

2009 Course Summary Sheet

■ Bachelor of Engineering (Electrical)/Bachelor of Mathematics (IF21)

- Program for students with Sound Achievement in Senior Maths B and Senior Maths C (page 1-2)
- Program for students with Sound Achievement in Senior Maths B only (page 3-4)

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

Abbreviated Title: BE(Elec)/BMaths or BE(Elec&CompEng)/BMaths

Location: Gardens Point Campus

Course Duration: 5 years full-time

Total Credit Points: 480

Standard Credit Points/Full-time Semester: 48

Course Coordinators:

Engineering: Dr R. Mahalinga-Iyer; Email bee.enquiries@qut.com; Phone 3138 1433

Mathematics: Professor Helen Macgillivray, Email: h.macgillivray@qut.edu.au; Phone 3138 2337; Room 0506 Gardens Point

Professional Recognition:

This degree meets the requirements for membership of Engineers Australia, the Institution of Radio and Electronics Engineers, and the coursework requirements for accredited graduate membership of the Australian Mathematical Society (GAustMS).

Special Course Requirements:

For students who commenced prior to 2006:

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

Full details of industrial experience requirements can be accessed via the website at

<http://www.bee.qut.edu.au/study/current/industrial/>

For students who commenced 2006 onwards:

A candidate for the degree of Bachelor of Engineering must obtain at least 60 days of approved industrial experience/practice in an engineering environment as part of BEB701 Work Integrated Learning in Year 5 (to be implemented in 2010).

Full details of the WIL requirements can be accessed through the 'Work Integrated Learning (WIL)' Community Blackboard site [click on the 'QUT Blackboard' homepage under 'Quicklinks' and then select 'Work Integrated Learning (WIL)' from your 'My Communities' section.]

All students will be required to complete a Safety Induction program, further information will be provided at orientation.

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

Important note: please ensure you record all unit details including unit codes and names, teaching period, credit points, class code and location code on your enrolment. All units in your course have a location code of GP and a class code of INT.

For students with four semesters of both Senior Mathematics B and Senior Mathematics C (or equivalent) with an exit assessment of at least Sound Achievement in both subjects.

Year 1, Semester 1		Prerequisites	Credit Points	Contact Hrs/Wk
BEB100	Introducing Professional Learning	Nil	12	4
MAB111	Mathematical Sciences 1B	SA in Senior Maths C or MAB100	12	4
MAB112	Mathematical Sciences 1C	SA in Senior Maths C or MAB100, coreq MAB111	12	4
PCB136	Engineering Physics 1C	Nil	12	4

		Prerequisites	Credit Points	Contact Hrs/Wk
Year 1, Semester 2				
ENB101	Engineering Mechanics 1	Nil	12	4
ENB103	Electrical Engineering	MAB180/MAB131	12	4
MAB101	Statistical Data Analysis 1	SA in Senior Maths B	12	4
MAB220	Computational Mathematics 1	SA in Senior Maths B	12	4
Year 2, Semester 1				
ENB240	Introduction to Electronics	ENB103	12	4
ENB246	Engineering Problem Solving	ENB103	12	4
MAB210	Statistical Modelling 1	coreq MAB111, MAB112	12	4
MAB311	Multivariable Calculus	MAB111, MAB112	12	4
Year 2, Semester 2				
ENB243	Linear Circuits and Systems	MAB182/MAB132, ENB103	12	4
ENB244	Microprocessors and Digital Systems	ENB240, ENB246	12	4
MAB413	Differential Equations Mathematics elective (Level 2)	MAB311 or MAB312	12	4
Year 3, Semester 1				
ENB242	Introduction to Telecommunications	MAB182/MAB132	12	3
ENB350	Real-time Computer-based Systems	ENB244	12	4
MAB312	Linear Algebra	MAB111, MAB112	12	4
MAB314	Statistical Modelling 2	MAB112, MAB210	12	4
Year 3, Semester 2				
ENB245	Introduction to Design and Professional Practice	ENB240, ENB246 (or ITB001)	12	4
ENB352	Communication Environments for Embedded Systems	ENB350	12	4
MAB414	Applied Statistics 2 Mathematics elective (Level 2)	MAB101, MAB111	12	12
Year 4, Semester 1				
ENB301	Instrumentation and Control	ENB105 or ENB243, MAB182/MAB132	12	5
ENB340	Power Systems and Machines	ENB103, MAB180/MAB131	12	4
ENB342	Signals, Systems & Transforms Mathematics elective (Level 3)	ENB242, ENB243, ENB246	12	4
Year 4, Semester 2				
ENB345	Advanced Design & Professional Practice	ENB245	12	4
ENB346	Digital Communications	ENB342, MAB233	12	4
ENB458	Modern Control Systems Mathematics elective (Level 3)	ENB301	12	4
Year 5, Semester 1				
EEB889-1	Project		12	1
	Electrical Engineering elective		12	
	Electrical Engineering elective		12	
	Mathematics elective (Level 3)		12	
Year 5, Semester 2				
EEB889-2	Project		12	1
	Electrical Engineering elective		12	
	Electrical Engineering elective		12	
	Mathematics elective (Level 3)		12	

For students with four semesters of Senior Mathematics B (or equivalent) only with an exit assessment of at least Sound Achievement.

