Bachelor of Engineering (Mechanical) (EN40)

Year offered: 2013
Admissions: Yes
CRICOS code: 056529D
Course duration (full-time): 4 years
Domestic Fees (indicative): 2013: CSP $4,200 (indicative) per Semester (48 credit points)

Student Services and Amenities Fee
You’ll need to pay the Student Services and Amenities Fee (SSAF) as part of your course costs. More information on the SSAF - http://www.student.qut.edu.au/fees-and-finances/study-costs/fee-schedule/table-l-student-services-and-amenities-fee

Start month: February, July
QTAC code: 412502
Past rank cut-off: 82
Past OP cut-off: 9
OP Guarantee: Yes

IELTS (International English Language Testing System):
Overall: 6.0, Subscores: 6.0
Deferment allowed: Yes
Total credit points: 384
Standard credit points per full-time semester: 48
Course coordinator: Dr R. Mahalinga-Iyer
Discipline coordinator: Professor Ted Steinberg
Campus: Gardens Point
Attendance: Full-time

Assumed knowledge:
Maths B, English

Assumed knowledge notes: We assume that you have knowledge equivalent to four semesters at high school level (Years 11 and 12) with sound achievement (4, SA). Recommended study: Chemistry, Maths C and Physics. For information on acquiring assumed knowledge visit http://www.qut.edu.au/assumed-knowledge

Course highlights:
- Study a Bachelor of Mechanical Engineering and gain experience in technical analysis, operation and maintenance of equipment and systems.
- Turn energy into power and motion and learn to design, create, improve and maintain systems and machinery.
- Study design, fluid mechanics and dynamics, solids modelling, materials and manufacturing, instrumentation and control, thermodynamics and stress analysis.
- Gain experience solving real world problems in technical analysis, operation and maintenance of equipment and systems.
- Work in industries such as manufacturing, mining, refrigeration and air-conditioning, transport and mechanical handling.

- Graduate with an internationally recognised qualification.

Details:
Mechanical engineering turns energy into power and motion. Mechanical engineers design, create, improve and maintain systems and machinery that are used for private and commercial purposes. They keep pace with technology and act as an interface between technology and society, playing an essential role contributing to the sustainability of the environment and future development of industry.

Mechanical engineering interlinks closely with other areas of engineering and applies knowledge of materials, energy and structures. If you are interested in technical and engineering activities, working with your hands, mathematics, science and technology, a career in mechanical engineering could be for you.

Explore your options
Your engineering degree features a common first year that combines broad foundation principles with a wide range of specialisation choices, giving you flexibility and options before you choose your career specialisation.

Why choose this specialisation?
Mechanical engineering at QUT offers you a balanced mix of theory and practice to prepare you for the work environment. You receive a thorough grounding in the engineering sciences and hands-on, practical experience in real-world problem solving and application of theory in a program that is strongly oriented towards industry needs. In this way, QUT makes you fully prepared to work in every aspect of mechanical engineering from technical analysis to the operation and maintenance of equipment and systems.

Career outcomes
Due to the diversity of activities and skills associated with mechanical engineering, there is a wide range of exciting employment opportunities for graduates in Australia and overseas. You may find employment in a variety of roles such as a consultant, project manager or technical adviser in industries including manufacturing, mining, refrigeration and airconditioning, transportation and mechanical handling. Your responsibilities might include installing and commissioning a plant, selecting equipment or working in a design office. You might even work in a manufacturing plant where your principal concern is the logistics of production and the efficient management of people and systems.

Professional recognition
This course has professional accreditation from Engineers Australia (EA). EA is a signatory to the Washington Accord, which permits graduates to work in various countries across the world. This course is recognised internationally in the engineering profession, giving QUT graduates more career opportunities overseas.

**Expand your expertise**
When you select this specialisation your study plan will also include the choice of a second study area.

**Other study options**
- Bachelor of Business/Bachelor of Engineering (Civil, Electrical or Mechanical)

**Structures and Units**

**Work Integrated Learning unit**
Bachelor of Engineering students are required to complete at least 60 days of industrial experience in an engineering environment approved by the course coordinator as part of the Work Integrated Learning unit.

**Your course**

**Year 1**
Common first-year units include the foundations of engineering mathematics, basic principles of sustainability, electrical engineering, engineering mechanics, engineering design and engineering materials. These units provide a strong, fundamental overview of the three engineering streams: civil, electrical and mechanical.

**Year 2**
You build your knowledge of engineering science in areas such as fundamentals of design, dynamics, fluid mechanics, manufacturing and mathematics. You also gain practical experience in our laboratories and are introduced to computational fluid dynamics (CFD). Your communication skills will also be advanced with an introduction to engineering drawing and assignment report writing.

**Year 3**
You increase your knowledge and skills in a number of professional areas, including design, where you are introduced to solids modelling, materials and manufacture, instrumentation and control, dynamics, thermodynamics and stress analysis. You continue to develop your communication skills by writing assignment reports and presenting seminars. You choose a second study area.

**Year 4**
In your final year you complete your second study area. You undertake a major project which will bring together all your previously mastered skills, and advance your communication skills in report writing and seminar presentation. You will also undertake your work integrated learning.

**Second majors and minors**
You will have the opportunity to undertake either a 2nd major or two minors (see options below).

Please refer to the rules before making your selection.

**Mechanical engineering second major and minor options**

- **Second major:**
  - Motor Racing Engineering (previously Automotive Engineering)
  - Engineering Management
  - Heavy Mechanical Engineering

- **Minors:**
  - Mechanical Engineering minor plus
  - A minor from anywhere in QUT that is outside of the course.

Please note: The Work Integrated Learning unit (BEB701) and the project unit (BEB801) that are required for professional recognition and were once part of an applications minor have now been moved to the core of the Engineering course.

**Mechanical major - Students commencing February 2010 onwards**

**Year 1 - Semester 1**
- ENB100 Engineering and Sustainability
- ENB110 Engineering Statics and Materials
- ENB130 Mechanical and Thermal Energy
- OR
- MAB126 Mathematics for Engineering 1

**Year 1 - Semester 2**
- ENB120 Electrical Energy and Measurements
- ENB150 Introducing Engineering Design
- ENB200 Introducing Engineering Systems
- MAB126 Mathematics for Engineering 1
  - OR
- MAB127 Mathematics for Engineering 2

**Year 2 - Semester 1**
- ENB211 Dynamics
- ENB212 Strength of Materials
ENB231 Materials and Manufacturing 1
MAB127 Mathematics for Engineering 2
OR
MAB233 Engineering Mathematics 3

Year 2 - Semester 2
ENB205 Electrical and Computer Engineering
ENB215 Fundamentals of Mechanical Design
ENB221 Fluid Mechanics
ENB331 Materials and Manufacturing 2

Please note:
Students wishing to undertake CEED based Industry Project should consult the Subject Area Coordinator to provide a program for the final 2 years. CEED program requires that you undertake units BEB701, BEB801 and BEB802 together in either Semester 1 or 2.

Year 3 - Semester 1
ENB222 Thermodynamics 1
ENB311 Stress Analysis
ENB312 Dynamics of Machinery
ENB316 Design of Machine Elements

Year 3 - Semester 2
ENB313 Automatic Control
ENB317 Design and Maintenance of Machinery
ENB321 Fluids Dynamics
MAB233 Engineering Mathematics 3
OR
Selective

Year 4 - Semester 1
BEB801 Project 1
ENB421 Thermodynamics 2
Second Major/Minor unit
Second Major/Minor unit

Year 4 - Semester 2
BEB701 Work Integrated Learning 1
BEB802 Project 2
Second Major/Minor unit
Second Major/Minor unit

Mechanical Engineering Selectives
ENB314 Industrial Noise and Vibration
ENB333 Operations Management
ENB336 Industrial Engineering
ENB339 Introduction to Robotics
ENB422 Energy Management
ENB423 Heating, Ventilation and Air-Conditioning
ENB432 Engineering Asset Management and Maintenance
ENB433 Plant and Process Design
ENB434 Tribology
ENB435 Computer Integrated Manufacturing
ENB477 Facade Engineering

Mechanical major - Students commencing Mid-Year 2013 onwards

Year 1 - Semester 2
ENB100 Engineering and Sustainability
ENB110 Engineering Statics and Materials
ENB200 Introducing Engineering Systems
MAB125 Foundations of Engineering Mathematics
OR
MAB126 Mathematics for Engineering 1

Year 1 - Summer
ENB120 Electrical Energy and Measurements
MAB126 Mathematics for Engineering 1
OR
MAB127 Mathematics for Engineering 2

Year 2 - Semester 1
ENB130 Mechanical and Thermal Energy
ENB212 Strength of Materials
ENB231 Materials and Manufacturing 1
MAB127 Mathematics for Engineering 2
OR
Free (MAB127 to be taken here if not done in Year 1.)

Year 2 - Semester 2
ENB150 Introducing Engineering Design
ENB205 Electrical and Computer Engineering
ENB221 Fluid Mechanics
ENB331 Materials and Manufacturing 2

Year 3 - Semester 1
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>ENB211</td>
<td>Dynamics</td>
</tr>
<tr>
<td>ENB222</td>
<td>Thermodynamics 1</td>
</tr>
<tr>
<td>ENB311</td>
<td>Stress Analysis</td>
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<tr>
<td>MAB233</td>
<td>Engineering Mathematics 3</td>
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**Year 3 - Semester 2**

<table>
<thead>
<tr>
<th>Course Code</th>
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<tbody>
<tr>
<td>ENB215</td>
<td>Fundamentals of Mechanical Design</td>
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<td>Fluids Dynamics</td>
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**Second Major/Minor unit**

**Year 4 - Semester 1**

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<tr>
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<td>Dynamics of Machinery</td>
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<tr>
<td>ENB316</td>
<td>Design of Machine Elements</td>
</tr>
<tr>
<td>ENB421</td>
<td>Thermodynamics 2</td>
</tr>
</tbody>
</table>

Selective (for those students who did not need to do MAB125 in Year 1)

- OR
- Free

**Year 4 - Semester 2**

<table>
<thead>
<tr>
<th>Course Code</th>
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<tr>
<td>BEB801</td>
<td>Project 1</td>
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<td>ENB313</td>
<td>Automatic Control</td>
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<td>Design and Maintenance of Machinery</td>
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**Second Major/Minor unit**

**Year 5 - Semester 1**

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<tr>
<td>BEB701</td>
<td>Work Integrated Learning 1</td>
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**Second Major/Minor unit**

**Mechanical Engineering Selectives**

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<tr>
<td>ENB314</td>
<td>Industrial Noise and Vibration</td>
</tr>
<tr>
<td>ENB333</td>
<td>Operations Management</td>
</tr>
<tr>
<td>ENB336</td>
<td>Industrial Engineering</td>
</tr>
<tr>
<td>ENB339</td>
<td>Introduction to Robotics</td>
</tr>
<tr>
<td>ENB422</td>
<td>Energy Management</td>
</tr>
<tr>
<td>ENB423</td>
<td>Heating, Ventilation and Air-Conditioning</td>
</tr>
<tr>
<td>ENB432</td>
<td>Engineering Asset Management and Maintenance</td>
</tr>
<tr>
<td>ENB433</td>
<td>Plant and Process Design</td>
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<tr>
<td>ENB434</td>
<td>Tribology</td>
</tr>
<tr>
<td>ENB435</td>
<td>Computer Integrated Manufacturing</td>
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</table>

**Engineering Management 2nd major (students who commenced EN40 in 2010 onwards)**

**Year 1 - Semester 1**

<table>
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<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>ENB100</td>
<td>Engineering and Sustainability</td>
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<td>ENB110</td>
<td>Engineering Statics and Materials</td>
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<tr>
<td>ENB130</td>
<td>Mechanical and Thermal Energy</td>
</tr>
<tr>
<td>MAB125</td>
<td>Foundations of Engineering Mathematics</td>
</tr>
<tr>
<td>MAB126</td>
<td>Mathematics for Engineering 1</td>
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OR

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<tr>
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<th>Course Title</th>
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<tbody>
<tr>
<td>MAB127</td>
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**Year 1 - Semester 2**

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<tr>
<td>ENB120</td>
<td>Electrical Energy and Measurements</td>
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<td>ENB150</td>
<td>Introducing Engineering Design</td>
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<td>ENB200</td>
<td>Introducing Engineering Systems</td>
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<td>MAB127</td>
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**Year 2 - Semester 1**

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<th>Course Title</th>
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<tr>
<td>ENB211</td>
<td>Dynamics</td>
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<tr>
<td>ENB212</td>
<td>Strength of Materials</td>
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<td>ENB231</td>
<td>Materials and Manufacturing 1</td>
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</thead>
<tbody>
<tr>
<td>MAB233</td>
<td>Engineering Mathematics 3</td>
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**Year 2 - Semester 2**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>ENB205</td>
<td>Electrical and Computer Engineering</td>
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<tr>
<td>ENB215</td>
<td>Fundamentals of Mechanical Design</td>
</tr>
<tr>
<td>ENB221</td>
<td>Fluid Mechanics</td>
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<td>ENB331</td>
<td>Materials and Manufacturing 2</td>
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Please note:

Students wishing to undertake CEED based Industry Project should consult the Subject Area Coordinator to provide a program for the final 2 years. CEED program requires that you undertake units BEB701, BEB801 and BEB802 together in either Semester 1 or 2.

