms are very important as pathogens of humans and animals, and their accurate clinical diagnosis is essential for appropriate treatment and management of infections. This unit builds upon the foundational topics in microbiology that you learned in LQB386 (Microbial Structure and Function) and starts preparing you for a career in a microbiology laboratory in clinical practice, industry or research. The unit will advance your knowledge and skills in classical methods of isolation and identification of bacteria in clinical specimens and introduce aspects of microbial pathogenesis and antibiotic sensitivity. The unit will provide you with an understanding of clinically important viruses, and will commence your training in diagnostic parasitology.
Prerequisites: LQB386 or LSB328  Antirequisites: LSB435, LSB547  Credit points: 12  Contact hours: 4 per week  Campus: Gardens Point  Teaching period: 2010 SEM-2

LQB581 FUNCTIONAL BIOCHEMISTRY
This unit will study advanced biochemical concepts with a focus on metabolism, signalling pathways, systems and networks that coordinate and regulate the functional behaviour of cells and tissues.
Credit points: 12  Contact hours: 5 per week  Campus: Gardens Point  Teaching period: 2010 SEM-1

LQB582 BIOMEDICAL RESEARCH TECHNOLOGIES
This unit will study the technical principles and practical techniques that are essential for advancing research and development in biochemistry and biotechnology.
Credit points: 12  Contact hours: 4 per week  Campus: Gardens Point  Teaching period: 2010 SEM-1
LQB583 GENETIC RESEARCH TECHNOLOGY
The tools available for the discovery and manipulation of new genes are increasing exponentially and, in turn, this is having a significant impact in many areas of the life sciences. The true potential for this ultimately relies on the ability to link genes and their function. There are many strategies, both targeted and global, which facilitate an understanding of gene and genome structure function relationships. These strategies rely on integrated technologies based on molecular genetics, molecular biology and genetic engineering. The identification of function leads then to unlimited potential for detection and manipulation of these genes in human, animal and plant systems.
Prerequisites: LQB483  Credit points: 12  Contact hours: 4 per week  Campus: Gardens Point  Teaching period: 2010 SEM-1

LQB584 MEDICAL CELL BIOLOGY
This unit builds and extends the understanding of basic theoretical and practical aspects of molecular cell biology developed in previous cell and molecular biology units. Medical Cell Biology develops and extends the context of the cellular environment and its central role within the organism providing all of the biological functions required by the organism to survive, defend and protect itself from disease and trauma. An understanding of cell biology theory and molecular mechanisms of animal development and disease is essential for introduction to higher level units in medical biotechnology.
Prerequisites: LQB383 or LSB338  Antirequisites: LSB449, LSB503, LSN584  Credit points: 12  Contact hours: 4 per week  Campus: Gardens Point  Teaching period: 2010 SEM-1

LQB585 PLANT GENETIC MANIPULATION
The potential of plant biotechnology can only be recognised as a result of the significant advances being made in technologies enabling the genetic manipulation of plants. Familiarity with the strategies, techniques and breadth of applications is essential as a basis for anyone planning a career in plant biotechnology. The unit is designed with a significant emphasis on achieving technical expertise in plant genetic manipulation and control of gene expression.
Credit points: 12  Contact hours: 4 per week  Campus: Gardens Point  Teaching period: 2010 SEM-1

LQB586 CLINICAL MICROBIOLOGY 2
TBA
Credit points: 12  Contact hours: 4 per week  Campus: Gardens Point  Teaching period: 2010 SEM-1

LQB587 APPLIED MICROBIOLOGY 1: WATER, AIR AND SOIL
Issues relating to microbial populations within the environment are of great interest and relevance to the community, and also to scientists. Building on the foundation of basic microbiology, in this advanced level unit you will gain a strong understanding of the nature of microbial populations in water, air and soil, and their importance to the human population. This unit is issues-based, encouraging a problem solving approach as you investigate/study microbial pollution, bioremediation, biogeochemical cycles and a healthy environment. You will gain knowledge and skills in analysis and interpretation of water, air and soil populations, which will permit you to investigate real-world problems.
Prerequisites: LQB386, LSB328, or LSB492  Equivalents: LSB528  Credit points: 12  Contact hours: 4 per week  Campus: Gardens Point  Teaching period: 2010 SEM-1

LWS101 ETHICS LAW AND HEALTH CARE
Nursing practice involves making decisions with and for others. This involves making evaluations of what is in the best interest of others, what are nurses' obligations to others and what will best protect or enhance their well-being. Hence, decision-making in nursing practice is bounded by normative considerations and these normative considerations fall into two groups: those constituted by the law and those constituted by ethics. This unit has been designed to provide for nursing students and practitioners an opportunity to develop a reflective understanding of the place of law and ethics in nursing and a professional awareness of current legal statutes and ethical discussions as they apply to nursing practice.
Credit points: 12  Contact hours: 3 per week  Campus: Kelvin Grove and Caboolture  Teaching period: 2010 SEM-1 and 2010 SEM-2

MAB100 MATHEMATICAL SCIENCES 1A
To enrol you should have (1) at least Sound Achievement in 4 semesters of Mathematics B, or (2) a grade of least 4 in MAB105, or (3) the equivalent. This unit will reinforce the notion of a function with particular emphasis on polynomial, trigonometric, exponential and logarithmic functions including arithmetic and geometric progressions and the binomial theorem. Calculus will be reviewed and expanded with an emphasis on integration and on integration techniques and applications. Vectors and matrices will be introduced with vectors interpreted geometrically and algebraically and matrices as representations of linear systems, with applications. If time permits, complex numbers will be introduced. This unit is incompatible with HA in Senior Mathematics C.
Prerequisite(s): MAB105 or SA in Senior Maths B (or equivalent)  Credit points: 12  Contact hours: 4 per week  Campus: Gardens Point  Teaching period: 2009 SEM-1, 2009 SEM-2 and 2009 SUM  Incompatible with:
Prior pass in MAB180, MAB131, HA in Senior Maths C

MAB101 STATISTICAL DATA ANALYSIS 1
Experiments, observational studies, sampling, and polls; data and variables; framework for describing and manipulating probability; independence; Binomial and Normal distributions; population parameters and sample statistics; concepts of estimation and inference; standard error; confidence intervals for means and proportions; tests of hypotheses on means and proportions (one sample and two independent samples); inference using tables of counts; modelling relationships using regression analysis; model diagnosis; use of statistical software.

Assumed knowledge: Grade of at least Sound Achievement in Senior Mathematics C (or equivalent) or MAB100 is assumed knowledge.

Credit points: 12
Contact hours: 4 per week
Campus: Gardens Point
Teaching period: 2010 SUM-2, 2010 SEM-1 and 2010 SEM-2

MAB105 PREPARATORY MATHEMATICS
This unit is a substitute for Senior Mathematics B for those students who need the equivalent background for the successful study of units which assume it. It includes: basic number facts, natural numbers, integers, rational numbers, real numbers and their operations; basic algebra; functions and equations, graphs, linear functions, equations and applications; systems of linear equations; quadratic, exponential, logarithmic and trigonometric functions, properties and applications; introduction to calculus; rates of change, derivatives, rules of differentiation, second derivatives, maxima and minima and applications; integration and applications. This unit is incompatible with an exit assessment of High Achievement or better in Senior Mathematics B.

Assumed knowledge: Year 10 Level 6 Mathematics is assumed knowledge

Credit points: 12
Contact hours: 4 per week
Campus: Gardens Point
Teaching period: 2010 SEM-1 and 2010 SEM-2

MAB111 MATHEMATICAL SCIENCES 1B
Limits and continuity, including limits of rational functions, functions involving radicals, trigonometric functions; L'Hôpital's Rule; differentiation techniques - parametric, logarithmic; inverse functions and their derivatives; partial derivatives. Introduction to differential equations and mathematical modelling. Riemann sums, fundamental theorems of integral calculus; applications including solids of revolution and first-order-separable differential equations. Taylor series, Fourier series and applications. Students must have completed four semesters of Senior Mathematics C with an exit achievement of Sound Achievement, or have passed MAB100 (or equivalent).

Assumed knowledge: Grade of at least Sound Achievement in Senior Mathematics C (or equivalent) or MAB100 is assumed knowledge.

Credit points: 12
Contact hours: 4 per week
Campus: Gardens Point
Teaching period: 2010 SUM-2, 2010 SEM-1 and 2010 SEM-2

MAB112 MATHEMATICAL SCIENCES 1C
This unit includes the following: introduction to linear algebra including vectors, matrices and linear systems; the real and complex number systems; first and second order differential equations. Students must have completed four semesters of Senior Mathematics C with an exit level of Sound Achievement, or have passed MAB100 (or equivalent).

