4632 Bachelor of Engineering (Honours) 2015

Materials Engineering

Stage one: **48 credit points**

- 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
- 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, 6 or 12 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	*Students who have not completed VCE units 3&4 of Chemistry, Physics and/or Specialist Mathematics must complete one or two units from:* ENG1070 Foundation Chemistry ENG1090 Foundation Mathematics PHS1080 Foundation physics

Elective units (6, 12 or 18 credit points)

CHM1011 Chemistry I (Clayton) or 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 *or* 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 two **(48 credit points)**

Sem 1	ENG2091 Advanced engineering maths A	MTE2541 Crystal structures, thermodynamics and phase equilibria	MTE2544 Functional materials	MTE2546 Mechanics of materials
Sem 2	MTE2542 Microstructural development	MTE2545 Polymers and ceramics I	MTE2547 Structure-property relationships in materials	MTE2548 Biomaterials I

Stage three **(48 credit points)**

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	Engineering elective – choose from elective list below

Stage four **(48 credit points)**

Sem 1	MTE4525 Project I	MTE4571 Materials engineering design and practice	MTE4572 Polymer and composite processing and engineering	Engineering elective – choose from elective list below
Sem 2	MTE4526 Project II	MTE4573 Processing and engineering of metals and ceramics	Engineering elective – choose from elective list below	Engineering elective – choose from elective list below

Materials Engineering elective units:

MTE3544 Management and practice in materials engineering ENG4700 Engineering technology for biomedical imaging and sensing MTE4590 Modelling of materials MTE4592 Advanced ceramics and applications MTE4593 Materials and environment MTE4594 engineering alloy design, processing and selection MTE4596 Biomaterials II MTE4597 Engineering with nanomaterials MTE4598 Electron microscopy	One six point elective from any faculty * * This unit may be chosen from within the faculty or from a discipline offered by another faculty. The elective should not substantially duplicate a unit already studied and must be approved by the course adviser. Students must be able to meet any unit prerequisites. MTE5883 Environmental durability and protection of metals and engineering materials** MTE5884 Materials for energy technologies** ** Level 5 electives are only available to final year students with a HWA of 70%+ and approval from the Department of Materials Engineering.

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Notes:

Credit points	Unless specified, all units are worth 6 credit points **Bachelor of Engineering** 32 units x 6cp = **Total of 192 credit points**
Unit requisites	All pre-requisite and co-requisite requirements must be undertaken in order to be able to enrol into a specific unit
Duration of degree	4 years full-time, 8 years part-time
Time limit	8 years. Students have eight years in which to complete this award from the time they commence first year. Periods of intermission are counted as part of the eight years.
Course advice	www.eng.monash.edu.au/current-students/course-advice.html
Monash University handbook	Students should follow the course structure for the year the course was commenced http://monash.edu/pubs/2015handbooks/courses/index-byfaculty-eng.html
Branch Selection	www.eng.monash.edu.au/current-students/firstyear/branch-selection.html

All information correct at publication but may be subject to change – 14 January 2015
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