**Year 3 - Semester 1**

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<tr>
<td>ENB312</td>
<td>Dynamics of Machinery</td>
</tr>
<tr>
<td>ENB316</td>
<td>Design of Machine Elements</td>
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</table>

CRICOS No. 00213J ABN 83 791 724 622

Information for future students

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Year 3 - Semester 2
ENB313  Automatic Control
ENB317  Design and Maintenance of Machinery
ENB321  Fluids Dynamics
MAB233  Engineering Mathematics 3
OR
Selective

Year 4 - Semester 1
ENB336  Industrial Engineering
ENB421  Thermodynamics 2
ENB432  Engineering Asset Management and
Maintenance
Selective

Year 4 - Semester 2
BEB701  Work Integrated Learning 1
BEB801  Project 1
BEB802  Project 2
ENB333  Operations Management

Engineering Management Selectives
Semester 1:
ENB423  Heating, Ventilation and Air-Conditioning
ENB435  Computer Integrated Manufacturing
Any Business unit with permission from coordinator.
Semester 2:
ENB339  Introduction to Robotics
ENB422  Energy Management
ENB433  Plant and Process Design
ENB434  Tribology
Any Business unit with permission from coordinator.

Engineering Management 2nd major – Mid-year entry 2013 onwards

Year 1 - Summer
ENB120  Electrical Energy and Measurements
MAB126  Mathematics for Engineering 1
OR
MAB127  Mathematics for Engineering 2

Year 2 - Semester 1
ENB130  Mechanical and Thermal Energy
ENB212  Strength of Materials
ENB231  Materials and Manufacturing 1
MAB127  Mathematics for Engineering 2
OR
Free (MAB127 to be taken here if not done in Year 1.)

Year 2 - Semester 2
ENB150  Introducing Engineering Design
ENB205  Electrical and Computer Engineering
ENB221  Fluid Mechanics
ENB331  Materials and Manufacturing 2

Year 3 - Semester 1
ENB211  Dynamics
ENB222  Thermodynamics 1
ENB311  Stress Analysis
MAB233  Engineering Mathematics 3

Year 3 - Semester 2
ENB215  Fundamentals of Mechanical Design
ENB321  Fluids Dynamics
ENB333  Operations Management

Year 4 - Semester 1
ENB312  Dynamics of Machinery
ENB316  Design of Machine Elements
ENB336  Industrial Engineering
ENB421  Thermodynamics 2

Year 4 - Semester 2
BEB801  Project 1
ENB313  Automatic Control
ENB317  Design and Maintenance of Machinery
Selective

Year 5 - Semester 1
BEB701  Work Integrated Learning 1
BEB802  Project 2
ENB432  Engineering Asset Management and Maintenance
Selective (for those students who did not need to do MAB125 in Year 1)
OR
Free

Engineering Management Selectives

<table>
<thead>
<tr>
<th>Semester 1:</th>
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<tbody>
<tr>
<td>ENB423 Heating, Ventilation and Air-Conditioning</td>
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<td>ENB435 Computer Integrated Manufacturing</td>
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<td>Any Business unit with permission from coordinator.</td>
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<tr>
<th>Semester 2:</th>
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<tbody>
<tr>
<td>ENB339 Introduction to Robotics</td>
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<tr>
<td>ENB422 Energy Management</td>
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<td>ENB433 Plant and Process Design</td>
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<td>ENB434 Tribology</td>
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</table>

Engineering Management 2nd major (EN40SMJ-ENGMGMT) unit set

ENB311 Stress Analysis
ENB313 Automatic Control
ENB317 Design and Maintenance of Machinery
ENB333 Operations Management
ENB336 Industrial Engineering
ENB421 Thermodynamics 2
ENB432 Engineering Asset Management and Maintenance
Selective (one unit from the Engineering Management unit options below):
ENB339 Introduction to Robotics
ENB422 Energy Management
ENB423 Heating, Ventilation and Air-Conditioning
ENB433 Plant and Process Design
ENB434 Tribology
ENB435 Computer Integrated Manufacturing
Any Business unit approved by coordinator.

Heavy Mechanical Engineering 2nd major (students who commenced EN40 in 2010 onwards)

<table>
<thead>
<tr>
<th>Year 1 - Semester 1</th>
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<tbody>
<tr>
<td>ENB100 Engineering and Sustainability</td>
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<td>ENB120 Electrical Energy and Measurements</td>
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<td>ENB211 Dynamics</td>
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<td>ENB212 Strength of Materials</td>
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<td>ENB231 Materials and Manufacturing 1</td>
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<td>MAB127 Mathematics for Engineering 2</td>
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<td>MAB233 Engineering Mathematics 3</td>
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<tbody>
<tr>
<td>ENB205 Electrical and Computer Engineering</td>
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<td>ENB215 Fundamentals of Mechanical Design</td>
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<tr>
<td>ENB221 Fluid Mechanics</td>
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<td>ENB331 Materials and Manufacturing 2</td>
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<tr>
<th>Year 3 - Semester 2</th>
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<thead>
<tr>
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<tbody>
<tr>
<td>ENB313</td>
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<td>MAB127</td>
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<td>OR</td>
<td>Free (MAB127 to be taken here if not done in Year 1.)</td>
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<table>
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<tr>
<th>Year 4 - Semester 1</th>
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<tbody>
<tr>
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<td>MAB233</td>
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<tr>
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<tbody>
<tr>
<td>BEB701</td>
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<td>ENB317</td>
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<td>ENB423</td>
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**Heavy Mechanical Engineering Selectives**

- Semester 1:
  - ENB336 Industrial Engineering
  - ENB339 Introduction to Robotics
  - ENB432 Engineering Asset Management and Maintenance
  - ENB435 Computer Integrated Manufacturing

- Heavy Mechanical Engineering 2nd major – Mid-year entry 2013 onwards

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>ENB100</td>
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<td>OR</td>
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# Heavy Mechanical Engineering Selectives

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<td>ENB339</td>
<td>Introduction to Robotics</td>
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<td>Engineering Asset Management and Maintenance</td>
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Heavy Mechanical Engineering 2nd major (EN40SMJ-HEVMECH) unit set

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<td>Automatic Control</td>
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<tr>
<td>ENB314</td>
<td>Industrial Noise and Vibration</td>
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<tr>
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<td>Design and Maintenance of Machinery</td>
</tr>
<tr>
<td>ENB421</td>
<td>Thermodynamics 2</td>
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<tr>
<td>ENB423</td>
<td>Heating, Ventilation and Air-Conditioning</td>
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<td>ENB433</td>
<td>Plant and Process Design</td>
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<td>ENB434</td>
<td>Tribology</td>
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Motor Racing Engineering 2nd major (students who commenced EN40 in 2010 onwards)

**Year 1 - Semester 1**

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<td>ENB130</td>
<td>Mechanical and Thermal Energy</td>
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<td>MAB125</td>
<td>Foundations of Engineering Mathematics</td>
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**Year 1 - Semester 2**

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**Year 2 - Semester 1**

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**Year 2 - Semester 2**

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<td>Fluid Mechanics</td>
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<tr>
<td>ENB331</td>
<td>Materials and Manufacturing 2</td>
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**Please note:**

Students wishing to undertake CEED based Industry Project should consult the Subject Area Coordinator to provide a program for the final 2 years. CEED program requires that you undertake units BEB701, BEB801 and BEB802 together in either Semester 1 or 2.

**Year 3 - Semester 1**

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<td>Dynamics of Machinery</td>
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**Year 3 - Semester 2**

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**Year 4 - Semester 1**

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**Year 4 - Semester 2**

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**Motor Racing Engineering Selectives**

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<td>Industrial Noise and Vibration</td>
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<td>ENB333</td>
<td>Operations Management</td>
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<td>ENB339</td>
<td>Introduction to Robotics</td>
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Mechanical Engineering minor (EN40MNR-MECHENG) unit set

ENB311  Stress Analysis
ENB313  Automatic Control
ENB317  Design and Maintenance of Machinery
ENB421  Thermodynamics 2

Faculty Minor options

Collaborative Digital Design

Please note: This minor is no longer available for commencement from the end of 2012.

The aim of the Collaborative Digital Design minor is to provide a series of units in which:

* You will collaborate with students from different disciplines across BEE on developing designs against a range of criteria.
* You will learn to use a range of software tools that improve communication between the members of the design and manufacture/construction team and between the project team and non-technical stakeholder.
* You will use a range of software support tools that allow the rapid exploration of alternatives and resolution of design problems.
* You will develop skills to reflect on and characterise how tools support interdisciplinary collaboration and to understand how these tools may fit into workflows in industry.

Select 48cp from the Collaborative Digital Design Unit Options below:

BEB210  Introduction to Collaboration
BEB211  Parametric Design Systems
BEB212  Advanced Collaboration
BEB213  Sustainable Design Systems
KIB103  Introduction to Web Design and Development

Indigenous Studies (DISC 30/06/2013)

For continuing students only. University minor EDBXMN-INDGEN (Indigenous Studies Minor) is another option for interested students.

This minor has been developed in consultation with the Oodgeroo Unit, to focus on indigenous perspectives on built environment and engineering and the professions served by these fields of study.

Units will be sourced in other faculties & divisions. Further information on units included in this minor is available at the Oodgeroo Unit subject information page at http://www.oodgeroo.qut.edu.au/about/unitscourse.jsp.

Select 48cp from the Indigenous Studies Unit Options below:

EDB007  Culture Studies: Indigenous Education
EDB038  Indigenous Australian Culture Studies
EDB039  Indigenous Politics and Political Culture
EDB040  Indigenous Knowledge: Research Ethics and Protocols
EDB041  Indigenous Australia: Country, Kin and Culture

Maximum of one unit of Work-integrated Learning (BEB701-BEB707). Work experience must be conducted in a professional or community organisation focusing on Indigenous issues.

International (DISC 30/06/2013)

For continuing students only. University minor BSBXMN-INTLBUS (International Business Minor) is another option for interested students.

This minor will allow you to focus on international issues and prepare for global professional practice. The focus on business languages and international business is designed to equip students who choose this minor to work more readily in international environments.