Corequisites: MAB111

Credit points: 12
Contact hours: 4 per week
Campus: Gardens Point

MAB120 ALGEBRA AND CALCULUS
This unit introduces and reviews the elementary concepts of function, calculus, matrices and vectors with special reference to applications in science, technology and business where appropriate. Topics covered include the algebra of complex numbers, elementary functions (polynomial, trigonometric, exponential and logarithmic) and their properties, differentiation and integration methods and principles, geometric and algebraic applications of vectors and the solution of linear systems using matrices.

Assumed knowledge: Grade of at least Sound Achievement in Senior Mathematics B (or equivalent) or MAB105 is assumed knowledge.

Credit points: 12
Contact hours: 4 per week
Campus: Gardens Point
Teaching period: 2010 SUM-1, 2010 SEM-2 and 2010 SEM-2

MAB121 CALCULUS AND DIFFERENTIAL EQUATIONS
This unit extends the areas of function and calculus introduced in MAB120 by introducing series representations for functions and more advanced methods of differentiation and integration for functions of one variable. A strong connection to real world problems is made by introducing the use of differential equations in modelling, and exploring appropriate methods of solution. Practical calculations of volumes and surface areas of solids of revolution extend your interpretations of the definite integral. Taylor and Fourier series are introduced as a means of approximating functions by sums of polynomials and periodic functions. Some more advanced methods for indefinite integrals, such as partial fraction decomposition, are also introduced.

Assumed knowledge: Grade of at least Sound Achievement in Senior Mathematics C (or equivalent) or MAB125 or MAB180 or MAB121 is assumed knowledge.

Credit points: 12
Contact hours: 4 per week
Campus: Gardens Point
Teaching period: 2010 SUM-1, 2010 SEM-2 and 2010 SUM
MAB122 ALGEBRA AND ANALYTIC GEOMETRY
This unit extends your knowledge in the areas of functions, calculus, matrices and vectors introduced in MAB120 by introducing functions of more than one variable, partial derivatives and multiple integrals, vector valued functions, and matrix methods for the solution of large systems of linear equations.

**Equivalents:** MAB112, MAB127, MAB132

**Credit points:** 12

**Contact hours:** 4 per week

**Campus:** Gardens Point

**Teaching period:** 2010 SEM-1, 2010 SEM-2 and 2010 SUM

MAB210 STATISTICAL MODELLING 1
This unit includes: probability; independence; system reliability; using conditional probability in modelling; Bayes; introductory Markov chains; random variables and distributions; special distributional models; Bernoulli process; Poisson process; exponential; introductory queuing processes; expected values and moments; goodness-of-fit tests; measures of dependence; introductory bivariate and correlation properties; conditioning arguments.

**Assumed knowledge:** Grade of Sound Achievement in Senior Mathematics C (or equivalent) or MAB120 is assumed knowledge. Students are advised to enrol in either MAB121 or MAB122 in the same semester if not previously completed. **Credit points:** 12

**Contact hours:** 4 per week

**Campus:** Gardens Point

**Teaching period:** 2010 SEM-1 and 2010 SEM-2

MAB220 COMPUTATIONAL MATHEMATICS 1
This unit includes: sources of error; computer arithmetic; solution of nonlinear equations in one variable; solution of systems of linear equations; interpolation; finite differences; numerical differentiation and integration; solution of first order linear differential equations; MATLAB programming. Students without an exit level of Sound Achievement in four semesters of Senior Mathematics C need to be concurrently enrolled in MAB100 if not completed earlier.

**Assumed knowledge:** Grade of at least Sound Achievement in Senior Mathematics B (or equivalent) or MAB105 and corequisite MAB120 or MAB125 or MAB100 or MAB180 if you don't have Senior Mathematics C is assumed knowledge. **Credit points:** 12

**Contact hours:** 4 per week

**Campus:** Gardens Point

**Teaching period:** 2010 SEM-1 and 2010 SEM-2

MAB311 ADVANCED CALCULUS
This unit includes the following: polar coordinates; parametric equations; conic sections; quadric surfaces; vector-valued functions; Fourier series; functions of several variables; graphs; partial derivatives; total derivatives; extrema; Lagrange multipliers; Taylor series for multivariable functions; double and triple integrals; Green's theorems; line and surface integrals; divergence theorem; Stoke's theorem; applications.

**Prerequisites:** (MAB111 or MAB121) and (MAB112 or MAB122)

**Credit points:** 12

**Contact hours:** 4 per week

**Campus:** Gardens Point

**Teaching period:** 2010 SEM-1

MAB312 LINEAR ALGEBRA
This unit covers the following broad topics from linear algebra: matrix analysis; eigenvalues and eigenvectors; vector spaces; inner product spaces.

**Prerequisites:** (MAB111 or MAB121) and (MAB112 or MAB122)

**Credit points:** 12

**Contact hours:** 4 per week

**Campus:** Gardens Point

**Teaching period:** 2010 SEM-1

MAB313 MATHEMATICS OF FINANCE
This unit includes: interest rates; solution of problems in compound interest; applications of annuities; valuation of securities; quantitative techniques in business and finance. Students need to concurrently enrol in MAB111 unless already completed.

**Prerequisites:** MAB111 or MAB121

**Antirequisites:** MAN313

**Credit points:** 12

**Contact hours:** 4 per week

**Campus:** Gardens Point

**Teaching period:** 2010 SEM-2

MAB314 STATISTICAL MODELLING 2
This unit includes: models for stochastic processes and statistical methods, which have applications in engineering, information technology, finance, and physical and life sciences. Markov chains; random walks; branching processes; queuing processes; long-term behaviour of processes; use of generating functions; bivariate and conditional distributions; transformations of random variables; beta and gamma distributions; mixture distributions; order statistics, minimum and maximum.

**Prerequisites:** MAB112 and MAB210

**Credit points:** 12

**Contact hours:** 4 per week

**Campus:** Gardens Point

**Teaching period:** 2010 SEM-1

MAB315 OPERATIONS RESEARCH 2
This unit introduces the essential features of operations research methods. It develops a number of basic mathematical techniques to solve generic problems and the theoretical foundations of these techniques. Students should develop the ability to apply various operations research methods, algorithms and techniques in the solution of practical problems. Students will also look at the applications of operations research techniques to real-world problems.

**Prerequisites:** MAB210 and (MAB111 or MAB122)

**Credit points:** 12

**Contact hours:** 4 per week

**Campus:** Gardens Point

**Teaching period:** 2010 SEM-1

MAB413 DIFFERENTIAL EQUATIONS
This unit includes: linear and nonlinear differential equations; series methods; Laplace transform; transforms of derivatives and integrals; systems of differential equations; basic theory on linear systems; solution of linear systems
with constant coefficients; matrix methods; phase plane analysis.

**Prerequisites:** MAB311 or MAB312  
**Antirequisites:** MAN413  
**Credit points:** 12  
**Contact hours:** 4 per week  
**Campus:** Gardens Point  
**Teaching period:** 2010 SEM-2

### MAB414 APPLIED STATISTICS 2

This unit includes: Simple linear regression (revision), multiple linear regression, making inferences from regressions, choosing a model, checking model assumptions, general linear models - analysis of covariance, ANOVA revisited, designing experiments, issues in designing experiments, analysing experimental results, further experimental designs, assumptions, and how to cope if they aren't met, simulations.

**Prerequisites:** MAB101 and MAB111  
**Assumed knowledge:** MAB112 is recommended prior study  
**Credit points:** 12  
**Contact hours:** 4 per week  
**Campus:** Gardens Point  
**Teaching period:** 2010 SEM-2

### MAB420 COMPUTATIONAL MATHEMATICS 2

This unit includes: direct methods for systems of linear equations; solution methods for special matrix systems (banded matrix systems, block-banded matrix systems, data structures and algorithms for storing and manipulating sparse matrices, reordering schemes); vector and matrix norms (basic theory and definitions, error bounds for direct methods, condition numbers); iterative methods for systems of linear equations (Jacobi, Gauss-Siedel, Successive Over-Relaxation, conjugate gradient); iterative methods for the eigenvalue problem.

**Prerequisites:** MAB220 and MAB312  
**Credit points:** 12  
**Contact hours:** 4 per week  
**Campus:** Gardens Point  
**Teaching period:** 2010 SEM-2

### MAB422 MATHEMATICAL MODELLING

This unit includes models developed with the "real world" description. These models are taken from the areas of cancer research, population growth and engineering. Emphasis is on mathematical modelling and not on the development of new mathematical content.