		Prerequisites	Credit Points	Contact Hrs/Wk
Year 1, Semester 1				
BEB100	Introducing Professional Learning	Nil	12	4
MAB100	Mathematical Sciences 1A	SA in Senior Maths B or MAB105	12	4
MAB101	Statistical Data Analysis 1	SA in Senior Maths B	12	4
PCB136	Engineering Physics 1C	Nil	12	4
Year 1, Semester 2				
ENB101	Engineering Mechanics 1	Nil	12	4
ENB103	Electrical Engineering	MAB180/MAB131	12	4
MAB111	Mathematical Sciences 1B	SA in Senior Maths C or MAB100	12	4
MAB112	Mathematical Sciences 1C	SA in Senior Maths C or MAB100, coreq MAB111	12	4
Year 2, Semester 1				
ENB240	Introduction to Electronics	ENB103	12	4
ENB246	Engineering Problem Solving	ENB103	12	4
MAB220	Computational Mathematics 1	SA in Senior Maths B	12	4
MAB311	Multivariable Calculus	MAB111, MAB112	12	4
Year 2, Semester 2				
ENB243	Linear Circuits and Systems	MAB182/MAB132, ENB103	12	4
ENB244	Microprocessors and Digital Systems	ENB240, ENB246	12	4
MAB210	Statistical Modelling 1	SA in Senior Maths B	12	4
MAB413	Differential Equations	MAB311 or MAB312	12	4
Year 3, Semester 1				
ENB242	Introduction to Telecommunications	MAB182/MAB132	12	3
ENB350	Real-time Computer-based Systems	ENB244	12	4
MAB312	Linear Algebra	MAB111, MAB112	12	4
MAB314	Statistical Modelling 2	MAB112, MAB210	12	4
Year 3, Semester 2				
ENB245	Introduction to Design and Professional Practice	ENB240, ENB246 (or ITB001)	12	4
ENB352	Communication Environments for Embedded Systems	ENB350	12	4
MAB414	Applied Statistics 2 Mathematics elective (Level 2)	MAB101, MAB111	12 12	4
Year 4, Semester 1				
ENB301	Instrumentation and Control	ENB105 or ENB243, MAB182/MAB132	12	5
ENB340	Power Systems and Machines	ENB103, MAB180/MAB131	12	4
ENB342	Signals, Systems & Transforms Mathematics elective (Level 3)	ENB242, ENB243, ENB246	12 12	4
Year 4, Semester 2				
ENB345	Advanced Design & Professional Practice	ENB245	12	4
ENB346	Digital Communications	ENB342, MAB233	12	4
ENB458	Modern Control Systems Mathematics elective (Level 3)	ENB301	12 12	4

		Prerequisites	Credit Points	Contact Hrs/Wk
Year 5, Semester 1				
EEB889-1	Project		12	1
	Electrical Engineering elective		12	
	Electrical Engineering elective		12	
	Mathematics elective (Level 3)		12	
Year 5, Semester 2				
EEB889-2	Project		12	1
	Electrical Engineering elective		12	
	Electrical Engineering elective		12	
	Mathematics elective (Level 3)		12	

Electrical Engineering Elective Units

		Prerequisites	Semester Offered
ENB343	Field Transmission and Propagation	ENB240, MAB182/MAB132	1
ENB350	Real-time Computer Based Systems	ENB244	1
ENB440	RF & Applied Electromagnetics	ENB343	1
ENB454	Power Systems Management	ENB340	1
ENB455	Power Electronics	ENB344	1
ENB456	Energy	ENB103, MAB131/180	1
ENB241	Software Systems Design	ENB246	2
ENB344	Industrial Electronics	ENB244	2
ENB446	Wireless Communications	ENB346	2
ENB448	Signal Processing and Filtering	ENB342, MAB233	2
ENB452	Advanced Power Systems Analysis	ENB301, ENB340	2

Not all electives may be offered. At the discretion of the Course Coordinator, students may be allowed to select an elective from any advanced topics offered by the University. Also potential honours students may, with the approval of the Course Coordinator, select an elective from the postgraduate degree courses offered by the School of Engineering Systems.

Mathematics Electives

		Prerequisites	Semester Offered
Level 2			
MAB313	Mathematics of Finance	MAB100 or Senior Maths C, coreq MAB111	2
MAB420	Computational Mathematics 2	MAB220, MAB312	2
MAB422	Mathematical Modelling	MAB111, MAB112	2
MAB461	Discrete Mathematics	MAB112	2
MAB480	Introduction to Scientific Computation	MAB112, recommended MAB210 or MAB220	2
Level 3			
Four units required			
MAB521	Applied Mathematics 3	MAB311	1
MAB522	Computational Mathematics 3	MAB311, MAB420	1
MAB524	Statistical Inference	MAB314	2
MAB533	Statistical Techniques	MAB210, MAB414	1
MAB536	Time Series Analysis	MAB101 or MAB233, MAB314	1
MAB613	Partial Differential Equations	MAB311, MAB413	2
MAB623	Financial Mathematics	MAB311, MAB313	2
MAB624	Applied Statistics 3	MAB314, MAB414	2
MAB672	Advanced Mathematical Modelling	MAB312, MAB422, recommended MAB413	1

Note: Some deviations from the above course structure may be possible with the permission of the Course Coordinator. This is more likely to apply in the later years than the earlier years of the course.