Bachelor of Engineering (EN40)

Year offered: 2010
Admissions: Yes
CRICOS code: 056529D
Course duration (full-time): 4 years
Domestic fees (indicative): 2010: CSP $3,800 (indicative) per semester
International Fees (indicative): 2010: $12,000 (indicative) per semester
Domestic Entry: February and July
International Entry: February and July
QTAC code: 412502
Past rank cut-off: 79
Past OP cut-off: 11
OP Guarantee: Yes
Assumed knowledge: English (4, SA) and Maths B (4, SA)

Preparatory studies: For information on acquiring assumed knowledge visit http://www.studentservices.qut.edu.au/apply/ug/info/knowledge.jsp
Total credit points: 384
Standard credit points per full-time semester: 48

Course coordinator: Dr R. Mahalinga-Iyer
Campus: Gardens Point

Majors
- Bachelor of Engineering (Infomechatronics)
- Bachelor of Engineering (Civil)
- Bachelor of Engineering (Civil and Environmental)
- Bachelor of Engineering (Computer Systems)
- Bachelor of Engineering (Software Engineering)
- Bachelor of Engineering (Telecommunications)
- Bachelor of Engineering (Medical)
- Bachelor of Engineering (Civil and Construction)
- Bachelor of Engineering (Electrical)
- Bachelor of Engineering (Mechanical)
- Bachelor of Engineering (Aerospace Avionics)

Recommended Study
Chemistry, Maths C and Physics.

The QUT Entry Bonus Scheme applies to students completing Year 12 or equivalent in 2009 and applying for entry in 2010.

QUT will award two bonus QTAC ranks for students who successfully complete Engineering Technology, Maths C or LOTE (Language Other Than English) in secondary school and apply to start a Bachelor of Engineering at QUT in 2010.

Professional Recognition

Full professional accreditation from Engineers Australia has been given for all primary majors in this course. In addition, Software Engineering also has full professional accreditation with the Australian Computer Society.

Second Majors
Depending on your choice of primary major, you may have the opportunity to undertake a second major or two minors. A second major is an established set of eight units (96 credit points) in the same discipline. A minor is an established set of four units (48 credit points) in the same discipline or from anywhere in the University. You will select your primary major, second major and/or minors after the completion of your first year.

Special Course Requirements
A candidate for the degree of Bachelor of Engineering must obtain at least 60 days of industrial experience/practice in an engineering environment as approved by the course coordinator.

International Student Entry
International students must maintain an enrolment program that will allow them to complete their course within the specified timeframe of their eCoE (electronic Confirmation of Enrolment).

Further Information
Faculty of Built Environment and Engineering - Phone +61 7 3138 1433, Fax +61 7 3138 5280, email: bee.enquiries@qut.com

Year 1 - February entry 2010 (common for all Engineering majors)

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Year 1 - Semester 2

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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: 2010 SEM-1 and 2010 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.
Equivalents: PCB150 Credit points: 12 Contact hours: 4 per week Campus: Gardens Point Teaching period: 2010 SEM-2

UNIT SYNOPSISES

ENB100 INTRODUCING PROFESSIONAL LEARNING
This unit will introduce students to a range of skills and knowledge sets required to support professional practice in engineering disciplines. It will include information literacy and communication skills and knowledge development. In addition, the unit will provide orientation to engineering professions through an introduction to their history, their place in society, the importance of ethical conduct to their practice and to the particular qualities of professional knowledge especially with regard to practice knowledge. The importance of integrated scholarship and collaborative links with other professions will be highlighted.
Antirequisites: DEB100 and UDB100 Credit points: 12 Campus: Gardens Point

ENB110 ENGINEERING STATICS AND MATERIALS
Credit points: 12 Contact hours: 4 per week Campus: Gardens Point Teaching period: 2010 SEM-1 and 2010 SEM-2

ENB150 INTRODUCING ENGINEERING DESIGN
Assumed knowledge: ENB110 is assumed knowledge. Credit points: 12 Contact hours: 4 per week Campus: Gardens Point Teaching period: 2010 SEM-2

ENB200 INTRODUCING SUSTAINABILITY
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

MAB125 FOUNDATIONS OF ENGINEERING MATHEMATICS
This unit introduces and reviews the elementary concepts of function, calculus, matrices and vectors with special reference to engineering related problems where
appropriate. Topics covered include the algebra of complex numbers, elementary functions and their properties, differentiation and integration methods and principles, geometric and algebraic applications of vectors and the solution of linear systems using matrices.

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

**Equivalents:** MAB100, MAB120, MAB180

**Credit points:** 12

**Contact hours:** 4 per week

**Campus:** Gardens Point

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

**MAB126 MATHEMATICS FOR ENGINEERING 1**

This unit extends the areas of function and calculus introduced in MAB125 by introducing series representations for functions and more advanced methods of differentiation and integration for functions of one variable. A strong connection to engineering related problems is made by introducing the use of differential equations in modelling, and exploring appropriate methods of solution, including the use of Fourier series and Laplace Transform methods. Practical calculations of volumes and surface areas of solids of revolution extend your interpretations of the definite integral. Taylor and Fourier series are introduced as a means of approximating functions by sums of polynomials and periodic functions.

**Assumed knowledge:** Grade of at least Sound Achievement in Senior Mathematics C (or equivalent) or MAB125 or MAB180 or MAB120 is assumed knowledge

**Equivalents:** MAB111, MAB121, MAB131, MAB182

**Credit points:** 12

**Contact hours:** 4 per week

**Campus:** Gardens Point

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

**MAB127 MATHEMATICS FOR ENGINEERING 2**

This unit extends the areas of function, calculus, matrices and vectors introduced in MAB125 by introducing functions of more than one variable, partial derivatives and multiple integrals, vector valued functions, and matrix methods for the solution of systems of ordinary differential equations. Each of these topics is realised by contextualised engineering related 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:** 2010 SEM-1, 2010 SEM-2 and 2010 SUM