**Prerequisites:** MAB121  
**Antirequisites:** MAN422  
**Assumed knowledge:** MAB220 is recommended for prior/current study for exposure to MATLAB  
**Credit points:** 12  
**Contact hours:** 4 per week  
**Campus:** Gardens Point  
**Teaching period:** 2010 SEM-2

### MAB480 INTRODUCTION TO SCIENTIFIC COMPUTATION

This unit teaches students how to implement a mathematical algorithm in a modern scientific computing environment (eg Matlab). A case-study approach is used with an emphasis on writing efficient code. Also an overview of other software packages used in mathematics will be given.

**Prerequisite(s):** MAB112 or MAB132 or MAB182  
(Recommended: MAB210 or MAB220)  
**Credit points:** 12  
**Contact hours:** 4 per week  
**Campus:** Gardens Point  
**Teaching period:** 2009 SEM-2  
**Incompatible with:** MAB380, ITB849

### MAB511 APPLIED STATISTICS 3A

This unit includes: partial differential equations such as the wave, heat and Laplace equations; special functions (gamma, delta, Bessel and error functions, Legendre polynomials); vector analysis and applications (vector algebra, vector calculus, fields, grad, div, curl, line and surface integrals, divergence theorem, Stoke's theorem, applications); functions of a complex variable (analytic functions, contour integrals, Laurent series, residues).

**Prerequisites:** MAB311  
**Credit points:** 12  
**Contact hours:** 4 per week  
**Campus:** Gardens Point  
**Teaching period:** 2010 SEM-1

### MAB521 APPLIED MATHEMATICS 3

This unit includes: deriving the basic equations that describe fluid motion; the finite volume method for solving PDEs (application to the generalised diffusion equation, cell-centred and vertex-centred schemes, handling of boundary and initial conditions); solution of systems of nonlinear equations (Newton's method, Inexact Newton methods, Globally convergent methods).

**Prerequisites:** MAB311 and MAB420  
**Credit points:** 12  
**Contact hours:** 4 per week  
**Campus:** Gardens Point  
**Teaching period:** 2010 SEM-1

### MAB523 INTRODUCTION TO QUALITY MANAGEMENT

This unit includes an introduction to quality management principles and the quality improvement journey concept. Topics include quality assurance and the AS9000 series, TQM, quality costs, statistical process control, flow charts, cause and effect diagram, and team decision techniques.

**Prerequisite(s):** MAB101, MAB210, MAB233  
**Credit points:** 12  
**Contact hours:** 4 per week  
**Campus:** Gardens Point  
**Teaching period:** 2007 SEM-1

### MAB524 STATISTICAL INFERENCE

This unit includes: maximum likelihood estimation, confidence intervals and hypothesis tests, introduction to Bayesian inference, prior and posterior distributions, Bayesian inference for binomial data, Poisson count data and normal data, simulation techniques for sampling from distributions. Use of software Matlab and R.

**Prerequisites:** MAB314  
**Credit points:** 12  
**Contact hours:** 4 per week  
**Campus:** Gardens Point  
**Teaching period:** 2010 SEM-1

### MAB525 OPERATIONS RESEARCH 3A
This unit develops problem-solving skills and sharpens analytical skills. This unit introduces the technical issues involved in applying operations research principles, methods and algorithms in the solution of real-world problems.

Prerequisites: MAB315  Credit points: 12  Contact hours: 4 per week  Campus: Gardens Point  Teaching period: 2010 SEM-1

MAB526 STATISTICAL SCIENCE 3
This unit includes the following: fundamentals of time series analysis; time series models; nonstationary processes; seasonal ARIMA models; vector auto regression; long-range dependence and fractional ARIMA models; coinintegration of nonstationary processes.

Prerequisite(s): MAB314, MAB414  Credit points: 12  Contact hours: 4 per week  Campus: Gardens Point  Teaching period: 2007 SEM-1  Incompatible with: MAN526

MAB613 PARTIAL DIFFERENTIAL EQUATIONS
This unit includes the following: derivation of certain partial differential equations; solution of partial differential equations by separation of variables, Laplace and Fourier transforms; Sturm-Liouville systems; special functions; Green's functions.

Prerequisite(s): MAB311 and MAB413  Antirequisites: MAN613  Credit points: 12  Contact hours: 4 per week  Campus: Gardens Point  Teaching period: 2010 SEM-2

MAB621 DISCRETE MATHEMATICS
This unit includes the following: groups, rings and fields (additive groups, multiplicative groups; polynomial rings and finite fields); modular arithmetic (property and rules, congruencies; countability and uncountability); proof by mathematical induction, proof by contradiction; isomorphisms and homomorphisms between groups and rings; sets and relations (one-to-one and onto functions, logic, set operations, Boolean algebras); number theory issues (gcd, lcm and theorems involving these; fundamental theorem of arithmetic; arithmetic functions, Fermat's theorems, Euler's theorem).

Prerequisite(s): MAB112  Credit points: 12  Contact hours: 4 per week  Campus: Gardens Point  Teaching period: 2007 SEM-2

MAB623 FINANCIAL MATHEMATICS
This unit includes the following: quantitative techniques in business, economics and finance; theory and structure of interest rates; general accumulation and discounting functions; force of interest; discounting including Modern Portfolio theory and extension; varying interest; general annuities; varying annuities; continuous varying annuities; mathematical analysis of financial transactions in money and capital markets; life annuities and life assurances; the life table; basic life table functions; life annuities and assurances; policy values; paid up policy values; changes to policies; use of life table; superannuation.

Prerequisites: MAB313 and MAB311  Contact hours: 4 per week  Campus: Gardens Point  Teaching period: 2010 SEM-2

MAB624 APPLIED STATISTICS 3
This unit includes the following: design of experiments for factorial investigations (two and three-level factors, Taguchi's approach, fractions and blocking, response surfaces); general linear model; regression graphics; multi-stratum designs and analysis; repeated measures designs and analysis; linear-logic and log-linear models; use of statistical software.

Prerequisites: MAB414  Antirequisites: MAN624  Credit points: 12  Contact hours: 4 per week  Campus: Gardens Point  Teaching period: 2010 SEM-2

MAB625 OPERATIONS RESEARCH 3B
This unit includes: phases of an operations research study; decision analysis; queuing theory; simulation; implementation in operations research; heuristic techniques.

Prerequisites: MAB315  Credit points: 12  Contact hours: 4 per week  Campus: Gardens Point  Teaching period: 2010 SEM-2

MAB672 ADVANCED MATHEMATICAL MODELLING
Models are developed beginning with the description of 'real world' problems. Emphasis is on the mathematical modelling and not on the development of new mathematical techniques. The unit includes: mathematical modelling; model formulation; dimensional analysis and re-scaling; curves of pursuit; bungy jumping; modelling with systems of ordinary differential equations; phase plane methods for analysing systems of ODEs; bacterial growth in a chemostat; predator-prey models with harvesting; limit cycles; oscillations and excitable media; modelling with partial differential equations; motion of a continuum; continuity; traffic flow; aggregation of slime mould amoebae; momentum; ideal gas dynamics; quasi-linear PDEs.

Prerequisites: MAB422 and MAB312  Antirequisites: MAN672  Credit points: 12  Contact hours: 4 per week  Campus: Gardens Point  Teaching period: 2010 SEM-2

MDB454 SCIENCE, TECHNOLOGY AND SOCIETY
This unit investigates the interactions and effects that exist between modern science, technology and society both from a social and historical viewpoint. Advances such as the advent of the Internet, genetic modification and nanotechnology are discussed within a context of globalisation, global communications and social change. The unit also includes a study of the nature of science and technology and the nature of scientific knowledge. A major feature of the unit involves groups of students developing
and delivering ‘a hypothetical’ on a contemporary science and technology issue affecting society.

**Credit points:** 12  
**Campus:** Kelvin Grove  
**Teaching period:** 2010 SEM-2

**NQB201 PLANET EARTH**

Earth Science impacts every aspect of modern life. Hence, the concepts of Earth Science are fundamental not only to the field of Geology, but also to Environmental Science, natural resource management, civil engineering and society at large. Planet Earth provides an introduction to Earth Science, including earth materials, geologic history, geological process at the Earth's surface, and the complex interplay between the lithosphere, atmosphere, hydrosphere and biosphere through geologic time. Thus, Planet Earth is a foundation unit for further studies in Geology and Environmental Science and also serves as a broad introduction to the world we live on.