Select 48cp from the International or Language Unit Options below:

BSB119  Global Business
AMB336  International Marketing
AMB210  Importing and Exporting
AMB303  International Logistics
MGB225  Intercultural Communication and Negotiation Skills
Foreign Language units (minimum of two units)

Project Collaboration

The Minor in Project Collaboration is designed to provide you with appropriate knowledge and skills for your involvement in delivering projects in professional organisations in the public and private sectors. It addresses the main concepts and methodologies of project management.

The course will aim to produce graduates who are capable of supporting project managers to successfully managing projects through the management of constraints in time, cost and
quality, as well as social, political and environmental challenges.

The Minor in Project Collaboration offers you both the theoretical understanding and practical applications of professional project development and management practices, with a focus on built environment and engineering projects.

Note:
***Students in UD40 Bachelor of Urban Development (Construction Management) cannot take UDB313 or BEB113 due to content overlap with core Construction Management units.

Select 48cp from the Project Collaboration Unit Options below:

- **UDB313** Programming and Scheduling
- **BEB110** Organising and Managing Project Team
- **BEB111** Managing Project Quality
- **BEB112** Principle of Project Management
- **BEB113** Managing Project Cost
- **BEB114** Project Financing

### Research

(BEE students only)
This minor is designed to ensure that students with interest and capacity for higher degree research have the opportunity, during their undergraduate degree, to be well-prepared to undertake further study following graduation. This minor contains units that allow you to develop, implement and evaluate research knowledge and skills.

Units will be offered to illustrate a broad range of research types such as practice-led research, experimentally-based research, and work-based research.

Select 48cp from the Research Unit Options below:

- **EDN612** Conducting Innovative Educational Research
- **ENB379** Transport Engineering and Planning Applications
- **ENB441** Applied Image Processing
- **ENB448** Signal Processing and Filtering
- **ENB474** Finite Element Methods
- **MAB210** Probability and Stochastic Modelling 1
- **MAB314** Probability and Stochastic Modelling 2
- **MAB524** Statistical Inference
- **MAB536** Time Series Analysis 1
- **PYB110** Psychological Research Methods

### Sustainability (Discontinued)

PLEASE NOTE: This minor is no longer available for commencement from the end of 2012.

This minor will allow you to develop deeper understandings of and specialisations in the future role of your profession in the sustainable development of modern societies. The minor will build on Faculty-wide common units in Professional Learning and Sustainability.

Minor Contents:

* One to four specialisation units
* Up to two units of work-integrated learning (WIL)
* Up to two problem-based multidisciplinary project units

Notes:
Students would be expected to complete one of DEB100/ENB100/UDB100 first, but this would not be a prerequisite.

All students in the Bachelor of Design seeking a Minor in Sustainability must take a minimum of two of the following units: BEB901-BEB904

Design students enrolling in the Sustainability minor must first consult and obtain approval from the Subject Area Coordinator/Course Coordinator prior to enrolling in BEB801 or BEB802.

Select 48cp from the Sustainability Unit Options below:

#### Specialisation Units:
- **BEB901** Retrofitting for Sustainability
- **BEB902** Greening the Built Environment
- **BEB903** Greenhouse Solutions
- **BEB904** Eco-Innovation for Sustainability
- **BEB213** Sustainable Design Systems

#### Work-Integrated Learning Units (must address sustainability objectives):
- **BEB701** Work Integrated Learning 1
- **BEB702** Work Integrated Learning 2

#### Multi-disciplinary Project Units (must address sustainability objectives):
- **BEB801** Project 1
- **BEB802** Project 2

### Work-integrated Learning 1

(Not available to UD40MJR-URBPLAN students.)
This minor will allow you to undertake structured work experience, guided by...
academic objectives, for academic credit. Select 48cp from the Work-integrated Learning Unit Options below:

BEB701 Work Integrated Learning 1
BEB702 Work Integrated Learning 2
BEB703 Work Integrated Learning 3
BEB704 Work Integrated Learning 4
BEB705 Work Integrated Learning 5
BEB706 Work Integrated Learning 6
BEB707 Work Integrated Learning 7

Urban Development Minor options

Building Economics (UDBXMNR-BUILDEC)
(not available to UD40MJR-CONSMGT or UD40MJR-URBPLAN students)
UDB216 The Environment and the Quantity Surveyor
UDB316 Cost Planning and Control
   Plus 1 from:
   UDB110 Residential Construction and Engineering
   UDB210 Commercial Construction and Engineering
   Plus 1 from:
   UDB113 Measurement 1
UDB104 Urban Development Economics

Legal Administration in Construction (UDBXMNR-LEGCONS)
(not available to UD40MJR-CONSMGT or UD40MJR-PROPECO or UD40MJR-URBPLAN students)
UDB102 Applied Law
UDB312 Contract Administration
   Plus 1 from:
   UDB216 The Environment and the Quantity Surveyor
UDB101 Stewardship of Land
   Plus 1 from:
   UDB202 Business Skills
UDB314 Statutory Construction Law

Property Economics Development (UDBXMNR-PROPDEV)
(not available to UD40MJR-PROPECO students)
UDB140 Property Valuation 1
UDB240 Planning Theory and Processes

OR

UDB245 Urban Land Studies
(Planning students must select UDB245.)
UDB302 Development Process
OR
UDB243 Property Economics
(UD40 students must select UDB243.)
Select one unit from the Property Economics Development unit options below:
UDB242 Property Valuation 2
UDB246 Property Feasibility Studies
UDB341 Property Finance

Property Economics Investment (UDBXMNR-PROPINV)
(not available to UD40MJR-PROPECO students)
UDB140 Property Valuation 1
UDB242 Property Valuation 2
UDB246 Property Feasibility Studies
   Plus 1 from:
   UDB341 Property Finance
UDB344 Property and Asset Management

Property Economics Valuation (UDBXMNR-PROPVAL)
(not available to UD40MJR-PROPECO students)
UDB140 Property Valuation 1
UDB241 Property Law 1
UDB242 Property Valuation 2
UDB247 Property Valuation 3

Residential Construction (UDBXMNR-RESCONS)
(not available to UD40MJR-CONSMGT or UD40MJR-QUANSRV or UD40MJR-URBPLAN students)
Select four units from the Residential Construction unit options below:
UDB110 Residential Construction and Engineering
UDB111 Engineering Construction Materials
UDB112 Professional Studies 1
UDB113 Measurement 1
UDB213 Construction Estimating
UDB214 Professional Studies 2

Urban and Regional Planning Studies (UDBXMNR-URBPLAN)
Select four units from the Urban and Regional Planning Studies unit options below, of which at least two must be advanced units.

Introductory Units:
- UDB101 Stewardship of Land
- UDB161 Introduction to Planning and Design
- UDB162 History of Built Environment
- UDB163 Land Use Planning
- UDB164 Population and Urban Studies

Advanced Units:
- UDB266 Planning Processes and Consultations
- UDB267 Development Assessment and Infrastructure
- UDB368 Urban Design
- UDB369 Negotiation and Conflict Resolution
- UDB370 Environmental Planning and Management
- UDB471 Urban Planning Practice
- UDB475 Regional and Metropolitan Policy

DISCONTINUED: Spatial Science Studies (UDBXMNR-SPATSCI)

PLEASE NOTE: This minor set has been discontinued from the end of 2012, and is available to continuing students only.

Select four units from the Spatial Science Studies unit options below:
- UDB181 Geospatial Positioning and GPS
- UDB182 Surveying
- UDB281 Geographic Information Systems
- UDB282 Remote Sensing
- UDB381 Geospatial Mapping
- UDB387 Spatial and Land Information Management
- UDB388 Spatial Analysis Practice

Language Minor options

Language Minor Options

Further information is located at:
http://www.bus.qut.edu.au/courses/languages/

Mandarin Language (BSBXMNR-MNDARIN)
Italian (BSGUMNR-ITALIAN)
Japanese (BSGUMNR-JAPAN)
Spanish (BSGUMNR-SPANISH)

French (BSUQMNR-FRENCH)
German (BSUQMNR-GERMAN)
Indonesian (BSUQMNR-INDO)
Japanese (BSUQMNR-JAPAN)
Korean (BSUQMNR-KOREAN)
Russian (BSUQMNR-RUSSIAN)
Spanish (BSUQMNR-SPANISH)

Potential Careers:
Engineer, Mechanical Engineer.

UNIT SYNOPSISES

AMB210 IMPORTING AND EXPORTING
Trade has become fundamental to the survival and growth of many businesses in Australia as well as other economies. International business students need an understanding of the many challenges entailed in the management of trade. Import and export practice is an applied, technical and evolving area of international business operations that reflects the dynamic nature of trans-national trade in the global economy. This unit examines the importance of importing and exporting for Australia’s economic development.

Prerequisites: BSB119 or CTB119
Equivalents: AMX210, IBB210
Credit points: 12
Campus: Gardens Point
Teaching period: 2013 SEM-1 and 2013 SEM-2

AMB303 INTERNATIONAL LOGISTICS
This unit examines international logistics through the concepts of international distribution channels and international supply chain management. Strategy in managing international logistical constraints is emphasised with practical studies of contemporary international supply chain management in international industries. Traditional costs and financial aspects of supply chain management are considered. Contemporary issues are incorporated including: the impact of e-business on international logistics; the evolution of new technologies for 'smart' packaging, warehousing and international stock control; the combination of international services with goods products; recent technological developments in international transportation and product quality control.

Prerequisites: AMB210, IBB210, AMB240, or CTB240
Equivalents: AMX303, IBB303
Credit points: 12
Campus: Gardens Point
Teaching period: 2013 SEM-1 and 2013 SEM-2
AMB336 INTERNATIONAL MARKETING
The aim of this unit is to provide students with a thorough understanding of the multiplicity of issues that impact on the development of international marketing strategies and plans and their operational implementation. The unit is highly applied and provides students with the following opportunities: to analyse global international firms, their marketing strategies and various international marketing issues in a variety of geographic and industry contexts; to evaluate methodologies and new practices for handling problems and issues typical of global and international markets and competition; to develop an operationally sound international marketing plan.
Prerequisites: AMB240, CTB240, AMB210, or IBB210
Equivalents: AMX336, IBB213
Credit points: 12
Campus: Gardens Point and Caboolture
Teaching period: 2013 SEM-1, 2013 SEM-2 and 2013 SUM

BEB110 ORGANISING AND MANAGING PROJECT TEAM
The unit focus is on the dynamics of managing and organising project teams involved in delivering built environment, engineering or infrastructure projects. Recent literature has identified the need for managers and leaders to acquire knowledge in the areas of self management and the management of others to contribute to project effectiveness. You will be introduced to key managerial and human resource theories to assist in the development of analytical and interpretive skills to enable you to proactively and effectively lead project teams.
Credit points: 12
Campus: Gardens Point
Teaching period: 2013 SEM-1

BEB111 MANAGING PROJECT QUALITY
This unit is one of four within the BEE minor in Project Collaboration and is designed to provide you with appropriate knowledge and skills needed for your involvement in delivering projects in professional organisations in the public and private sectors, by ensuring that the achieved project quality outcomes accord with client requirements and satisfy customer expectations.
Credit points: 12
Contact hours: 3 per week
Campus: Gardens Point
Teaching period: 2013 SEM-1

BEB112 PRINCIPLE OF PROJECT MANAGEMENT
Project Management is the overall planning, control and coordination of a project, from inception to completion, aimed at meeting a client’s requirements in order that the project will be completed on time within authorized cost and to the required quality standards. The aim of this unit is to provide the key concepts and foundation knowledge in project management, and to describe, clarify, and formalise project management process.
Credit points: 12
Contact hours: 3 per week
Campus: Gardens Point
Teaching period: 2013 SEM-2

