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

Electrical and Computer Systems 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	*Students who have not completed VCE units 3&4 of Chemistry, Physics and/or Specialist Mathematics must complete one unit from:* ENG1070 Foundation chemistry ENG1090 Foundation mathematics ENG1080 Foundation physics *Students who have not completed Year 12 VCE Specialist Mathematics (or equivalent) must undertake ENG1090 Foundation mathematics.*
Elective units (0 or 6 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 one **48 credit points (36cp Engineering and 12cp Commerce)**

Sem 1	Engineering stage one foundation unit or 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 **(48 credit points)**

Sem 1	ECE2011 Signal processing	ECE2071 Computer organisation and programming	Commerce unit	Commerce unit	
Sem 2	ECE2072 Digital systems	ENG2092 Advanced engineering mathematics B	Commerce unit	Commerce unit	Commerce unit

Stage three **(48 credit points)**

Sem 1	ECE2041 Telecommunications 1	ECE2061 analogue electronics	Commerce unit	Commerce unit	
Sem 2	ECE2021 Electromagnetism	ECE2031 Circuits and control	Commerce unit	Commerce unit	Commerce unit

Stage four **(48 credit points)**

Sem 1	ECE3062 electronic systems and control	ECE3073 Computer systems	ECE3093 Optimisation estimation and numerical methods	Commerce unit
Sem 2	ECE3091 engineering design	Engineering elective – choose from ECSE elective list below	Engineering elective – choose from ECSE elective list below	Commerce unit

Stage five **(48 credit points)**

Sem 1	ECE3051 Electrical energy systems	ECE3022 Wireless & guided EM	ECE4094 Project A	Commerce unit
Sem 2	ECE4095 Project B	Engineering elective – choose from ECSE elective list below	Engineering elective – choose from ECSE elective list below	Commerce unit

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Electrical and Computer Systems Engineering (ECSE) elective units:	
ECE4012 Applied digital signal processing	ECE4078 Intelligent robotics
ECE4023 Radio frequency electronics	ECE4081 Medical instrumentation
ECE4024 Wireless communications	ECE4084 Biomechanics of human musculo skeletal systems
ECE4032 Advanced control	ECE4086 Medical imaging technology
ECE4033 Industrial instrumentation and measurement technologies	ECE4087 Medical technology innovation*
ECE4042 Communications theory	ENG4700 Engineering technology for biomedical imaging and sensing (subject to Departmental approval)
ECE4043 optical communications	
ECE4044 Telecommunications protocols	TRC3500 Sensors and artificial perception
ECE4045 Network performance	
ECE4053 Electrical energy – generation and supply	ECE5881 Real-time system design*
ECE4054 Electrical energy- power converters and motor control	ECE5882 Advanced electronics design*
	ECE5883 Advanced signal processing*
ECE4055 Electrical energy – power electronic applications	ECE5884 Wireless communications*
	*ECE5xxx are available as ECSE electives by approval of the Head of Department of Electrical and Computer Systems for students who have completed either ECE3091 or 132 credit points and have an Honours Weighted Average of 70% or higher.
ECE4058 Electrical energy – high voltage engineering	
ECE4063 Large scale digital design	
ECE4064 Electronic test technology	
ECE4074 Advanced computer architecture	
ECE4075 Real time embedded systems	
ECE4076 Computer vision	*Note that not all units will be taught in any year and many will be offered only in alternate years*
ECE4077 Advanced computing techniques	

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.
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)
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	5 years full-time, 10 years part-time
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 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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