**Equivalents:** NRB230  
**Credit points:** 12  
**Contact hours:** 4 per week  
**Campus:** Gardens Point  
**Teaching period:** 2010 SEM-2

**NQB202 HISTORY OF LIFE ON EARTH**

This unit provides an introduction to the history and development of life on Earth with an emphasis on fundamental biological and ecological principles as they have operated through geological time. The unit provides the student with an understanding of the processes of evolution, extinction and the changing environmental conditions through Earth's history. The unit provides the student with practical experience in fossil identification, classification and morphological interpretation. It provides the student with a "deep-time" perspective of climate and other environmental changes affecting modern ecosystems. Hence, History of Life on Earth is a foundation unit for the Earth and Environmental Sciences as well as Ecology, Biological Sciences and Education.

**Equivalents:** NRB240  
**Credit points:** 12  
**Contact hours:** 4 per week  
**Campus:** Gardens Point  
**Teaching period:** 2010 SEM-2

**NQB302 EARTH SURFACE SYSTEMS**

Understanding long and short term climate and environmental change is now recognised as crucial to the interpretation of our biotic, geomorphic and cultural landscapes. To fully understand environment change it is important to recognise the interconnectedness between the atmosphere, hydrosphere, lithosphere, biosphere and humanity’s place within these spheres over various temporal and spatial scales. Developing knowledge of past and present climate change and landscaping processes helps to predict future process pathways for natural resource management, civil engineering, risk analysis, and impact assessment in the context of both natural and anthropogenic induced change.

**Assumed knowledge:** NQB201 is assumed knowledge.  
**Equivalents:** NRB301  
**Credit points:** 12  
**Contact hours:** 4 per week  
**Campus:** Gardens Point  
**Teaching period:** 2010 SEM-1

**NQB311 MINERALOGY**

Minerals are the building blocks of rocks which comprise the solid Earth. The study of minerals is essential for understanding the structure and composition of the earth and the detailed processes of the rock cycle. Mineralogy forms the basis for petrology (the study of the genesis of rocks) and geochemistry, and is thus essential for Geoscience. The unit may also be of interest to chemists.

**Equivalents:** NRB333  
**Credit points:** 12  
**Contact hours:** 4 per week  
**Campus:** Gardens Point  
**Teaching period:** 2010 SEM-1

**NQB314 SEDIMENTARY GEOLOGY**

This unit provides students with an introduction to sedimentology: both sediments and sedimentary rocks. The unit focuses on the link between the range of features preserved in sedimentary rocks and what those features tell us about sedimentary processes, depositional environments and the burial history of the rocks. The sedimentological processes and depositional environments observed in the modern world are discussed and used as a foundation for interpreting the evidence preserved in the ancient sedimentary rock record, in turn revealing much about Earth processes in geologic history.

**Assumed knowledge:** NQB201 is assumed knowledge.  
**Equivalents:** NRB314  
**Credit points:** 12  
**Contact hours:** 4 per week  
**Campus:** Gardens Point  
**Teaching period:** 2010 SEM-1

**NQB321 ECOLOGY**

Ecology is the study of the factors that influence the distribution and abundance of organisms. Ecology deals with basic properties of individuals and the emergent properties of collections of individuals that form populations and the dynamics of these populations and their interactions with populations of other species. An understanding of basic ecological principles is central to managing species and ecosystems. This unit provides a broad theoretical background in the major concepts of plant and animal ecology. It serves the dual role of providing a thorough grounding in ecology for students from all faculties; and laying the conceptual foundation for later subjects in the ecology and environmental science.

**Prerequisites:** SCB110 or SCB112  
**Equivalents:** NRB311  
**Credit points:** 12  
**Contact hours:** 4 per week  
**Campus:** Gardens Point  
**Teaching period:** 2010 SEM-1

**NQB403 SOILS AND THE ENVIRONMENT**

Soils are the most dynamic component of Earth surface processes, being the interface of the lithosphere and the...
atmosphere and a key system within the biosphere and the hydrosphere. It is, therefore, one of the most critical resources to consider within the context of climate change. This unit will provide you with grounding in soil science by emphasising pedological principles, their application to environmental soil analysis and management, and knowledge of ecosystem function of soils in a changing environment. The unit would provide experience in describing and classifying soils and soil materials as well as field experience in the investigation of soil processes and the assessment of resource potential and environmental hazard.

**Prerequisites:** NQB302 or NRB301 or (ENB272 and ENB274)  
**Credit points:** 12  
**Contact hours:** 4 per week  
**Campus:** Gardens Point  
**Teaching period:** 2010 SEM-2

**NQB411 PETROLOGY OF IGNEOUS AND METAMORPHIC ROCKS**

This unit includes an introduction to the description, classification and origin of igneous and metamorphic rocks and practical development of lithologic and petrographic abilities to identify mineral assemblages, classify rocks, and interpret textures. Field and theoretical constraints on the petrogenesis of rocks are discussed in lecture. Field study is an essential component of the unit. This unit builds upon the knowledge and skills acquired in the prerequisite unit (NQB311 Mineralogy).

**Prerequisites:** NQB311 or NRB333  
**Equivalents:** NRB436  
**Credit points:** 12  
**Contact hours:** 4 per week  
**Campus:** Gardens Point  
**Teaching period:** 2010 SEM-2

**NQB412 STRUCTURAL GEOLOGY AND FIELD METHODS**

Structural geology, the deformation of earth materials, is one of the main elements in the core curriculum in geology. It is also essential to other subdisciplines of geology, such as foundation engineering and petroleum and mineral exploration. Geologists need to be able to describe and map structures, to understand the mechanical principles of rock deformation, and to be able to manipulate and calculate structural data.

**Prerequisites:** NQB314 or NRB331  
**Equivalents:** NRB434  
**Credit points:** 12  
**Contact hours:** 4 per week  
**Campus:** Gardens Point  
**Teaching period:** 2010 SEM-2

**NQB421 EXPERIMENTAL DESIGN**

An understanding of experimental design is essential for students and professionals in the ecological and environmental sciences as many biological systems are characterised by high levels of variability. This unit emphasises practical considerations of field and laboratory-based experimentation in ecology and environmental science, and provides experience in problem assessment, definition, formulation of testable hypotheses and experimental design.

**Prerequisites:** MAB101 or MAB104 or MAB105, and NQB321 or NRB311  
**Equivalents:** NRB412  
**Credit points:** 12  
**Contact hours:** 4 per week  
**Campus:** Gardens Point  
**Teaching period:** 2010 SEM-2

**NQB422 GENETICS AND EVOLUTION**

This unit provides a basic understanding of the mechanisms of inheritance using Mendelian Genetics as a foundation. These principles are extended to develop a clear understanding of the mechanisms and processes that drive evolution in natural populations. Topics include the physical basis of heredity, Mendelian and non-Mendelian inheritance patterns, genotype/environment interactions, quantitative traits, evolutionary theory, adaptation and natural selection, speciation and phylogeny, sexual selection and the evolution of life histories.

**Prerequisites:** SCB112  
**Equivalents:** NRB410  
**Credit points:** 12  
**Contact hours:** 4 per week  
**Campus:** Gardens Point  
**Teaching period:** 2010 SEM-2

**NQB501 ENVIRONMENTAL MODELLING**

The capacity for management of complex environmental problems such as climate change, now and in the future, will rely on the capacity of environmental managers to create, interpret and critically analyse models of environmental systems. Mathematical model building promotes the capacity to understand the interdependent relationships that characterise environmental systems and also provides a quantitative foundation for informed environmental management.

**Prerequisites:** NQB412 or NQB421  
**Assumed knowledge:** 48 credit points of second level science units is assumed knowledge.  
**Equivalents:** NRB500  
**Credit points:** 12  
**Contact hours:** 4 per week  
**Campus:** Gardens Point  
**Teaching period:** 2010 SEM-1

**NQB502 FIELD METHODS IN NATURAL RESOURCE SCIENCES**

Field experience is an essential part of the professional training of geologists, environmental scientists, ecologists, and natural resource specialists in general. The theory and practice of methods to interpret, measure, map, and monitor important natural resource features and characteristics are essential to the study of geological, ecological and environmental systems. Methods of survey, mapping and interpretation are necessary skills for resource assessment, geo-exploration, environmental impact assessment, land evaluation, baseline studies, and ecological investigations. There are varying emphases on these outcomes depending on the type of field survey you undertake in this unit.