BEB113 MANAGING PROJECT COST
Cost is a major metric of a successful project management. This unit introduces the process of managing project cost which includes planning, estimating, budgeting, and controlling costs so that the project can be completed within the approved budget.
Credit points: 12
Contact hours: 3 per week
Campus: Gardens Point
Teaching period: 2013 SEM-2

BEB114 PROJECT FINANCING
Project is growing in complexity and size. Many projects never get off the ground due to insufficient financing. It is therefore necessary for project managers to know the sources and cost of project funds in order to package a financially viable project for approval. This unit introduces capital budgeting, project finance, and risk analysis. It covers the capital allocation framework, project cash flows, cost of capital, financial risk analysis, and how various types of projects are financed.
Credit points: 12
Campus: Gardens Point
Teaching period: 2013 SEM-2

BEB210 INTRODUCTION TO COLLABORATION
This unit introduces students to the foundational aspects of collaboration within the design and documentation of artefacts, using Building Information Modelling (BIM) approach. Focusing on multidisciplinary collaboration during the complete life cycle of a built environment facility. This unit is an approach to the theory and practice of BIM software, exploring the translation from Computer Aided Design (CAD) to BIM. This unit is also the foundation for BEB212 Advanced Collaboration.
Assumed knowledge: DE40/ UD40 students completion of Yr 1 units; EN40 students completion of Yr 1 & 2 units. Additionally, for all students, working knowledge of 3D CAD software for your discipline, demonstrated by completion of one unit utilising 3D CAD or equivalent. Credit points: 12
Contact hours: 3 per week
Campus: Gardens Point
Teaching period: 2013 SEM-1

BEB211 PARAMETRIC DESIGN SYSTEMS
This subject introduces students to the use of parametric geometry systems that are used in early stages of design. These are the systems used by major design firms such as Zaha Hadid and Frank Gehry (architecture), SOM (architecture/engineering) and Arup (engineering).
Assumed knowledge: DE40/ UD40 students completion of Yr 1 units; EN40 students completion of Yr 1 & 2 units. Additionally, for all students, working knowledge of 3D CAD software for your discipline, demonstrated by completion of one unit utilising 3D CAD or equivalent. Credit points: 12
Contact hours: 3 per week
Campus: Gardens Point
Teaching period: 2013 SEM-1
BEB212 ADVANCED COLLABORATION
In a real environment designers need to collaborate with others using a range of design tools provided by different software vendors. In this unit you will develop an understanding of interoperability and methods of maximising the benefits of information exchange across a range of design tools.
Prerequisites: BEB210  Credit points: 12  Contact hours: 3 per week  Campus: Gardens Point  Teaching period: 2013 SEM-2

BEB213 SUSTAINABLE DESIGN SYSTEMS
A range of sustainability tools will be covered that support environmental impact analysis, economic analysis and social impact assessment, within a holistic approach to design. The capabilities of the tools will be discussed and then used to build up appropriate workflows that support integrated assessment for sustainability. These will be applied to a comprehensive design problem to reinforce the students understanding.
Assumed knowledge: DE40/UD40 students completion of Yr 1 units; EN40 students completion of Yr 1 & 2 units. Additionally, for all students, working knowledge of 3D CAD software for your discipline, demonstrated by completion of one unit utilising 3D CAD or equivalent.  Credit points: 12  Contact hours: 3 per week  Campus: Gardens Point  Teaching period: 2013 SEM-2

BEB701 WORK INTEGRATED LEARNING 1
This unit aims to provide you with the opportunity to learn in a workplace environment. It will involve attendance, participation, observation, critical reflection, and report writing on workplace activities. The emphasis of your critical reflection and report writing will be on identifying and describing aspects of professional relevance incorporating: collaboration and teamwork; work place, health and safety; professional conduct; ethical responsibility, and other aspects of your work place experience.
This unit may form part of your (compulsory) course core (as required by professional accrediting bodies e.g. Engineers Australia, Australian Institute of Building, Royal Institution of Chartered Surveyors), or it may be one of several work integrated learning (WIL) units (selected as part of a Minor).
Assumed knowledge: This unit is not designed for first year students. It is recommended that you check WIL Community Blackboard site for information on enrolment pattern. If you are EN40 student you can only enrol after completing a minimum of 192 cp.  Credit points: 12  Campus: Gardens Point  Teaching period: 2013 SEM-1, 2013 SEM-2 and 2013 SUM

BEB702 WORK INTEGRATED LEARNING 2
This unit aims to provide you with the opportunity to continue to learn in a work place environment. It will involve attendance, participation, observation, and reflection on activities negotiated with the work place supervisor. The emphasis of your critical reflection for this unit is to explicate the culture of the organisation you work for via the profile it presents to its employees, clients and the public and critique the role of an individual in a work place and how this relates to other employees in meeting the organisations aims and objectives.
Credit points: 12  Campus: Gardens Point  Teaching period: 2013 SEM-1 and 2013 SEM-2

BEB703 WORK INTEGRATED LEARNING 3
This unit will provide you with the opportunity to consolidate and extend your learning through a work placement and associated projects. It will involve some on-campus attendance at lectures and online tutorials as well as participation in, observation of, and reflection on activities undertaken during the work placement. The emphasis in the unit is on the critical reflection of academic learning and its application in practice. This is supported through an emphasis on the development of high order observation skills and critical reflection skills. The outcomes of your learning will be recorded in your e-portfolio. Most students undertaking this unit will do so as part of a WIL Minor.
Credit points: 12  Campus: Gardens Point  Teaching period: 2013 SEM-1 and 2013 SEM-2

BEB704 WORK INTEGRATED LEARNING 4
As with the previous WIL units, this unit involves participation in a work placement, associated projects and on-campus lectures and seminars to further extend and consolidate students’ learning and preparation for professional practice. The emphasis in this unit is on developing a broader appreciation of the issues impacting on industry, the nature of academic and practice knowledge and how they can be productively integrated to respond to the needs of and the challenges facing professional practice. The unit also gives explicit attention to the continuing development of graduate capabilities including oral communications skills. This unit is normally undertaken as the last unit in the first WIL Minor.
Credit points: 12  Campus: Gardens Point  Teaching period: 2013 SEM-1 and 2013 SEM-2

BEB705 WORK INTEGRATED LEARNING 5
This unit is normally undertaken as the first unit of a second WIL Minor. While the first WIL Minor emphasises the context of practice and its relationship to academia, the second WIL Minor focuses on the participation of students in work in a more proactive and leading way thereby providing the opportunity for sophisticated, collaborative and reciprocal learning and outcomes for all concerned. In this context, this unit introduces students to the notion of
practice-led research and research-led practice and provides them with the opportunity to use practice-based projects as vehicles for further developing discipline knowledge as well as advanced critical enquiry skills. In undertaking the unit, students will collaborate with a project supervisor and prepare an interim and final report and seminar on the project.

**Credit points:** 12  **Campus:** Gardens Point  **Teaching period:** 2013 SEM-1 and 2013 SEM-2

**BEB706 WORK INTEGRATED LEARNING 6**
This unit is normally undertaken as the first unit of a second WIL Minor. While the first WIL Minor emphasises the context of practice and its relationship to academia, the second WIL Minor focuses on the participation of students in work in a more proactive and leading way thereby providing the opportunity for sophisticated, collaborative and reciprocal learning and outcomes for all concerned. In this context, this unit introduces students to the notion of practice-led research and research-led practice and provides them with the opportunity to use practice-based projects as vehicles for further developing discipline knowledge as well as advanced critical enquiry skills. In undertaking the unit, students will collaborate with a project supervisor and prepare an interim and final report and seminar on the project.

**Credit points:** 12  **Campus:** Gardens Point  **Teaching period:** 2013 SEM-1 and 2013 SEM-2

**BEB707 WORK INTEGRATED LEARNING 7**
This unit is normally undertaken as the first unit of a second WIL Minor. While the first WIL Minor emphasises the context of practice and its relationship to academia, the second WIL Minor focuses on the participation of students in work in a more proactive and leading way thereby providing the opportunity for sophisticated, collaborative and reciprocal learning and outcomes for all concerned. In this context, this unit introduces students to the notion of practice-led research and research-led practice and provides them with the opportunity to use practice-based projects as vehicles for further developing discipline knowledge as well as advanced critical enquiry skills. In undertaking the unit, students will collaborate with a project supervisor and prepare an interim and final report and seminar on the project.

**Credit points:** 12  **Campus:** Gardens Point  **Teaching period:** 2013 SEM-1 and 2013 SEM-2

**BEB801 PROJECT 1**
This unit is usually taken in the final year of study. Students complete an individual project involving the application of skills and knowledge attained during the earlier years of their degree program. For some students, this unit will be taken one of two ‘project’ units related to the same student project; in such cases this unit may be a pre-requisite or co-requisite to the second unit (or a follow-on from the first unit). The final ‘deliverable’ for this unit may vary for each discipline and details will be provided in lectures/tutorials and on the Blackboard website.

**Equivalents:** CEB411, CEB420, CEB423, EEB781-1, EEB889-1

**Credit points:** 12  **Contact hours:** 2 per week  **Campus:** Gardens Point  **Teaching period:** 2013 SEM-1 and 2013 SEM-2

**BEB802 PROJECT 2**
This unit is usually taken in the final year of study, and is only taken by students completing a two unit project. Students complete an individual project involving the application of skills and knowledge attained during the earlier years of their degree program. This unit will be taken as the second of two ‘project’ units related to the same student project.

**Equivalents:** CEB415, EEB782-2, EEB889-2

**Credit points:** 12  **Contact hours:** 2 per week  **Campus:** Gardens Point  **Teaching period:** 2013 SEM-1 and 2013 SEM-2

**BEB901 RETROFITTING FOR SUSTAINABILITY**
**THIS UNIT IS OFFERED IN ODD-NUMBERED YEARS ONLY.**
This unit will provide students with an opportunity to examine in depth current data on the condition of built and natural environments and the wellbeing of people living within these environments, worldwide and in Australia. Special attention will be given to problems observed in the built environment, such as greenhouse gas emissions, population increase, over consumption and resource depletion including water shortages, coastal degradation and urban sprawl.

**Credit points:** 12  **Campus:** Gardens Point  **Teaching period:** 2011 SEM-1

**BEB902 GREENING THE BUILT ENVIRONMENT**
**THIS UNIT IS OFFERED IN EVEN-NUMBERED YEARS ONLY.**
This unit presents the challenges and opportunities for built environment professionals to contribute to a sustainable society. It introduces a paradigm shift in environmental design from reducing negative environmental impacts to generating net positive impacts. It shows how, with a new approach to design, development can be a sustainability solution. Positive Development would increase overall social and natural capital beyond that which existed on site before settlement. Building design principles and eco-technologies are surveyed that address sustainability issues at the level of buildings, building components and materials. In addition, green practitioners will explain how they have dealt with impediments to sustainable development in an evening lecture series.

