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

Mechatronics Engineering

Stage one: **48 credit points (36 credit point Engineering and 12 credit points Commerce)**

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

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	ECE2061 Analogue electronics	ECE2071 Computer organisation and programming	TRC2201 Mechanics **Prerequisites** Must have passed 42 credit points	Commerce unit
Sem 2	ENG2092 Advanced engineering maths B **Prerequisites** ENG1091	ECE2072 Digital systems	Commerce unit	Commerce unit

Stage three **(54 credit points)**

Sem 1	MEC2402 Engineering design I **Co-requisites** MEC2403 or MAE2401 or TRC2201	Commerce unit	Commerce unit	Commerce unit	
Sem 2	ECE3051 Electrical energy systems	TRC2000 Mechatronics project I **Prerequisites** TRC2100 or MEC2402	TRC2200 Thermo-fluids and power systems	Commerce unit	Commerce unit

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Stage four **(54 credit points)**

Sem 1	ECE3073 Computer systems **Prerequisites** ECE2072 and one of: + ECE2071 + FIT1008 + FIT1029 and FIT1040	TRC3200 Dynamical systems **Prerequisites** TRC2201 and ENG2092	TRC3500 Sensors and artificial perception **Prerequisites** TRC2500, ECE2061 **Co-requisites** TRC3300 or ECE3073	Commerce unit	Commerce unit
Sem 2	TRC3000 Mechatronics project II **Prerequisites** (TRC2000 or MEC2406) and (TRC3300 or ECE3073)	TRC3600 Modelling and control **Prerequisites** TRC3200	TRC3801 Mechatronics and manufacturing **Prerequisites** TRC2100, MEC2402	Commerce unit	

Stage five **(48 credit points)**

Sem 1	TRC4000 Mechatronics final year project I **Prerequisites** 132 credit points completed including TRC3000.	TRC4800 Robotics **Prerequisites** TRC3600	Engineering elective from Mechatronics elective list below	Commerce unit
Sem 2	TRC4002 Professional practice **Prerequisites** TRC3000	Engineering elective from Mechatronics elective list below	Commerce unit	Commerce unit

Mechatronics elective units:	
ECE2041 Telecommunications	MEC4425 Micro-nano solid and fluid mechanics
ECE4053 Electrical energy - generation and supply	MEC4426 Computer-aided design
ECE4054 Electrical energy - power converters and motor control	MEC4428 Advanced dynamics
	MEC4444 Industrial noise control
ECE4063 Large scale digital design	MEC4446 Composite and structures
ECE4074 Advanced computer architecture	MTE2544 Functional Materials
ECE4075 Real time embedded systems	MTE3545 Functional materials and devices
ECE4078 Intelligent robotics	TRC4001 Mechatronics final year project II
MEC4418 Control systems	

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** **(**Total 42 units)
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.au/pubs/2015handbooks/courses/4635.html