**Prerequisites:** (NQB321 or NQB411) and (NQB302 or NQB412)  
**Assumed knowledge:** 36 credit points of second level science units in selected major is assumed knowledge. NQB302 and NQB403 for Env Sc, NQB321 for Ecol, NQB411 and NQB412 for Geosc  
**Equivalents:**
NRB601  Credit points: 12  Contact hours: 4 per week  
Campus: Gardens Point  Teaching period: 2010 SEM-1

NQB513 GEOPHYSICS
Geophysics is an integral branch of geology, providing many of the most useful methods of imaging the subsurface of the earth. These methodologies are useful in disciplines as diverse as plate tectonics, oil and mineral exploration, hydrogeology, environmental geology, engineering geology, and seismic hazards. 
Prerequisites: (NRB201 or NRB230) and (NQB412 or NRB434)  
Equivalents: NRB534  Credit points: 12  
Contact hours: 4 per week  Campus: Gardens Point  
Teaching period: 2010 SEM-1

NQB521 POPULATION GENETICS AND MOLECULAR ECOLOGY
This unit is an extension of NQB422 Genetics and Evolution. Topics include the genetic structure of populations and processes of evolutionary change; natural selection, inbreeding and adaptation, species and speciation theory; ecological genetics; the genetics of behaviour. 
Prerequisites: NQB422  Antirequisites: NRB510  
Credit points: 12  Contact hours: 4 per week  Campus: 
Gardens Point  Teaching period: 2010 SEM-1

NQB523 POPULATION MANAGEMENT
This unit develops the theoretical treatment of populations as a unit of study and integrates the content of previous ecology units into approaches for the management of biological populations. The unit focuses on those interactions that are most relevant to pest control, but the unit is also of fundamental importance to harvesting and conservation biology. 
Prerequisites: NQB321, NQB421  Antirequisites: 
NRB511  Credit points: 12  Contact hours: 4 per week  Campus: 
Gardens Point  Teaching period: 2010 SEM-1

NSB113 DIVERSITY AND HEALTH: INTRODUCTION TO INDIGENOUS AND MULTICULTURAL PERSPECTIVES
This unit provides students with foundational understandings in culture and its implications for health care. It includes four modules - culture, self and diversity; understanding and valuing Aboriginal and Torres Strait Islander cultures; Aboriginal and Torres Strait Islander health and wellness; and migrant health issues. 
Credit points: 12  Contact hours: 3 per week  Campus: 
Kelvin Grove  Teaching period: 2010 SEM-1 and 2010 SEM-2

PQB250 MECHANICS AND ELECTROMAGNETISM
The experimental means by which we have arrived at our modern understanding of the universe is central to the scientific philosophy. Students of physics and physics related areas need to possess skills in quantitative handling, processing, communication and evaluation of data. Higher level studies in specialised areas of Physics require a familiarity with a range of fundamental topics in Physics and an ability to apply critical thinking and advanced mathematical techniques to the analysis and solution of Physical problems. This first-level unit lays the foundation for these higher level studies by introducing the fundamental topic areas of mechanics and electromagnetism. 
Assumed knowledge: Senior Maths B is assumed knowledge.  
Credit points: 12  Contact hours: 4.5 hours per week  Campus: 
Gardens Point  Teaching period: 2010 SEM-2

PQB251 WAVES AND OPTICS
Wave phenomena are used to describe and explain many of the physical processes in the universe. Sound and light are the most commonly experienced of these and have far-reaching human applications, including their use as experimental tools for science. The study of wave phenomena has led to the development of quantum mechanics, a cornerstone of modern scientific thought. This first-level unit lays the foundation for discussion of wave phenomena in higher level studies, but will also be relevant to those not considering progressing to a Physics major but wishing to understand more of the Physical world in which we live. 
Assumed knowledge: Senior Maths B is assumed knowledge.  
Credit points: 12  Contact hours: 4.5 hours per week  Campus: 
Gardens Point  Teaching period: 2010 SEM-2

PQB312 ANALYTICAL CHEMISTRY FOR SCIENTISTS AND TECHNOLOGISTS
Reliable chemical analysis and testing is fundamental to the functioning of our society. This generic unit is designed for future scientists and technologists in the fields of chemistry, forensic science and other similar sciences. It introduces students to concepts of quality assurance, good laboratory practice and the vital instrumental areas of analysis – chromatography and spectroscopy. Laboratory work is a key extensive activity in this unit. 
Prerequisites: SCB131  Equivalents: PCB414  
Credit points: 12  Contact hours: 4.5 per week  Campus: 
Gardens Point  Teaching period: 2010 SEM-1 and 2010 SEM-2

PQB331 STRUCTURE AND BONDING
This unit provides detailed coverage of the theories of bonding in organic, inorganic and coordination compounds including orbital hybridisation valence bond theory, coordination theory and crystal field theory. The cause and effect relationships between bonding and structure are developed leading to an understanding of structural variability, chirality, and other modes of isomerism for a
broad range of chemical compounds. An introduction to molecular symmetry, which is central to the study of molecular geometry and shape, also provides the background for later studies in spectroscopy. Lectures are complemented by 7 laboratory experiments and 4 hands-on style workshops.

**Prerequisites:** SCB121 and SCB131  
**Antirequisites:** PCB334, PCB354  
**Credit points:** 12  
**Contact hours:** 4.5 per week  
**Campus:** Gardens Point  
**Teaching period:** 2010 SEM-1

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**PQB350 THERMODYNAMICS OF SOLIDS AND GASES**

This unit provides students with an overview of the basic thermodynamic principles that describe how heat and other forms of energy are transported through matter in its solid and gaseous states. Through integrated lecture and practical classes, it provides students with a foundation for more advanced studies later in areas such as condensed matter physics and quantum mechanics. The three areas of study in this unit; thermodynamics, solid state physics and statistical physics; are essential core topics if students are considering postgraduate study in the physical sciences or professional employment as a physicist.

**Prerequisites:** PQB250 or PCB250, and MAB111  
**Corequisites:** MAB311  
**Assumed knowledge:** Students should enrol in MAB311 in the same semester if not already completed  
**Equivalent:** PCB562  
**Credit points:** 12  
**Contact hours:** 4 per week  
**Campus:** Gardens Point  
**Teaching period:** 2010 SEM-1

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**PQB401 REACTION KINETICS, THERMODYNAMICS AND MECHANISMS**

This unit deals with the way in which the fundamental concepts of physical chemistry govern the extent and rates of chemical reactions and applies them to actual reaction types from the fields of organic and inorganic chemistry. Topics include: thermodynamics including enthalpy, heat capacity, entropy, Gibb's free energy, chemical equilibria and an introduction to electrochemistry: chemical kinetics including rate laws, mechanisms of chemical reactions, collision theory of reaction rates and the steady state principle as well as acids and bases in both aqueous and non aqueous environments.

**Prerequisites:** PQB331  
**Antirequisites:** PCB354, PCB405  
**Credit points:** 12  
**Contact hours:** 4.5 per week  
**Campus:** Gardens Point  
**Teaching period:** 2010 SEM-2

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**PQB442 CHEMICAL SPECTROSCOPY**

Spectroscopic techniques are now widespread in scientific laboratories. An appreciation of both the principles and practice of spectroscopy is essential for those contemplating a career in chemistry. The use of spectroscopic methods to elucidate molecular structure provides an excellent vehicle for training in the scientific method, particularly the logical application of experimental data to deduce the solution to a complex problem. Whilst the fundamental theoretical concepts will be dealt with in the early part of the unit, later emphasis will be on developing practical skills in problem solving, a skill of value to all fields of scientific and technological endeavour.

**Prerequisites:** PQB331  
**Equivalents:** PCB444  
**Credit points:** 12  
**Contact hours:** 4 per week  
**Campus:** Gardens Point  
**Teaching period:** 2010 SEM-2

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**PQB450 ENERGY, FIELDS AND RADIATION**

The common theme of the topics covered in this unit is fields, the energy contained in these fields and the transfer of this energy. This theme is addressed in the specific topics of classical mechanics, electromagnetism and radiation physics. The classical mechanics and electromagnetism components build on material presented in introductory units and apply this to complex real world problems. The unit is designed to prepare students for more advanced studies in these areas but the unit will also provide a useful background for students undertaking a comajor in Physics or preparing for a career in secondary education.

**Prerequisites:** PQB250 or PCB250, and MAB311  
**Equivalents:** PCB362  
**Credit points:** 12  
**Contact hours:** 4 per week  
**Campus:** Gardens Point  
**Teaching period:** 2010 SEM-2

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**PQB451 ELECTRONICS AND INSTRUMENTATION**

Instrumentation plays an increasingly important role in the life of a scientist. This unit is designed to give the student a working knowledge in instrumentation and the principles of circuit theory and electronics that underlie instrumentation. It is offered at this stage of the program since it relies on work developed in the earlier advanced-level units and provides a basis for experimental work in later units.