**Credit points:** 12  **Campus:** Gardens Point
BEB903 GREENHOUSE SOLUTIONS
This unit is offered in odd-numbered years only.
The unit aims to briefly introduce students to barriers facing
the adoption of greenhouse abatement strategies and the
methods by which these barriers can be overcome. Finally,
the unit will describe how energy, transport and urban
systems, like the climate system itself, have great inertia:
they take decades to change. This means that in order to
achieve significant reductions in greenhouse emissions, and
to avoid the worst effects of climate change, early planning
and action is critical for these systems.
Credit points: 12  Campus: Gardens Point  Teaching period: 2011 SEM-2

BEB904 ECO-INNOVATION FOR SUSTAINABILITY
This unit is offered in even-numbered years only.
This is one of the units in a Minor in Sustainability designed
to equip you to address fundamental social, ecological and
economic challenges facing society using a systems design
approach. This unit focuses on ‘eco-innovation’, which
includes institutional, technological and spatial design
solutions that increase the ecological base, human health,
well-being and equity as well as reducing total resource
consumption and waste. New strategies are explored which
can help find leverage points where small actions or
investments generate system-wide improvements.
Credit points: 12  Campus: Gardens Point

BSB119 GLOBAL BUSINESS
This unit examines the drivers of globalisation and the
diversity of country markets at an introductory level. It
develops the skills and understanding to identify and
respond to the opportunities, challenges and risks of
conducting business across politically, economically and
culturally diverse environments. An authentic country
feasibility study is undertaken to help identify where a firm
can find opportunities both in terms of actual and potential
markets and the location for value-adding activities. The unit
aims for students to have developed a comprehension of the
nature and role of globalisation and the drivers of
international business, a. knowledge of the competitive
forces and challenges confronting all business as a
consequence of globalisation processes and an awareness
of the additional knowledge and skills required of
management to operate business internationally across a
diversity of environments.
Antirequisites: BSB116, BSB112, BSB119  Equivalents: BSB119, CTB119  Credit points: 12  Contact hours: 3 per week  Campus: Gardens Point and Caboolture  Teaching period: 2013 SEM-1, 2013 SEM-2 and 2013 SUM

EDB007 CULTURE STUDIES: INDIGENOUS EDUCATION
Numerous government reports and recent discussions
about reconciliation have called for an increased
commitment to Indigenous education in Australia. Teachers
are increasingly being asked to improve their skill,
knowledge and understanding to teach Indigenous students,
and to teach curricula which incorporates Indigenous
viewpoints on social, cultural and historical matters. This
unit begins with an analysis of the students’ own cultural
place in the Australian context and afterwards moves
towards an understanding of Aboriginal and Torres Strait
Islander perspectives on history and contemporary issues,
and an understanding of why Aboriginal and Torres Strait
Islander students have been so disadvantaged by the
Australian education system.
Credit points: 12  Contact hours: 3 per week  Campus: Internet, Kelvin Grove and Caboolture  Teaching period: 2013 6TP4 and 2013 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

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

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: 2013 SEM-2

EDB041 INDIGENOUS AUSTRALIA: COUNTRY, KIN AND CULTURE

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This unit aims to expand understanding of issues of importance to Indigenous people and to relate those issues to the practices in human service agencies. The Oodgeroo staff and leaders from the Indigenous community will work with staff from Social Work and Human Services in presenting this unit.

Antirequisites: SWB109  Credit points: 12

EDN612 CONDUCTING INNOVATIVE EDUCATIONAL RESEARCH
The unit aims to enhance capacities for undertaking research in educational and other learning contexts that is innovative in both its focus and its approach. The unit engages students in a comprehensive examination of relevant research theory and practical application.
Prerequisites: EDN611  Credit points: 12  Campus: Internet and Kelvin Grove  Teaching period: 2013 SEM-1 and 2013 SEM-2

ENB100 ENGINEERING AND SUSTAINABILITY
This unit introduces you to the essential professional skills and practices of engineers in the context of sustainable development.
Equivalents: DEB100, UDB100  Credit points: 12  Contact hours: 3 per week  Campus: Gardens Point  Teaching period: 2013 SEM-1 and 2013 SEM-2

ENB110 ENGINEERING STATICS AND MATERIALS
This unit introduces you to forces and moments between rigid bodies and to the properties of steel. This knowledge will help you to understand how major infrastructure systems (e.g. bridges, skyscrapers, roads, factories), mechanical systems (e.g. engines, turbines, pumps, vehicles), and electrical systems (e.g. power stations, transmission lines, motors) are designed and built. This unit is one of four first year units covering fundamental engineering principles that you will need in your profession.
Credit points: 12  Contact hours: 4 per week  Campus: Gardens Point  Teaching period: 2013 SEM-1 and 2013 SEM-2

ENB120 ELECTRICAL ENERGY AND MEASUREMENTS
This unit introduces you to basic electrical circuit concepts. It requires you to perform circuit analysis, circuit synthesis, and the measurement and testing of relevant quantities within circuits.
Credit points: 12  Contact hours: 3 per week  Campus: Gardens Point  Teaching period: 2013 SEM-2 and 2013 SUM

ENB130 MECHANICAL AND THERMAL ENERGY
Engineers work with numerous kinds of systems where consideration must be given to the motion within, and associated energy of, the system. This unit introduces the student to the concepts of mechanical and thermal energy in the context of real engineering systems. The inter-relationships of between forces, motion and energy is described as related to the flow of energy within these engineering systems. After an introduction to engineering units, concepts and data, Newton’s first and second laws are used in the description of system motion and the concepts of force and energy, conservation of momentum and conservation of energy are introduced and described. Thermodynamic processes, certain thermo-physical parameters and the first and second law of thermodynamics are introduced and used to describe simple engineering systems. This is then expanded to include the generation and transport of energy through these systems in terms of convection, conduction and radiation heat transfer.
Credit points: 12  Contact hours: 4 per week  Campus: Gardens Point  Teaching period: 2013 SEM-1

ENB150 INTRODUCING ENGINEERING DESIGN
This unit introduces you to engineering design. A multi-disciplinary approach is taken with an emphasis in engineering systems, technical design and project management.
Assumed knowledge: ENB110 is assumed knowledge.
Credit points: 12  Contact hours: 4 per week  Campus: Gardens Point  Teaching period: 2013 SEM-2

ENB200 INTRODUCING ENGINEERING SYSTEMS
This unit will enable you as a graduating Built Environment and Engineering professional to take active and positive steps to transform professional practice in ways that promote the sustainability of our planet, our economy and our society. As future professionals in the fields of Design, Urban Development and Engineering Systems, you will need to understand and apply the concepts of sustainability in your professional practice if we are to achieve sustainable development in the 21st Century.
Credit points: 12  Campus: Gardens Point  Teaching period: 2013 SEM-2

ENB205 ELECTRICAL AND COMPUTER ENGINEERING
This unit introduces single and three phase power, electrical machines, principles of transformers, electronic circuits and sensors, filters, operational amplifier applications. It also covers computing fundamentals, programming in MATLAB and Excel using applications in electrical and computer engineering.
Prerequisites: ENB120 or ENB103  Credit points: 12  Contact hours: 4 per week  Campus: Gardens Point  Teaching period: 2013 SEM-2

ENB211 DYNAMICS
Fundamental equations of particle kinetics; energy, power, impulse and momentum; kinematics of rigid bodies in plane motion, relative motion and motion relative to rotating axes; kinetics of rigid bodies, Basic machine components, (Gears,
ENB212 STRENGTH OF MATERIALS
This unit introduces the analysis of stress and strain in simple engineering components and systems such as uniaxial and bending stresses, deflection of beams, torsion, thin walled structures, combined loading, yield criteria, and introduces the finite element method (FEA).
Prerequisites: ENB110 or ENB101 and ENB104 Credit points: 12 Contact hours: 5 per week Campus: Gardens Point Teaching period: 2013 SEM-1

ENB215 FUNDAMNETALS OF MECHANICAL DESIGN
Basic procedures of design, design for sustainability, universal design, Concept development, creative problem solving, Basic component design, computational scheme in design, manufacture & materials.
Assumed knowledge: MAB126 or MAB180 or MAB131, and ENB101 or ENB110, and ENB104 or ENB110 are assumed knowledge. Equivalents: MMB281 Credit points: 12 Contact hours: 5 per week Campus: Gardens Point Teaching period: 2013 SEM-2

ENB221 FLUID MECHANICS
This unit introduces the basic concepts of fluid mechanics and applies them to some simple engineering problems.
Assumed knowledge: MAB126 or MAB180 or MAB131, and ENB101 or ENB110 are assumed knowledge. Credit points: 12 Contact hours: 4 per week Campus: Gardens Point Teaching period: 2013 SEM-2

ENB222 THERMODYNAMICS 1
Thermodynamic behaviour of substances; theory and application of the 1st and 2nd laws of thermodynamics; thermodynamic cycles, including gas cycles, vapour power cycles and refrigeration cycles; gas-vapour mixtures and the principles of air-conditioning; fuels and combustion.
Assumed knowledge: MAB127 or MAB182 or MAB132, and ENB130 or PCB136 are assumed knowledge. Credit points: 12 Contact hours: 4 per week Campus: Gardens Point Teaching period: 2013 SEM-1

ENB231 MATERIALS AND MANUFACTURING 1
Materials and their engineering applications, Manufacturing systems and technology, material properties and manufacturing, material selection, failure, graphical communication.
Assumed knowledge: ENB104 or ENB110 is assumed knowledge. Credit points: 12 Contact hours: 4 per week

Prerequisites: ENB316 Credit points: 12 Contact hours: 4 per week Campus: Gardens Point Teaching period: 2013 SEM-1

ENB316 DESIGN OF MACHINE ELEMENTS
Analysis of operating conditions and their impact on design solutions, design of fasteners, shafts and other mechanical components, design of springs. Design for manufacturability, fundamentals of lubrication, computer aided design (solid modelling), frames and housings.
Prerequisites: ENB215 Equivalents: MMB381 Credit points: 12 Contact hours: 6 per week Campus: Gardens Point Teaching period: 2013 SEM-1

ENB317 DESIGN AND MAINTENANCE OF MACHINERY
Design of equipment for special applications such as pressure vessel, food processing, Design of machine system, Optimisation of design, machinery failure, prediction, analysis and prevention. Design for reliability application of FMEA, Condition monitoring, ethics, Fundamentals of friction, wear related to design, Failure analysis & OH&S.
Prerequisites: ENB316 Equivalents: MMB382 Credit points: 12 Contact hours: 4 per week Campus: Gardens Point Teaching period: 2013 SEM-2

ENB321 FLUIDS DYNAMICS
Hydraulic and pneumatic systems; design, analysis and performance of pumps, turbines and fluid couplings; unsteady pipe flow; flow around solid bodies, including potential flow and boundary layers; compressible flow and shock waves.
Prerequisites: ENB201 or ENB221 Equivalents: MMB352 Credit points: 12 Contact hours: 4 per week Campus: Gardens Point Teaching period: 2013 SEM-2

ENB331 MATERIALS AND MANUFACTURING 2
This unit extends the formative body of knowledge gained in ENB231 and introduces the shear deformation mechanisms of engineering material and how these properties can be used to understand the mechanics of metal cutting. Descriptive and analytical information about different material removal processes and material failure mechanisms are provided to you through lectures, tutorials, practical laboratory and case studies. The unit also provides you with an excellent opportunity to apply the knowledge in the design and manufacture of a component.
Prerequisites: ENB231 Credit points: 12 Contact hours: 4 per week Campus: Gardens Point Teaching period: 2013 SEM-2

ENB333 OPERATIONS MANAGEMENT
This unit develops students' ability in applying quantitative techniques in solving different types of industrial operations problems. Topics include: product mix, assignment and transportation models; location and layout decisions, job design analysis; project planning; quality control and the use of simulation in operations management.
Equivalents: MMB476 Credit points: 12 Contact hours: 4 per week Campus: Gardens Point Teaching period: 2013 SEM-2

ENB336 INDUSTRIAL ENGINEERING
Aim of this unit is to develop skills and understanding the concepts and techniques of lean manufacturing (methods engineering). These includes identifying wastes using Value Stream Mapping (VSM), 5S, SMED, JIT, plant layout, cell design with proper material handling and balance and job design with due consideration to ergonomics.
Assumed knowledge: MAB233 is assumed knowledge.
Credit points: 12 Contact hours: 4 per week Campus: Gardens Point Teaching period: 2013 SEM-1

ENB339 INTRODUCTION TO ROBOTICS
This unit introduces you to the components, systems and mathematical foundations of robotics. The unit introduces the technologies and methods used in the design and programming of modern intelligent robots, and encourages critical thinking about the use of robotic technologies in various applications. The unit emphasizes the practical application of robotic theory to the design and synthesis of robotic systems that respond accurately and repeatably.
Assumed knowledge: ENB201 or ENB221 and ENB222 are assumed knowledge. Equivalents: MMB451 Credit points: 12 Contact hours: 5 per week Campus: Gardens Point Teaching period: 2013 SEM-2

ENB379 TRANSPORT ENGINEERING AND PLANNING APPLICATIONS
The environmental engineer must be familiar with the role of each transport mode in the overall transport task, along with current issues associated with each mode. This must be overarched by an understanding of the system for planning and management of transport projects and systems, particularly in context with economic, environmental and social attributes. This unit provides students who wish to pursue a career in environmental engineering with an understanding of these areas. The unit also includes case studies covering the environmental impacts for some of the
urban and rural transport and infrastructure projects especially in the area of community consultation. 

