

4635 Bachelor of Commerce and Bachelor of Engineering (Honours) 2015

Materials Engineering

Stage One:

- Course advice is required for enrolment in stage one – enrolment plan depends on the need for foundation units
- Level 2 electives may be undertaken following successful completion of 24 credit points. If a level 2 elective is undertaken at stage one, course advice is required to ensure that all engineering course requirements are met in later stages
- Students undertake a common first year and nominate their chosen specialisation through the 'branch selection' process

Core Units (30 credit points) – all students complete:	Foundation units (0 or 6 credit points)
ENG1060 Computing for engineers ENG1091 Mathematics for engineering ENG1001 Engineering design: lighter, faster, stronger ENG1002 Engineering design: cleaner, safer, smarter ENG1003 Engineering mobile apps	<i>Students who have not completed VCE units 3&4 of Chemistry, Physics and/or Specialist Mathematics must complete one appropriate unit from:</i> ENG1070 Foundation chemistry ENG1090 Foundation mathematics ENG1080 Foundation physics <i>Students who have not completed Year 12 VCE Specialist Mathematics (or equivalent) must undertake ENG1090 Foundation mathematics.</i>
Elective units (0 or 6 credit points)	
CHM1011 Chemistry I (Clayton) <u>or</u> CHM1051 Chemistry 1 advanced (Malaysia) ENE1621 Environmental engineering ENG1021 Spatial communication in engineering ENG1051 Materials for energy and sustainability ENG1071 Chemistry for engineering ENG1081 Physics for engineering MNE1010 Introduction to mining	CHE2161 Mechanics of fluids <u>or</u> MEC2404 Mechanics of fluids ECE2041 Telecommunications ECE2072 Digital systems MAE2405 Aircraft performance TRC2001 Introduction to systems engineering Free elective – can be taken from any faculty where prerequisites can be met

Stage one

48 credit points (36cp Engineering and 12cp Commerce)

Sem	Engineering stage one foundation unit <u>or</u> Engineering stage one elective unit	Engineering stage one core unit	Engineering stage one core unit	Commerce unit
Sem 1	Engineering stage one foundation unit <u>or</u> Engineering stage one elective unit	Engineering stage one core unit	Engineering stage one core unit	Commerce unit
Sem 2	Engineering stage one core unit	Engineering stage one core unit	Engineering stage one core unit	Commerce unit

Stage two

(54 credit points)

Sem	Engineering stage one foundation unit <u>or</u> Engineering stage one elective unit	Engineering stage one core unit	Engineering stage one core unit	Commerce unit
Sem 1	ENG2091 Advanced engineering maths A	MTE2541 Crystal structures, thermodynamics and phase equilibria	Commerce unit	Commerce unit
Sem 2	MTE2542 Microstructural development	MTE2545 Polymers and ceramics I	Commerce unit	Commerce unit

Stage three

(54 credit points)

Sem	Engineering stage one foundation unit <u>or</u> Engineering stage one elective unit	Engineering stage one core unit	Engineering stage one core unit	Commerce unit
Sem 1	MTE2544 Functional materials	MTE2546 Mechanics of materials	Commerce unit	Commerce unit
Sem 2	MTE2547 Structure-property relationships in materials	MTE2548 Biomaterials I	Commerce unit	Commerce unit

Stage four

(48 credit points)

Sem	Engineering stage one foundation unit <u>or</u> Engineering stage one elective unit	Engineering stage one core unit	Engineering stage one core unit	Commerce unit
Sem 1	MTE3541 Materials durability	MTE3542 Microstructural design in structural materials	MTE3543 Microstructure to applications: The mechanics of materials	MTE3544 management and practice in materials engineering
Sem 2	MTE3545 Functional materials and devices	MTE3546 Polymers and ceramics II	MTE3547 Materials characterisation and modelling	Commerce unit

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Stage five

(48 credit points)

Sem 1	MTE4525 Project I	MTE4571 Materials engineering design and practice	MTE4572 Polymer and composite processing and engineering	Commerce unit
Sem 2	MTE4526 Project II	MTE4573 Processing and engineering of metals and ceramics	Commerce unit	Commerce unit

Materials Engineering elective units:

MTE3544 Management and practice in materials engineering	MTE4593 Materials and environment
ENG4700 Engineering technology for biomedical imaging and sensing	MTE4594 engineering alloy design, processing and selection
MTE4590 Modelling of materials	MTE4595 corrosion mechanisms and protection methods
MTE4592 Advanced ceramics and applications	MTE4596 Biomaterials II
MTE4599 Materials for energy technologies	MTE4597 Engineering with nanomaterials
	MTE4598 Electron microscopy
	One six point inter-faculty elective

Notes:

Overloading	Students will normally expect to complete the course in five years. This is achieved by undertaking one additional unit per semester twice in the later stages of the degree. Overloading is not compulsory, students may choose to complete in 5 ½ years.
Unit requisites	All pre-requisite and co-requisite requirements must be undertaken in order to be able to enrol into a specific unit
Credit points	Unless specified, all units are worth 6 credit points Bachelor of Engineering 26 units x 6cp = Total of 156 credit points Bachelor of Commerce 16 units x 6cp = Total of 96 credit points (42 units = 252cp)
Duration of degree	5 years full-time, 10 years part-time
Time limit	Time limit = 10 years. Students have ten years in which to complete this award from the time they commence first year. Periods of intermission are counted as part of the ten years.
Course advice	www.eng.monash.edu.au/current-students/course-advice.html www.buseco.monash.edu.au/student/
Monash University handbook	Students should follow the course requirements for the year the degree was commenced www.monash.edu.au/pubs/2015handbooks/courses/index-byfaculty-eng.html
Branch Selection	www.eng.monash.edu.au/current-students/firstyear.html

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