B-ENG Mechanical Engineering stream

Year and Campus:	2014
Coordinator:	Associate Professor Peter Lee
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Overview:	**THE COURSE STRUCTURE BELOW ONLY APPLIES TO RE-ENROLLING STUDENTS WHO COMMENCED THEIR STUDIES PRIOR TO 2010.**
Learning Outcomes:	See Bachelor of Engineering (B-ENG)
Structure & Available Subjects:	Completion of 400 points of study culminating in an industry project in the final year. The structure of the Bachelor of Engineering degree requires completion of specific subjects as part of this stream. The majority of subjects have one or more prerequisites and therefore the sequence in which subjects are taken is very important. It is unlikely that prerequisite waivers will be granted for these engineering subjects and therefore students should take care to select subjects in one study period that satisfy prerequisites for subjects in later study periods.
Subject Options:	The following subjects are required for this stream of the Bachelor of Engineering.

First Year (normally 100 points taken in Year 1)

Subject	Study Period Commencement:	Credit Points:
ENGR10003 Engineering Systems Design 2	Summer Term, Semester 2	12.50
ENGR10004 Engineering Systems Design 1	Semester 1, Semester 2	12.50
MAST10005 Calculus 1	Semester 1, Semester 2	12.50
MAST10006 Calculus 2	Semester 1, Semester 2	12.50
PHYC10003 Physics 1	Semester 1	12.50
PHYC10004 Physics 2: Physical Science & Technology	Semester 2	12.50

Plus

Two breadth subjects (i.e. 25.00 credit points total)

N.B.

Students who have completed VCE Specialist Mathematics (or equivalent) are exempt from MAST10005 Calculus 1 and should therefore enrol in MAST10006 Calculus 2 and MAST10007 Linear Algebra.
Students with a high level of achievement in mathematics may enrol in both MAST10008 Accelerated Mathematics 1 and MAST10009 Accelerated Mathematics 2 instead of both MAST10006 Calculus 2 and MAST10007 Linear Algebra.
Students with a high level of achievement in physics may enrol in PHYC10001 Physics 1: Advanced and PHYC10002 Physics 2: Advanced instead of both PHYC10003 Physics 1 and PHYC10004 Physics 2: Physical Science & Technology.

Second Year (normally 100 points taken in Year 2)

Subject	Study Period Commencement:	Credit Points:
COMP20005 Engineering Computation	Semester 1, Semester 2	12.50
ELEN20005 Foundations of Electrical Networks	January, Semester 2	12.50

ENGR20004 Engineering Mechanics	Summer Term, Semester 1, Semester 2	12.50
MAST10007 Linear Algebra	Summer Term, Semester 1, Semester 2	12.50
MAST20029 Engineering Mathematics	Summer Term, Semester 1, Semester 2	12.50

Plus

- One breadth subject (i.e. 12.50 credit points total)
- One science elective (i.e. 12.50 credit points total)
- One approved elective (i.e. 12.50 credit points total)

NB.

- Students who have completed VCE Specialist Mathematics (or equivalent) and completed either both MAST10006 Calculus 2 and MAST10007 Linear Algebra or both MAST10008 Accelerated Mathematics 1 and MAST10009 Accelerated Mathematics 2 in Year 1 can replace MAST10007 Linear Algebra in the table above with a science elective.
- A science elective is any subject available as science credit in the Bachelor of Science course (B-SCI). Refer to **Science-credited subjects - new generation B-SCI and B-ENG (../../view/current/%21B-SCI-SPC%2B1021)** for a full list of subjects. Science electives may have prerequisites.
- An approved elective is either a science elective or, with approval of the coordinator of this specialisation, any other subject for which the student has the appropriate prerequisites.

Third Year (normally 100 points taken in Year 3)

Subject	Study Period Commencement:	Credit Points:
MCEN30014 Mechanical Design	Semester 2	12.50
MCEN30017 Mechanics & Materials	Semester 1	12.50
MCEN30016 Mechanical Dynamics	Semester 1	12.50
MCEN90008 Fluid Dynamics	Semester 2	12.50
MCEN90009 Dynamics of Machines	Semester 2	12.50
MCEN90010 Finance & Human Resources for Engineers	Not offered 2014	12.50
MCEN90026 Solid Mechanics	Semester 2	12.50
MCEN30018 Thermodynamics and Fluid Mechanics	Semester 1, Semester 2	12.50

N.B.

- Students who have taken ECON10004 Introductory Microeconomics as breadth must replace the core subject MCEN90010 Finance & Human Resources for Engineers with MGMT20001 Organisational Behaviour.
- Students who have completed MGMT20001 Organisational Behaviour as breadth must use MGMT20001 to replace the core subject MCEN90010 Finance & Human Resources for Engineers Students and take ECON10004 Introductory Microeconomics as breadth.
- Students may also enrol in both ECON10004 Introductory Microeconomics and MGMT20001 Organisational Behaviour as breadth and replace MCEN90010 Finance & Human Resources for Engineers with a science elective (see above).
- Students will need to contact their student centre in order to make any of the above adjustments on their study plan.
- Credit may not be obtained for both MCEN30018 Thermodynamics and Fluid Mechanics and ENGR30001 Fluid Mechanics & Thermodynamics

Fourth Year (normally 100 points taken in Year 4)

Subject	Study Period Commencement:	Credit Points:

ELEN90055 Control Systems	Semester 1	12.50
MCEN90012 Design for Manufacture	Semester 1	12.50
MCEN90013 Design for Integration	Semester 2	12.50
MCEN90014 Materials	Semester 1	12.50
MCEN90015 Thermodynamics	Semester 1	12.50
MCEN90022 Capstone Project	Year Long, Semester 1	25

Plus

One elective selected from subjects offered by the Department of Mechanical Engineering (i.e. 12.50 credit points total)

Subject	Study Period Commencement:	Credit Points:
MCEN90020 Advanced Materials	Semester 1	12.50
MCEN90031 Applied High Performance Computing	Semester 2	12.50
MCEN90029 Advanced Solid Mechanics	Semester 2	12.50
MCEN90027 Simulation Of Mechatronic Systems	Not offered 2014	12.50
MCEN90029 Advanced Solid Mechanics	Semester 2	12.50
MCEN90028 Robotics and Automation Systems	Semester 2	12.50
MCEN90023 Quality and Reliability	Semester 2	12.50
ENGR90024 Computational Fluid Dynamics	Semester 1	12.50
BMEN90022 Computational Biomechanics	Semester 2	12.50

Related Course(s):	Bachelor of Engineering