**Assumed knowledge:** ENB274 and ENB372 are assumed knowledge.  

**Equivalents:** CEB419  

**Credit points:** 12  

**Contact hours:** 4 per week  

**Campus:** Gardens Point  

**Teaching period:** 2013 SEM-1  

**ENB421 THERMODYNAMICS 2**  
Applications of heat transfer theory in steam power plant, refrigeration and gas turbines; steady state and transient conduction; convection with internal or external flow; free convection in stationary fluids; boiling and condensation; thermal resistance networks; heat exchangers; radiation heat transfer.  

**Prerequisites:** ENB222 and ENB321  

**Equivalents:** MMB351  

**Credit points:** 12  

**Contact hours:** 4 per week  

**Campus:** Gardens Point  

**Teaching period:** 2013 SEM-1  

**ENB422 ENERGY MANAGEMENT**  
Topics covered in this unit include: Global energy and climate issues, the systematic process by which energy use is monitored and analysed; individual treatment of electricity, fuels and their properties, compressed air, buildings, cycle requirements, energy recovery equipment; financial analysis of proposals. Environmental aspects will be considered for each topic.  

**Assumed knowledge:** ENB201 or ENB221 and ENB222 are assumed knowledge.  

**Equivalents:** MMB451  

**Credit points:** 12  

**Contact hours:** 3 per week  

**Campus:** Gardens Point  

**Teaching period:** 2013 SEM-2  

**ENB423 HEATING, VENTILATION AND AIR-CONDITIONING**  
Heating, Ventilation and Air Conditioning (HVAC) is closely related to human habitation, comfort and productivity. It also consumes considerable amount of energy. With increasing global warming, it is becoming one of the most important engineering systems in modern buildings.  

This unit will introduce you basic principles of HVAC and refrigeration systems. It will discuss the design factors and practices related to the design and operation of HVAC systems. It will also provide you with other relevant knowledge commonly used in the building services industry. This course should therefore provide you a good basis to undertake further study, research and professional work in this field.  

**Prerequisites:** ENB201 or ENB221 or ENB222  

**Credit points:** 12  

**Contact hours:** 3 per week  

**Campus:** Gardens Point  

**Teaching period:** 2013 SEM-1  

**ENB435 COMPUTER INTEGRATED MANUFACTURING**  
Topics covered in this unit include: introduction of the design and evaluation tool for manufacturing systems. It will also provide you with other relevant knowledge.  

This unit is of great assistance to graduates who will work in one of the many industry where Mechanical Engineers are concerned with Plant and Process Design. These industries use heat exchangers, piping systems and cooling towers intensively. This would include power stations, mineral processing, sugar/processing and refinery/chemical industries. The unit is taught by university and industry specialists who have considerable experience in their chosen field.  

**Credit points:** 12  

**Contact hours:** 4 per week  

**Campus:** Gardens Point  

**Teaching period:** 2013 SEM-2  

**ENB443 PLANT AND PROCESS DESIGN**  
The unit is of great assistance to graduates who will work in one of the many industry where Mechanical Engineers are concerned with Plant and Process Design. These industries use heat exchangers, piping systems and cooling towers intensively. This would include power stations, mineral processing, sugar/processing and refinery/chemical industries. The unit is taught by university and industry specialists who have considerable experience in their chosen field.  

**Credit points:** 12  

**Contact hours:** 4 per week  

**Campus:** Gardens Point  

**Teaching period:** 2013 SEM-2  

**ENB434 TRIBOLOGY**  
Tribology is the study of friction, wear and lubrication. In this unit, the knowledge you acquire is applied to solve problems prevalent in engineering. Topics covered range from the theory of friction, lubricant properties and chemistry, to the control of friction and wear by proper selection of both materials and lubricants.  

**Prerequisites:** ENB201 or ENB221  

**Credit points:** 12  

**Contact hours:** 4 per week  

**Campus:** Gardens Point  

**Teaching period:** 2013 SEM-2  

**ENB434 TRIBOLOGY**  
Tribology is the study of friction, wear and lubrication. In this unit, the knowledge you acquire is applied to solve problems prevalent in engineering. Topics covered range from the theory of friction, lubricant properties and chemistry, to the control of friction and wear by proper selection of both materials and lubricants.  

**Prerequisites:** ENB201 or ENB221  

**Credit points:** 12  

**Contact hours:** 4 per week  

**Campus:** Gardens Point  

**Teaching period:** 2013 SEM-2  

**ENB441 APPLIED IMAGE PROCESSING**  
The aim of this unit is to introduce the fundamentals and applications of image processing to the students. The unit covers topics such as image acquisition, image representation, image enhancement, image segmentation, and image filtering. These topics will be introduced using a project based approach with applications to engineering practical problems.  

**Prerequisites:** ENB342  

**Credit points:** 12  

**Contact hours:** 4 per week  

**Campus:** Gardens Point  

**Teaching period:** 2013 SEM-2
ENB448 SIGNAL PROCESSING AND FILTERING
This unit gives a comprehensive introduction to the representation and processing of signals distorted or corrupted by noise, and the systems needed to process them. Techniques to enhance, detect, classify and estimate useful information from the signals in the presence of noise and other distortions will be presented. The methods presented will be tested on real signals drawn from different engineering applications, such as speech signals, image signals, biomedical signals and signals in communications systems.

Prerequisites: ENB375 or ENB311
Credit points: 12
Teaching period: 2013 SEM-2

ENB475 FOUNDATIONS OF ENGINEERING MATHEMATICS
This unit introduces you to the fundamental mathematical ideas of function, calculus, vectors and matrices, through the use of contextualised engineering related problems. In solving these problems you will develop both an understanding of the mathematical concepts and competency in appropriate solution methods.

Prerequisites: MAN120
Assumed knowledge: Grade of at least Sound Achievement in Senior Mathematics B (or equivalent) or MAB105 is assumed knowledge
Credit points: 12
Teaching period: 2013 SEM-1

KIB103 INTRODUCTION TO WEB DESIGN AND DEVELOPMENT
This unit provides an introduction to theories and skills underpinning the application of multimedia technology with the Creative Industries, providing a foundation of conceptual and practical skills related to contemporary modes of electronic hypermedia production, communication and publishing.

Antirequisites: INB271, KIP403
Equivalents: KIB807, KKB007, KKB818
Credit points: 12
Teaching period: 2013 SUM

MAB125 FOUNDATIONS OF ENGINEERING MATHEMATICS
This unit introduces you to the fundamental mathematical ideas of function, calculus, vectors and matrices, through the use of contextualised engineering related problems. In solving these problems you will develop both an understanding of the mathematical concepts and competency in appropriate solution methods.

Prerequisites: MAN120
Assumed knowledge: Grade of at least Sound Achievement in Senior Mathematics B (or equivalent) or MAB105 is assumed knowledge
Credit points: 12
Teaching period: 2013 SEM-1, 2013 SEM-2 and 2013 SUM
MAB127 MATHEMATICS FOR ENGINEERING 2
Building upon the foundations established in MAB125 or Senior Maths C, this unit addresses the significant role of mathematical modelling using vectors, matrices and multivariable calculus for the description and resolution of simple and complex problems relevant to the discipline of engineering. The formulation and solution of such problems is supported by appropriate advanced mathematical concepts used for function approximation, differentiation and integration. You will complete this unit in first year or first semester of second year depending on your initial maths background. Undertaking this unit will allow you to develop your problem solving skills, especially in the context of mathematical techniques related multivariable functions, vectors and matrices used to model engineering relevant problems.

Assumed knowledge: Grade of at least Sound Achievement in Senior Mathematics C (or equivalent) or MAB125 or MAB120 or MAB131 or MAB182 is assumed knowledge. Equivalents: MAB112, MAB122, MAB132.
Credit points: 12 Contact hours: 4 per week Campus: Gardens Point Teaching period: 2013 SEM-1, 2013 SEM-2 and 2013 SUM

MAB210 PROBABILITY AND STOCHASTIC MODELLING 1
This unit is intended for all mathematics degree students, all double degree students with mathematics, secondary education students with mathematics as a teaching area, and quantitatively-oriented students in other courses, particularly in Science, Information Technology, Engineering and areas of Business. The unit will provide you with fundamental skills and operational knowledge for all further study in statistics, and highly relevant foundations for other areas of mathematics such as mathematical modelling and operations research. The unit will also help you develop fundamental problem-solving skills in statistics and mathematics.

Prerequisites: MAB121 or MAB122. MAB121 or MAB122 can be studied in the same teaching period as MAB210.
Antirequisites: MAN210 Credit points: 12 Contact hours: 4 per week Campus: Gardens Point Teaching period: 2013 SEM-1 and 2013 SEM-2

MAB233 ENGINEERING MATHEMATICS 3
This unit will provide you with the foundation knowledge and skills to carry out a statistical data investigation including defining the problem, planning the investigation, collecting and analysing data, and reporting conclusions in context. It will also provide you with foundation knowledge and concepts of probability, random variables and distributions for further learning in engineering.

Prerequisites: MAB131 or MAB182 or MAB121 or MAB126 or MAB127 Antirequisites: BSB123, MAN101 Credit points: 12 Contact hours: 4 per week Campus: Gardens Point Teaching period: 2013 SEM-1 and 2013 SEM-2

MAB314 PROBABILITY AND STOCHASTIC 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; queueing 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: MAB122 and MAB210 Credit points: 12 Contact hours: 4 per week Campus: Gardens Point Teaching period: 2013 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: 2013 SEM-1

MAB536 TIME SERIES ANALYSIS 1
Data in business, economics, engineering and the natural sciences often occur in the form of time series. Time Series Analysis provides models and methods for the analysis of such series of correlated observations. The ability to forecast optimally, to understand causal relationships between variables, and to analyse dynamic systems is of great practical importance. For example, optimal sales forecasts are needed for business planning, transfer function models are needed for improving the design and control of a process plant, and vector time series models are used to represent the relationships and interactions of macroeconomic variables in an economy. This unit is concerned with the building of time series models and the use of such models for practical applications such as optimal forecasting, simulation, causality analysis, and analysis of dynamic systems.

Prerequisites: MAB314 and MAB414 Antirequisites: MAN536, MAB526 Credit points: 12 Contact hours: 4 per week Campus: Gardens Point Teaching period: 2013 SEM-2

MGB225 INTERCULTURAL COMMUNICATION AND NEGOTIATION SKILLS
The course develops students’ abilities to identify and resolve problems in cross-cultural communication or negotiation situations where cultural differences have created misunderstandings or undesirable or unexpected outcomes. It first explores the concept of ‘national culture’ by considering the work of major theorists of cultural value dimensions - from Hall to Schwartz. Students are encouraged to analyse communication/negotiation process issues in terms of these value dimensions and to practise managing the process of communication/negotiation to improve their outcomes.