**Prerequisites:** PQB250 or PCB250  
**Antirequisites:** PCB381, PCB460  
**Credit points:** 12  
**Contact hours:** 4 per week  
**Campus:** Gardens Point  
**Teaching period:** 2010 SEM-2

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**PQB502 ADVANCED PHYSICAL CHEMISTRY**

A Chemistry graduate in today's highly technological world requires knowledge of the principles that govern the behaviour of solids, liquids, gases, and mixtures thereof. This leads to an appreciation of how fundamental physical chemical principles determine the bulk properties of materials and how the chemical nature of interfaces govern chemical reactions in many important applications. This unit is placed appropriately in fifth semester, following the second year units that provide the basic principles, language and tools of chemistry.

**Credit points:** 12  
**Contact hours:** 4 per week  
**Campus:** Gardens Point  
**Teaching period:** 2010 SEM-1
PQB513 INSTRUMENTAL ANALYSIS
Prerequisites: PQB312 or PCB414    Equivalents: PCB514    Credit points: 12    Contact hours: 4 per week    Campus: Gardens Point    Teaching period: 2010 SEM-1

PQB531 ORGANIC MECHANISMS AND SYNTHESIS
This unit deals with organic reaction mechanisms and their application in organic synthesis. Topics in mechanisms include: structural and electronic effects that govern reactivity of organic molecules; major classes of mechanisms including elimination reactions, nucleophilic additions to carbonyl compounds, nucleophilic acyl substitution, electrophilic addition to alkenes and electrophilic substitution of aromatics. Topics in synthesis include the principles of organic synthesis design using the retrosynthetic approach; carbon-carbon bond formation to build the major functional group classes; and the use of protecting and activating groups.
Prerequisites: PQB401, PQB442    Antirequisites: PCB554    Credit points: 12    Contact hours: 4 per week    Campus: Gardens Point    Teaching period: 2010 SEM-1

PQB550 QUANTUM AND CONDENSED MATTER PHYSICS
TBA
Prerequisites: P QB350 and (MAB135 or MAB311)    Equivalents: PCB561    Credit points: 12    Contact hours: 4 per week    Campus: Gardens Point    Teaching period: 2010 SEM-1

PQB551 PHYSICAL ANALYTICAL TECHNIQUES
Modern methods of physical analysis are an important tool for the physical scientist. This unit provides an introduction to the physical principles and applications in three fields of analysis: X-ray diffraction, analytical electron microscopy and physical spectroscopy. Each of these topics encompasses a variety of measurement techniques. The methodologies presented have wide application in a number of areas of science and technology including nanotechnology and materials research and development. Lectures are supplemented by laboratory practicals to enable students to gain familiarity and experience with the instrumentation.
Prerequisites: (PQB350 or PCB462) and (MAB112 or MAB122)    Equivalents: PCB562    Credit points: 12    Contact hours: 4 per week    Campus: Gardens Point    Teaching period: 2010 SEM-1

PQB584 FORENSIC PHYSICAL EVIDENCE
This unit provides a theoretical and practical framework to introduce you to the physical evidence processing techniques of questioned documents and computer forensics and the forensic examination techniques of optical and electron microscopy. The unit will also discuss the physical and chemical structure of some common types of physical evidence (fibres, fabrics & severs, soils and physical fits) and the analytical methods used for their analysis. It is placed appropriately in the fifth semester of the course to coincide with and complement the Instrumental Analysis unit PQB513 which the core knowledge for the instrumental techniques used within the forensic analysis of various types of physical evidence.
Prerequisites: PQB312, SCB384    Antirequisites: PCB584    Credit points: 12    Contact hours: 4 per week    Campus: Gardens Point    Teaching period: 2010 SEM-1

PUB209 HEALTH, CULTURE AND SOCIETY
This unit is concerned with the social and cultural dimensions of health and illness and how they relate to health status and patterns of behaviour. The unit introduces students to thinking about health from sociological and anthropological perspectives, drawing on relevant concepts and theory to examine selected public health issues. Identifying and addressing social and cultural factors that shape people’s health experiences of health, illness and health systems are integral parts of public health practice in terms of reducing health inequalities, delivering appropriate services, and ultimately improving population health outcomes.
Credit points: 12    Contact hours: 3 per week    Campus: Kelvin Grove    Teaching period: 2010 SEM-2

PUB486 ETHICS AND THE LAW IN HEALTH SERVICE DELIVERY
This unit enables students to develop an awareness of the ethical and legal issues associated with the public sector and health care in the pre-hospital care setting. This unit covers topics relating to the code of ethics, the code of conduct and the legislation unique to the emergency health services. Students are required to apply content knowledge using the problem based learning strategy. Topics include introduction to ethics, morality and ethical theory, bioethics, public sector ethics, overview of the Australian legal system, consent to and refusal of health care, duty of care, confidentiality, and record keeping.
Prerequisites: PUB280    Credit points: 12    Campus: Kelvin Grove and External    Teaching period: 2010 SEM-2

PYB067 HUMAN SEXUALITY
This unit explores historical approaches to studying, explaining and regulating human sexuality with an awareness of the social nature of definitions of 'normal' or 'acceptable' sexual behaviours. Students critically examine definitions of 'healthy' or 'morally acceptable' or 'normal' sexuality. Different models of sexuality are considered with an emphasis on contemporary critiques of the traditional paradigms of sexuality in the West.
Credit points: 12    Contact hours: 3 per week    Campus: Kelvin Grove    Teaching period: 2010 SEM-2
SCB10 SCIENCE CONCEPTS AND GLOBAL SYSTEMS
You will undertake interdisciplinary study of the physical, geological and biological concepts relating to the origins of life; from the creation of matter and planets, to the emergence of life in all its complexity, culminating in evolution of earth ecosystems. Human influences, overlaid upon earth’s complex systems, will be examined as to their type, extent, and impact. In counterpart, you will explore the breadth of philosophical developments underlying our search for knowledge; fundamental thoughts and ideas that span the last 2,500 years of human history. Ultimately, these concepts evolved through the development of a scientific method and we explore its workings in relation to the ongoing enterprise of human understanding.

Credit points: 12  Contact hours: 4.5 per week  
Campus: Gardens Point  Teaching period: 2010 SEM-1 and 2010 SEM-2

SCB111 CHEMISTRY 1
This unit covers the fundamentals of general and physical chemistry. Topics include atomic and molecular structure, introduction to chemical bonding, reaction stoichiometry, thermochemistry, gas phase chemistry, reaction kinetics, equilibrium, acids, bases, buffers, oxidation, reduction and electrochemistry. The practical program involves experiments illustrating a range of chemical reaction types including precipitation reactions, acid-base chemistry and redox chemistry using analytical experimental methods. A comprehensive tutorial program (CHELP) complements the lectures and is designed to assist students to develop the problem solving skills required for further study in chemistry and related sciences.

Antirequisites: SCB113  Credit points: 12  Contact hours: 4.5 per week  
Campus: Gardens Point  Teaching period: 2010 SEM-1 and 2010 SEM-2

SCB112 CELLULAR BASIS OF LIFE
A study of life processes in all five groups of living organisms (bacteria, protists, fungi, plants and animals). Traditional topics in biology are integrated with recent research advances in molecular and cellular biology to provide a comprehensive foundation for later units in the medical, biotechnological and ecological sciences. The unit begins by constructing cells from the four quantitatively important groups of biological molecules (proteins, lipids, carbohydrates and nucleic acids). Molecular and evolutionary aspects of genetics are then introduced, with the great diversity of reproductive strategies found among organisms being emphasised. Finally, bioenergetics (photosynthesis and respiration) and its relevance to environmental issues is outlined.

Antirequisites: LSB118  Credit points: 12  Contact hours: 4 per week  
Campus: Gardens Point  Teaching period: 2010 SEM-1 and 2010 SEM-2

SCB120 PLANT AND ANIMAL PHYSIOLOGY
Regardless of which area of biology you decide to specialise in, you will need to understand the complex interactions between cells, tissues, organs and organ systems that comprise multi-cellular organisms. Although many living processes can be explained at the levels of biochemistry, biophysics and cell biology, a true understanding of complex, multicellular organisms requires integration of knowledge drawn from all of these areas, combined with the more complex physiological and structural levels you will learn about in this unit. The knowledge gained in this and other first level units provides you with the conceptual framework necessary to understand processes occurring from the cellular to the whole organism level and to higher levels of organisation.

Prerequisites: SCB112  Equivalents: NRB270  Credit points: 12  Contact hours: 4.5 per week  
Campus: Gardens Point  Teaching period: 2010 SEM-1 and 2010 SEM-2

SCB121 CHEMISTRY 2
Chemistry is the central science. This is a unit of fundamental importance as it covers the background and general principles that underpin understanding in many Science and Health related disciplines, particularly in regards to the chemistry of life. In this unit students will be introduced to fundamental aspects of chemistry including the electronic structure of atoms, chemical bonding and molecular structure. From this basis students will develop an understanding of the fundamentals of organic chemistry and coordination complexes.