Prerequisites: BSB115, CTB115, BSB119 or BSB124
Antirequisites: MGB312
Equivalents: IBB205, MGX225
Credit points: 12
Contact hours: 3
Campus: Gardens Point and Caboolture
Teaching period: 2013 SEM-1 and 2013 SEM-2

PYB110 PSYCHOLOGICAL RESEARCH METHODS
This unit includes the following: an overview of the purposes and strategies of research; elementary research design; operationalising variables; descriptive statistics; distributions; measures of central tendency and spread; standard scores and percentiles; understanding relationships between variables through correlation and regression; an introduction to hypothesis-testing procedures using t-tests.

NOTE for Summer 2010 students:
Teaching will not commence until January 2011.
Students should set aside the full 2 weeks + 1 day for the unit. Final exam will be on Friday 28 January.

Credit points: 12
Contact hours: 3 per week
Campus: Kelvin Grove
Teaching period: 2013 SUM-2 and 2013 SEM-2

UDB101 STEWARDSHIP OF LAND
This interdisciplinary unit will introduce students to the characteristics of land and land tenure with a focus on land use and property rights. The particular issues of native title, land contamination, heritage and alternative utility will be covered. Thereafter the property development process will be described in general terms and emphasis placed on the impact of environmental and social factors on the financial evaluation. The final component will cover the management of land, both urban and regional. Case studies will demonstrate the part that each discipline plays in the stewardship of land and its development.

Equivalents: CNB105
Credit points: 12
Contact hours: 3 per week
Campus: Gardens Point
Teaching period: 2013 SEM-1

UDB102 APPLIED LAW
Introduces the fundamental principles and practices of Australian governance as they affect the built environment professions. The relevance of government policies, laws and regulations and aspects of Tort, Contract and Land and Environmental laws applicable to the Development and Construction processes are examined in context.

Credit points: 12
Contact hours: 3 per week
Campus: Gardens Point
Teaching period: 2013 SEM-2

UDB104 URBAN DEVELOPMENT ECONOMICS
This unit will introduce microeconomic and macroeconomics concepts applied to urban and regional development. The unit will initially focus on demand, supply and determination of prices, and other important microeconomic concepts, at the level of an individual development. Here, the value of microeconomics in explaining aspects of development is demonstrated using local and national examples. In doing so, this unit will also help to deepen the appreciation of the key steps in development and the role of the main actors. Since anyone development project does not occur in a vacuum, the unit will then broaden to consider the impact of changes in the national and local economy on land use and development, including business cycle, monetary and fiscal policy.

Equivalents: BSB113, BSD113
Credit points: 12
Contact hours: 4 per week
Campus: Gardens Point
Teaching period: 2013 SEM-2

UDB110 RESIDENTIAL CONSTRUCTION AND ENGINEERING
You learn to read plans and build a house by studying construction theory and legislation, visiting building sites, and sketching construction details. Focus on the four traditional methods of construction, brick veneer, cavity brick, block and timber, evolution of building, Building Code of Australia and Australian Standards; methods of construction; foundation and footings; linings; claddings; windows; doors; joinery; staircases; roof coverings; balanced cut and fill; services; retaining walls; acoustic and fire safety requirements; specifications for residential construction; protection to the public during construction; temporary support and demolition of structures; energy efficiency design; building defects and failures.

Credit points: 12
Contact hours: 4 per week
Campus: Gardens Point
Teaching period: 2013 SEM-1

UDB111 ENGINEERING CONSTRUCTION MATERIALS
The choice of material and the reliance on the material being “fit for purpose” is essential to the success of the building project. This unit provides you with an introduction to building materials. We will cover the structural and non structural materials used in the construction process and focus on the basic properties, construction applications, behaviour, strength, durability, suitability, and limitations.
Equivalents: CNB102  Credit points: 12  Contact hours: 4 per week  Campus: Gardens Point  Teaching period: 2013 SEM-1

UDB112 PROFESSIONAL STUDIES 1
Assignment-based project orientated group work where you design and document a new dwelling preparing a full design of a single level brick-veneer type dwelling to a standard appropriate for building approval including architectural and structural design; construction materials; building services; statutory obligations and the building approval process; measuring and cost planning; contract administration; construction planning and site layout.

Prerequisites: UDB110  Equivalents: CNB109  Credit points: 12  Contact hours: 5 per week  Campus: Gardens Point  Teaching period: 2013 SEM-1

UDB113 MEASUREMENT 1
This unit introduces the scope of the role of the quantity surveyor working independently and for contractors. It examines the tendering process and the bill of quantities; the Australian standard method of measurement (rules, taking-off methodology, mensuration and formulae); measurement of various work sections (finishes, roofing, partitions, woodworking, metalwork, painting, doors, windows, glazing, hardware, suspended ceilings and masonry).

Prerequisites: UDB110  Equivalents: CNB110  Credit points: 12  Contact hours: 4 per week  Campus: Gardens Point  Teaching period: 2013 SEM-1

UDB140 PROPERTY VALUATION 1
This unit provides an introduction to property valuation fundamentals including value principles and concepts, market data and the methods of valuation, with particular focus on the valuation of residential property.

Equivalents: CNB194  Credit points: 12  Contact hours: 4 per week  Campus: Gardens Point  Teaching period: 2013 SEM-1 and 2013 SEM-2

UDB161 INTRODUCTION TO PLANNING AND DESIGN
This unit introduces students to basic principles of planning and urban design. Students learn about urban design principles such as legibility, permeability, robustness and imageability of places. Students also investigate the planning issues facing cities and consider the complex problem-solving skills required to respond to these.

Credit points: 12  Contact hours: 3 per week  Campus: Gardens Point  Teaching period: 2013 SEM-1

UDB162 HISTORY OF BUILT ENVIRONMENT
This unit uses examples from the global development of human settlement to demonstrate the importance of interactions between the environment, society, and technology in shaping the built environment. Students will gain an appreciation of the important role played by history in forming the context for contemporary society, policy making, and design.

Credit points: 12  Contact hours: 3 per week  Campus: Gardens Point  Teaching period: 2013 SEM-1

UDB163 LAND USE PLANNING
The purpose of this unit is to examine the planning and management of public and private land. Unit topics include: different performance and prescriptive zoning methods; an overview of levels of planning agencies responsible for land use planning in Queensland; and the land development process and regulations that govern land use planning.

Credit points: 12  Contact hours: 3 per week  Campus: Gardens Point  Teaching period: 2013 SEM-2

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: 2013 SEM-2

UDB181 GEOSPATIAL POSITIONING AND GPS
This unit will introduce students to skills and knowledge of spatial referencing, site measurement; use of maps and air photos. It will include introduction to map projections; concepts and theory of Global Positioning Systems; introduction to global and local coordinate systems; mission planning and data collection. The unit will highlight the importance of geospatial positioning applications in society.

Credit points: 12  Contact hours: 3 per week  Campus: Gardens Point  Teaching period: 2013 SEM-1

UDB182 SURVEYING
This unit provides a foundation in field instrumentation and survey computations; a framework for acquisition of a high level of knowledge and practical competence in plane survey computations; use of optical and electronic theodolites; EDM and total electronic station systems, and a focus on collection/presentation of pre-design contour and detail spatial information.

Equivalents: PSB640  Credit points: 12  Contact hours: 5 per week  Campus: Gardens Point  Teaching period: 2013 SEM-2

UDB202 BUSINESS SKILLS
This unit focuses on career preparation with a business orientation. Current popular business tools are assembled and critiqued. A sequential approach is used starting with characteristics of the Resume, business protocol and ethics, the business plan, assessing business risk and Professional
UDB210 COMMERCIAL CONSTRUCTION AND ENGINEERING
The aim of this unit is to provide you with extensive theoretical knowledge to manage and supervise the construction of (1) low rise residential apartment buildings (2) commercial buildings i.e. shops, offices; and (3) industrial buildings. Focus on legislative requirements; on-site inspections; site management techniques; temporary works & construction plant requirements, labour; In-ground construction; External treatments (cladding); formwork; bracing and stability; services co-ordination; Landscaping; Environmental, building defects,. disabled access; universal design; load-bearing masonry; services co-ordination; internal fit-out; tilt panel construction; portal/steel frames.

Prerequisites: UDB110  Equivalents: CNB107  Credit points: 12  Contact hours: 4 per week  Campus: Gardens Point  Teaching period: 2013 SEM-1

UDB213 CONSTRUCTION ESTIMATING
Estimating techniques to quantify cost; Fundamental elements of cost and methods of evaluating labour, materials and equipment to realistic levels of accuracy; Unit rate approach to assessing the base estimate for major trades; Assessment of offers from sub-contractors and implications for tendering with respect to risk, quality and ethical responsibilities; Functional estimating and the significance of method, time and assembly of information to estimating; Review of an estimate, determination of profit; letters of offer; Subsequent negotiations prior to award of a contract; application of estimating to variations and profit monitoring; Linking best value procurement assessment to outcome performance indicators (including tender evaluation criteria).

Prerequisites: UDB110, UDB113  Equivalents: CNB305  Credit points: 12  Contact hours: 3 per week  Campus: Gardens Point  Teaching period: 2013 SEM-1

UDB214 PROFESSIONAL STUDIES 2
Assignment-based project orientated group work where you design and document a commercial development from a project management perspective considering constructability drawing on your skills in estimating; planning; scheduling; site organisation; environmental planning & sustainable urban development. Focus on special construction techniques; reuse of buildings and building materials; durability of materials, minimisation and disposal of construction waste; construction practice; planning and use of appropriate forms of construction for various building sizes and types; community negotiations; statutory responsibilities including access for people with a disability.

Prerequisites: UDB112 or BEB200 or ENB200  Assumed knowledge: UDB210 is assumed knowledge.  Equivalents: CNB228  Credit points: 12  Contact hours: 3 per week  Campus: Gardens Point  Teaching period: 2013 SEM-2

UDB216 THE ENVIRONMENT AND THE QUANTITY SURVEYOR
This unit will involve professional quantity surveying including image and status, fees, codes of ethics, professional competence and continuing professional development. In terms of employment, professional engagement in the workplace will be covered including terms of engagement, professional indemnity insurance, quality assurance and financial asset management. The work of quantity surveying takes place within a social and environmental context and this relates to the interactions between business and environmental interests including the natural environment, environment economics and ecologically sustainable development.

Prerequisites: CNB209  Credit points: 12  Contact hours: 3 per week  Campus: Gardens Point  Teaching period: 2013 SEM-1

UDB240 PLANNING THEORY AND PROCESSES
This unit is an introduction to the fundamental principles of urban planning control and regulation in Queensland. Property economists need to be aware of the history, development and current impact of planning regulation on property development and investment. This unit covers current development planning approval, assessments, conditions and appeals processes. Integration of economics, equity and social responsibility which include conservation and heritage protection and its impact on development and land are also discussed.

Antirequisites: UDB110  Credit points: 12  Contact hours: 3 per week  Campus: Gardens Point  Teaching period: 2013 SEM-1

UDB241 PROPERTY LAW 1
A practicing property professional requires an understanding of real property law in order to optimise the utility of property assets and therefore the value of property assets. This unit covers aspects of real property law which impact on professional property practice in Queensland.

Assumed knowledge: UDB102 is assumed knowledge.  Equivalents: CNB191  Credit points: 12  Contact hours: 3 per week  Campus: Gardens Point  Teaching period: 2013 SEM-1

UDB242 PROPERTY VALUATION 2
An understanding of valuation methodologies relating to commercial property assessment is central to the work of
any property professional. This unit develops an understanding of the various methodologies and the application of these valuation methodologies to practical scenarios. This unit also further develops an understanding of the various market sectors and how the market impacts on the value of a property asset.

**Prerequisites:** UDB140   **Equivalents:** CNB292   **Credit points:** 12   **Contact hours:** 3 per week   **Campus:** Gardens Point   **Teaching period:** 2013 SEM-1

**UDB243 PROPERTY ECONOMICS**

The unit will relate macro and micro economics to the broad property markets. It will consider the practical impact of supply and demand factors on the different market sectors. The nature and complexities of property cycles are covered with specific reference to commercial and industrial property in Australia.