Prerequisites: (SCB111 or PCB142)  SCB111 can be studied in the same teaching period  Antirequisites: SCB113  Credit points: 12  Contact hours: 4.5 per week  
Campus: Gardens Point  Teaching period: 2010 SEM-1 and 2010 SEM-2

SCB122 CELL AND MOLECULAR BIOLOGY
SCB122 Cell and Molecular Biology 1 equips students with a comprehensive understanding of the molecular basis of the cell. This unit expands on the basic principles and concepts relating to cell structure, function, perpetuation and organisation of the cell. Students will be shown how macromolecular interactions are crucial to information flow and heredity. Students are taught the relationships between chromosomes, genes and cellular function and ultimately how these may determine an organism's phenotype. This unit underpins cell biology and molecular biology units that are offered in second year Life Science units. SCB122 is also ideal for interfaculty students (eg Education, Business, Arts) who will undertake no further life science studies.
SCB123 PHYSICAL SCIENCE APPLICATIONS

Physics principles underpin all of the sciences and 'new technologies'. This unit adopts an investigative team-based approach to provide students with an appreciation of fundamental concepts in physical science, together with experience in the application of these concepts to a range of 'real world' problems. The unit should be taken in the first year of study as the fundamental principles introduced here will be built upon in later units in the context of each science student's major discipline area. Employers in cutting-edge industries expect science graduates to have effective strategies for problem solving, skills for collaborative work and scientific communication and research skills. This unit aims to develop these skills by applying the fundamental concepts of physical science to problems in a team environment.

**Prerequisites:** SCB112  
**Antirequisites:** LSB238  
**Credit points:** 12  
**Contact hours:** 4.5 per week  
**Campus:** Gardens Point  
**Teaching period:** 2010 SEM-2

This unit provides an introduction to two fundamental areas in forensic science, crime scenes and justice. Mock crime scenes involving real life scenarios are used to provide hands-on training on crime scene management and examination protocols. The principles for forensic examination of crime scenes involving fire, explosion, murder, etc, are introduced through lectures, workshops and practical exercises. Also an overview of the techniques used in forensic photography, fingerprinting as well as Legal procedures at court is presented. This unit is provided by professional forensic practitioners with practical real life experience being transferred to new generations. This head start provides a unique advantage for a strong career in forensics.

**Credit points:** 12  
**Contact hours:** 4.5 per week  
**Campus:** Gardens Point  
**Teaching period:** 2010 SEM-1

SWB100 INTRODUCTION TO HUMAN SERVICES AND SOCIAL WORK

This unit provides an introduction to human services and social work and locates this within the broader context of the welfare state. It examines both the history, and global and national forces, which shape the current direction of welfare policy and the human service industry. The purpose of human service work and the various roles a human service worker may undertake or utilise are explored. The unit challenges students to reflect on their own understandings of human services and human service work, and provides a foundation for detailed study in later years of the course.  

**Antirequisites:** HHB100  
**Credit points:** 12  
**Campus:** Kelvin Grove  
**Teaching period:** 2010 SEM-1

SWB102 THE HUMAN CONDITION

This unit introduces students to a range of individual, familial and social conditions that impact on the lives and lifestyles of Australians. Attention is directed toward the impact of factors such as age, ability, gender, culture and class, and the identification and exploration of key processes in human growth and development. Students become informed about theories from a range of disciplines and develop a critical and reflective approach to understanding human development. By examining how societies define and respond to human need and adversity students develop a framework for examining the dynamic interaction of individual, interpersonal and social forces.  

**Antirequisites:** HHB102  
**Credit points:** 12  
**Teaching period:** 2010 SEM-1

SWB103 CONTEMPORARY SOCIAL AND COMMUNITY ISSUES

This unit explores a number of contemporary social issues relating to social marginalisation and human disadvantage. It locates these issues in a theoretical and descriptive...
framework thus providing students with both knowledge and analytical skills that are necessary for the ongoing exploration of social issues. It explores the connection between forces at a macro level and human disadvantage and examines the value assumptions that sustain structural inequity. It encourages students to reflect on the implications of structural disadvantage for human service practice and the role of the human service worker as a participant in civil society. [SWB103 is incompatible with HHB103]

Credit points: 12 Teaching period: 2010 SEM-2

SWB104 INTERPERSONAL COMMUNICATION
This unit introduces skills and processes of interpersonal communication as modified by culture, gender and power. Microskills are developed including building rapport, reflective listening, questioning to understand, facilitating and advocating for clients of human services. Interviewing skills and skills in group communication are highlighted. Collaborative models are emphasised and special application includes third party involvement in communication. [SWB104 is incompatible with HHB113]

Credit points: 12 Teaching period: 2010 SEM-2 and 2010 SUM-1

SWB105 INTRODUCTION TO HUMAN RIGHTS AND ETHICS
This unit explores a range of contemporary national, regional and international human rights challenges and issues. It examines the relationship between human rights, the human rights system and critically important global problems including climate change, poverty, terrorism and oppressive forms of intolerance. It offers opportunities to investigate thematic concerns relating to women, youth, indigenous peoples and minority groups as well as specific topics such as human trafficking, harmful cultural practices, workers rights and child soldiers. The unit draws on a number of academic disciplines and makes extensive use of the Internet and information, communication and collaborative technologies. There are a number of interesting options open for assessment. [SWB105 is incompatible with HHB114]

Antirequisites: HHB114 Credit points: 12 Teaching period: 2010 SEM-1 and 2010 SEM-2

SWB204 CHILD AND FAMILY SERVICES: INTRODUCTION
This unit is designed to introduce second year students to child and family welfare studies and focuses on approaches to supporting families and promoting change. Initially students will gain an overview of issues facing contemporary Australian families that contribute to family adversity and examine responses to the welfare needs of children and families, including Indigenous families. Students will then critically examine characterisations of successful family relationships and parenting, theories on causes and effects of domestic violence and child maltreatment and the effect of maltreatment on children. [SWB204 is incompatible with HHB204]

Credit points: 12 Teaching period: 2010 SEM-2

SWB206 DISABILITY SERVICES: INTRODUCTION
This unit links social justice, human rights and empowerment philosophies underpinning courses in the School. It examines the implications of these broad principles in the lives of people with disabilities. The unit explores the theoretical, social and political frameworks for analysing and understanding disability, the principles underpinning current service provision and their impact on the lives of people with disabilities using the service. Also explored are the cultural values and assumptions about disability, and the processes by which these values are translated into human service activity. Finally, the unit examines individual program planning and skill development practices. [SWB206 is incompatible with HHB206]

Credit points: 12 Teaching period: 2010 SEM-2

SWB207 SERVICES TO YOUNG PEOPLE: INTRODUCTION
This unit provides an introduction to human services practice with young people. It gives students an overview from both theoretical and operational perspectives. The various theoretical and popular understandings about 'youth' or 'adolescence' which condition human services provision to young people will be critically explored. Diversity and marginalisation among young people in relation to socioeconomic status, gender, race and ethnicity, disability, sexual identity, and geographic location will be examined. The unit briefly overviews contemporary policies, services, and practice frameworks oriented to young people. [SWB207 is incompatible with HHB207]

Credit points: 12 Teaching period: 2010 SEM-2

SWB212 COMMUNITY WORK
Community work as a distinct intervention skill is defined. The unit provides background to community work in Australia. Models of community work are introduced and analysed. Basic skills and techniques are developed: entering a community; building community involvement; developing community action; managing common problems. [SWB212 is incompatible with HHB212]

Credit points: 12 Teaching period: 2010 SEM-1

SWB214 TEAM PRACTICE AND GROUP PROCESSES
A significant methodology used in human service work involves facilitating, supporting or consulting with various groups of people. This unit focuses on the development of skills to utilise this type of intervention appropriately. The unit aims to provide a basic understanding of the various
uses to which group processes may be applied. Group work is located as an intervention process within the human service arena as distinguished from other processes at individual, community and societal level. [SWB214 is incompatible with HHB214]

**Credit points:** 12  **Teaching period:** 2010 SEM-2

**SWB216 THE HUMAN DIMENSIONS OF SPACE**
This unit is a component of the Community Studies major and covers the role of space in contemporary societies; key types of spaces and patterns in their usage; spaces as sites for cultural and symbolic expression; understanding the way inequality can and is reproduced through the configuration and management of space; understanding the way particular public spaces are used and experienced by particular sections of the community eg young people; key issues in public space configuration, management and policy eg enhancing social inclusion, safety and security; links between the economic and social, new urbanism; emerging theory and ideas about good practice in the development or reconfiguration of public and community accessed public spaces. [SWB216 is incompatible with HHB216]

**Credit points:** 12  **Teaching period:** 2010 SEM-2

**SWB218 SOCIAL CHANGE, POLITICS, POLICY AND ACTIVISM**
Social activists, including social workers and human service practitioners, commonly work with and on behalf of disadvantaged persons, vulnerable groups and marginalised communities. While multi-causal, the life circumstances of the disadvantaged, vulnerable and marginalised are heavily influenced by the exercise of political power and policies of government. Accordingly, professional practitioners engaged in social activism need to have a thorough understanding of the structure and processes of government and an appreciation of the ‘art’ of real world politics - 'realpolitik' - and how this shapes policy change. This unit provides you with an introduction to power, politics and government and serves as a foundation for a range of other units. It explores the relationship between political power and disadvantage and encourages you to consider the political sphere of your profession. [SWB218 is incompatible with HHB218]

**Credit points:** 12  **Teaching period:** 2010 SEM-2

**SWB219 ETHICAL AND LEGAL DIMENSIONS OF HUMAN SERVICES AND SOCIAL WORK**
This unit aims to produce graduates who have a comprehensive knowledge of the ethical and legal dimensions of human service practice and an understanding of the relevance of such dimensions for professional practice and the empowerment of the disadvantaged. [SWB219 is incompatible with HHB277]

**Credit points:** 12  **Teaching period:** 2010 SEM-2

**SWB220 PRACTICE THEORIES**
This unit is intended to enable you to develop an understanding of the major theoretical approaches (practice perspectives, practice theories and practice models) underpinning human service practice and critically examine the way theoretical concepts and disciplinary knowledge inform intervention process. [SWB220 is incompatible with HHB278]

**Credit points:** 12  **Teaching period:** 2010 SEM-1

**SWB221 SOCIAL WORK PROCESSES AND METHODS**
This unit is intended to enable students to develop knowledge and application skills in practice processes and methods central to social work and human service practice contexts. It aims to orient students to core human service and social work practice processes and methods and enable them to appropriately use these across diverse settings. [SWB221 is incompatible with HHB279]

**Credit points:** 12  **Teaching period:** 2010 SEM-1

**SWB222 ADVANCED COMMUNICATION FOR HUMAN SERVICES AND SOCIAL WORK**
[This is a designated unit]
Developed interpersonal communication skills are the cornerstone for both personal and professional relationships. Human service and social work in a broad sense, aim to help people in their struggle for self determination and social justice. At a fundamental level, the struggle for independence, justice and empowerment is facilitated by interpersonal processes involving the effective use of communication and conflict resolution skills. This unit builds the fundamental communication skills essential for professional social work within a diversity of practice settings. It pays particular attention to the needs of Indigenous peoples and clients from ethnically and cultural diverse backgrounds. It develops necessary skills in interpersonal dynamics, interviewing, empathic engagement, relationship building, working with resistant clients, alternate dispute resolution and reflective practice. [SWB222 is incompatible with HHB282]

**Prerequisites:** HHB113 or SWB104 or PYB007
**Antirequisites:** HHB215  **Credit points:** 12  **Teaching period:** 2010 SEM-1

**SWB223 PEOPLE, SOCIETY AND SOCIAL WORK**
This unit provides an orientation for social work students to the relevance of sociological and psychological understandings of people and society to social work practice. A range of key themes in the experience of those who use, or are the target of, social work intervention are used as vehicles to consider psychological and sociological foundations to practice. These themes include poverty, exclusion, isolation, motivation, spirituality, conflict, grief and loss, sexuality, addiction, resilience and well-being. The unit

**Credit points:** 12  **Teaching period:** 2010 SEM-2
concludes with a consideration of the role of social work in various social and cultural contexts. [SWB223 is incompatible with HHB283]

**Credit points: 12  Teaching period: 2010 SEM-1**

**SWB302 SOCIAL POLICY PROCESSES**

This unit includes the following: conceptualising economic, structural change in Australia; understanding emergent ideas about state and society; identifying and contrasting alternative social policies and strategies. The major debates in Social Policy are explored. Analyses of Australia’s response and the impact on redistribution in the Welfare State. Current analyses of health, housing, income security, immigration and family policies at federal, state and local government level. [SWB302 is incompatible with HHB213]

**Credit points: 12  Teaching period: 2010 SEM-2**

**SWB304 CHILD AND FAMILY SERVICES: ADVANCED**

The unit extends and deepens knowledge gained in Child and Family Introduction. You will particularly focus on developing a framework for assessment with families and gain further knowledge for practice with families who are refugees, where there is domestic violence and in the hospital context. Emphasis is placed on developing strategies to promote the participation of children and young people. You will also enhance skills of identifying worthwhile service change and submission writing. [SWB304 is incompatible with HHB304]

**Prerequisites:** SWB204 or HHB204  
**Credit points: 12  Teaching period: 2010 SEM-1**

**SWB305 COMMUNITY AND YOUTH CORRECTIONS**

This unit recognises the need for an overview and understanding of the Queensland community and youth correction systems by Human Service and Social Work practitioners. It provides the legislative framework and structures, processes and principles of the youth and criminal justice system. It explores evidence based interventions and provides practice models and assessment frameworks.

It provides theory and practice skills for working with Indigenous people and examines the role of practitioners in Youth Justice Services and the Department of Corrective Services. The unit requires all students to engage in independent and group activity through seminars, to engage in case studies, critical reflection and active discussions. [SWB305 is incompatible with HHB305]

**Credit points: 12  Teaching period: 2010 SEM-1**

**SWB306 DISABILITY SERVICES: ADVANCED**

This unit builds on concepts and issues introduced in the Disability Services: Introduction unit and is designed to promote understanding of the knowledge required to undertake policy and service development activities within the disability sector. It explores the range of service models relevant to people with a disability across their lifespan. Additionally, it examines the quasi-legal and policy aspects of working in disability service organisations, along with some of the ethical dilemmas inherent in human service provision with particular relevance to people with a disability. [SWB306 is incompatible with HHB306]

**Prerequisites:** SWB206 or HHB206  
**Credit points: 12  Teaching period: 2010 SEM-1**

**SWB307 SERVICES TO YOUNG PEOPLE: ADVANCED**

Many of the positions available in the human services industry and oriented to young people require specific knowledge, skills and understandings. This unit involves an in-depth exploration of contemporary and emerging areas of direct and indirect practice with young people. Included are early intervention and prevention, youth policy analysis and development, juvenile justice practice, youth and family work, youth health practice, public space practice, accommodation and housing practice, and the interface between human services practice and schools. The unit also examines the legal and ethical dimensions of direct practice as an integral part of the unit. [SWB307 is incompatible with HHB307]

**Prerequisites:** SWB207 or HHB207  
**Credit points: 12  Teaching period: 2010 SEM-1**

**SWB308 CHILD PROTECTION INTERVENTION SKILLS**

This unit will focus on the development of skills for assessment and intervention to safeguard the welfare and rights of children and young people in families where personal and environmental challenges compromise the child or young person’s safety. Particular attention will be paid to skills and processes necessary for maintaining a child-focused approach when working with families who have multiple and complex needs. [SWB308 is incompatible with HHB319]

**Credit points: 12  Teaching period: 2010 SEM-1**

**UDB164 POPULATION AND URBAN STUDIES**

This unit introduces the students to the demographic, economic, social and physical aspects of our cities to help understand the nature of cities we live in. The topics covered include: demographic and economic changes in cities, theoretical models of cities, issues such as social diversity, gentrification, masterplanned communities, and public spaces in cities.

**Credit points: 12  Contact hours: 3 per week  Campus: Gardens Point  Teaching period: 2010 SEM-2**

**UDB281 GEOGRAPHIC INFORMATION SYSTEMS**

This unit investigates the basic concepts of geographic information systems. Topics to be covered include
components of GIS, spatial databases, data acquisition, reference frameworks, use of photographs and images, spatial analysis and graphic output design issues. The unit will highlight the importance of geographic information systems the unit will highlight the importance of geospatial positioning applications in society.

Equivalent: PSB631  
Credit points: 12  
Contact hours: 4 per week  
Campus: Gardens Point  
Teaching period: 2010 SEM-1

UDB282 REMOTE SENSING
This unit includes the following: history and principals of remote sensing; types of imagery, image interpretation, satellite systems; supervised and unsupervised image classification; interpretation, analysis and presentation of data; applications in the earth sciences.

Equivalent: PSB655  
Credit points: 12  
Contact hours: 4 per week  
Campus: Gardens Point  
Teaching period: 2010 SEM-2