**Prerequisites:** UDB104   **Credit points:** 12   **Contact hours:** 4 per week   **Campus:** Gardens Point   **Teaching period:** 2013 SEM-1

**UDB245 URBAN LAND STUDIES**

The aim of the unit is to take the students' fundamental knowledge of economic theory developed in earlier units and to apply that knowledge to the specific area of urban development. In particular we seek to develop in students an awareness of those economic imperatives which drive and shape urban form.

**Prerequisites:** UDB243   **Equivalents:** CNB291   **Credit points:** 12   **Contact hours:** 4 per week   **Campus:** Gardens Point   **Teaching period:** 2013 SEM-2

**UDB246 PROPERTY FEASIBILITY STUDIES**

Property economists play an important role in advising on the investment worth of property. As such the unit introduces students to assessment of property as an investment asset taking into account financing and taxation arrangements in addition to risk and return measures.

**Prerequisites:** UDB242   **Equivalents:** CNB392   **Credit points:** 12   **Contact hours:** 3 per week   **Campus:** Gardens Point   **Teaching period:** 2013 SEM-2

**UDB247 PROPERTY VALUATION 3**

It is part of the role of a Property Valuer to perform valuations for statutory purposes and to represent those valuations in the capacity of an expert witness. It is imperative that you have the necessary knowledge to undertake statutory valuations and have an understanding of the role of a Valuer as an expert witness. This unit will enhance the knowledge and skills you have developed in prior valuation units and apply this in the statutory and special use property valuation context.

**Prerequisites:** UDB241 and UDB242   **Equivalents:** CNB391   **Credit points:** 12   **Contact hours:** 3 per week   **Campus:** Gardens Point   **Teaching period:** 2013 SEM-2

**UDB266 PLANNING PROCESSES AND CONSULTATIONS**

Students learn how land uses are generated and can be planned. They study the logic, role and methods of successive stages of planning processes including aims, information analysis and synthesis, evaluation, strategy development, monitoring and review. They learn how to consult widely in the community and with other professionals to develop and apply flexible and widely relevant planning processes.

**Prerequisites:** (UDB163 and UDB164) or ENB274 or DE40MJR-LNDARCH - Landscape Architecture Major   **Equivalents:** PSB433   **Credit points:** 12   **Contact hours:** 3 per week   **Campus:** Gardens Point   **Teaching period:** 2013 SEM-1

**UDB267 DEVELOPMENT ASSESSMENT AND INFRASTRUCTURE**

The aim of this unit is to provide students with a grounding in the issues and skills related to the assessment of development applications and planning related to infrastructure. The unit will be conducted in two sections. The first will introduce students to the relevant legislation, procedures, and techniques associated with development assessment. The second will give students an understanding of issues related to the provision and maintenance of technical and social infrastructure, with particular reference to the importance of sustainability and the emergence of new technology and systems.

**Prerequisites:** UDB163 or DE40MJR-LANDARC - Landscape Architecture Major   **Equivalents:** PSB445   **Credit points:** 12   **Contact hours:** 3 per week   **Campus:** Gardens Point   **Teaching period:** 2013 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.

**Equivalents:** PSB631   **Credit points:** 12   **Contact hours:** 4 per week   **Campus:** Gardens Point   **Teaching period:** 2013 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.

**Equivalents:** PSB655   **Credit points:** 12
UDB302 DEVELOPMENT PROCESS
This unit brings together concepts gained on strategic evaluation, risk, time management, organisational behaviour, planning, construction and development feasibility analysis. It places this knowledge in a total project context and provides you with an understanding of the processes involved in property development from conception to completion and beyond.
**Credit points:** 12  
**Contact hours:** 4 per week  
**Campus:** Gardens Point  
**Teaching period:** 2013 SEM-2

UDB312 CONTRACT ADMINISTRATION
The administration of construction contracts represents one of the core applications for both construction managers and quantity surveyors. In order to appreciate some of the commercial implications of contract administration you will study administrative implications for both parties to the contract.
**Equivalents:** CNB302  
**Credit points:** 12  
**Contact hours:** 4 per week  
**Campus:** Gardens Point  
**Teaching period:** 2013 SEM-1

UDB313 PROGRAMMING AND SCHEDULING
This unit covers the following: Project time and resource planning techniques such as bar charts, critical path networks (precedence, time scales, and activity on arrows); Line of balance; Resource allocation and levelling; Schedule updates and progress control; Delays and claims analysis. Applications of computer-based project planning software will form an important part of the study in this unit.
**Equivalents:** CNB335  
**Credit points:** 12  
**Contact hours:** 4 per week  
**Campus:** Gardens Point  
**Teaching period:** 2013 SEM-1

UDB314 STATUTORY CONSTRUCTION LAW
Commercial Law. Sale of goods; Hire purchase; Trade practices; Negotiable instruments; Insurance law; Partnership law and company law; Bankruptcy and liquidation; Arbitration (the agreement, appointment of an arbitrator; Conduct of an arbitrator; Powers and duties; Enforcement of an award, costs; Alternative dispute resolution. Building Law; Study of the Building Code of Australia and Building Regulations, which control the design, construction of building works; emphasis on all building law; a study of the Acts Interpretation Act, Town Planning Acts; etc.
**Prerequisites:** UDB110, UDB210, UDB310, and UDB215  
**Equivalents:** CNB309  
**Credit points:** 12  
**Contact hours:** 3 per week  
**Campus:** Gardens Point  
**Teaching period:** 2013 SEM-2

UDB316 COST PLANNING AND CONTROL
Interrelationship between construction industry and economy; Fundamental principles of cost management (design and construction cost planning and cost control); Nature and purpose of cost planning and cost control systems; Contract costing (historical accounting) and anticipatory (forecast final cost / value); Design economics, cost and value concepts, cost information systems, cost modelling, cost analyses, cost indices, cost data, cost implications of design variables; Life cycle costing and modelling including design knowledge in virtual environments; Value management, including energy efficiency in buildings, and value alignment process for project delivery; Asset management and building maintenance; Risk management in cost planning and cost control.
**Equivalents:** CNB307  
**Credit points:** 12  
**Contact hours:** 4 per week  
**Campus:** Gardens Point  
**Teaching period:** 2013 SEM-2

UDB341 PROPERTY FINANCE
Property is a major asset class of available investment options. Due to its distinct characteristics, debt and equity financing plays a major role in investment decisions. As such, the unit develops students’ understanding of property investment and financing techniques and the place of property assets within the capital markets.
**Prerequisites:** UDB242  
**Assumed knowledge:** UDB246  
**Credit points:** 12  
**Contact hours:** 3 per week  
**Campus:** Gardens Point  
**Teaching period:** 2013 SEM-1

UDB344 PROPERTY AND ASSET MANAGEMENT
With an increasing number of companies and institutions now leasing property rather than direct ownership, the management of these assets is becoming a crucial aspect of business practice. This unit will cover the physical and financial aspects of commercial, retail and industrial property management and the role of property as a strategic real estate asset. The area of Corporate Real estate and Asset management will also be covered in the unit.
**Prerequisites:** UDB242  
**Assumed knowledge:** UDB244  
**Credit points:** 12  
**Contact hours:** 4 per week  
**Campus:** Gardens Point  
**Teaching period:** 2013 SEM-2

UDB368 URBAN DESIGN
This studio unit develops skills in urban design analysis and intervention through the transformation of urban design theory into policies and design proposals. Students are introduced to the production of urban design instruments (such as strategies and frameworks) and effective communication of desired urban design outcomes. Where possible, students participate in live projects, with inputs from industry, government and communities.
Prerequisites: UDB265 Assumed knowledge: Basic skills in WLMM, Illustrator, SketchUp, Site Analysis is assumed knowledge

Equivalents: PSB451 Credit points: 12 Contact hours: 3 per week Campus: Gardens Point Teaching period: 2013 SEM-1

UDB369 NEGOTIATION AND CONFLICT RESOLUTION
This unit introduces planning students to the theory and practice of negotiation and conflict resolution. The aim is that students will develop their ability to change their perspective on conflict by seeing it as an inevitable and sometimes valuable part of planning. Students will learn to develop empathy for those they are in conflict with while also communicating their own needs assertively. Content includes key principles of conflict resolution, and practical mediation/negotiation techniques.
Credit points: 12 Contact hours: 3 per week Campus: Gardens Point Teaching period: 2013 SEM-1

UDB370 ENVIRONMENTAL PLANNING AND MANAGEMENT
This unit introduces environmental planning and management issues, policies, and methods relevant to your future practice as a planner, engineer, designer, or other built environment professional. As part of a multi-disciplinary team, you will participate in investigation of a contemporary case study, engaging in creative problem-solving and synthetic thinking incorporating skills and knowledge from prior units framed within new perspectives. By the end of the unit, you will have a firm grasp on a range of current environmental planning and management issues, and a framework for assimilating and addressing environmental policy in your future practice.
Equivalents: PSB462 Credit points: 12 Contact hours: 3 per week Campus: Gardens Point Teaching period: 2013 SEM-2

UDB381 GEOSPATIAL MAPPING
This unit will provide the student with a sound knowledge and understanding of image mapping principles (including photogrammetry) and processes as well as practical skills and understanding required to collect spatial information and to produce fundamental mapping products. In addition, this unit will provide the skills and knowledge of the principles and characteristics of cartographic communication, surface modelling techniques and digital mapping.
Credit points: 12 Contact hours: 4 per week Campus: Gardens Point Teaching period: 2013 SEM-1

UDB387 SPATIAL AND LAND INFORMATION MANAGEMENT
This unit provides you with an understanding of the spatial data infrastructure that will increasingly underpin decision making in diverse areas of development including resource management; urban and rural planning; cadastral administration and facilities management. The unit will provide an introduction to the concepts of a spatial data system planning overview, system implementation, and standards, legal issues, and knowledge-based techniques.
Prerequisites: UDB281 Equivalents: PSB612 Credit points: 12 Contact hours: 4 per week Campus: Gardens Point Teaching period: 2013 SEM-1

UDB388 SPATIAL ANALYSIS PRACTICE
This unit expands a student’s knowledge in the field of spatial information science within the framework of a practical exercise focussing on advanced spatial analysis techniques. This approach facilitates exposure to and the incorporation of emerging processes of acquisition, validation, storage, extraction, analysis and presentation of spatial information. A geographic information system environment is utilised to provide a practical introduction to industry practices and client expectations. This unit will provide students with enhanced knowledge of the extent, theory and practice of spatial information science and an enhanced ability to define and solve problems associated with manipulation of spatial information systems to meet client expectations.
Prerequisites: UDB281 Equivalents: PSB654 Credit points: 12 Contact hours: 4 per week Campus: Gardens Point Teaching period: 2013 SEM-2

UDB471 URBAN PLANNING PRACTICE
Students develop skills of interpretation and problem solving to plan the development of a locality or suburb with a population of up to fifteen thousand. Consulting with local governments, communities and stakeholders, and working in supervised multi-disciplinary teams, they produce a real-world local area plans, integrating a wide range of housing, access, work, play, community, cultural and environmental concerns.
Prerequisites: UDB266 Credit points: 12 Contact hours: 3 per week Campus: Gardens Point Teaching period: 2013 SEM-1

UDB475 REGIONAL AND METROPOLITAN POLICY
Students learn to focus and apply material from a wide range of disciplines and locations to understand and develop current regional and metropolitan policy. Issues of global, national and state regionalism, demography, economics, human services, central place theory, regional resource evaluation and public administration are related to work in the Regional Planning Practice unit.
Credit points: 12 Contact hours: 3 per week Campus: Gardens Point Teaching period: 2013 SEM-2