4632 Bachelor of Engineering (Honours) 2015

Mechatronics 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	ECE2061 Analogue electronics	ECE2071 Computer organisation and programming	MEC2402 Engineering design I **Co-requisites** MEC2403 or MAE2401 or TRC2201	TRC2201 Mechanics **Prerequisites** Must have passed 42 credit points
Sem 2	ENG2092 Advanced engineering maths B **Prerequisites** ENG1091 or (MTH1030 or MTH1035 for students studying double degrees with science)	ECE2072 Digital systems	TRC2001 Introduction to Systems Engineering **Prerequisites** 24 Credit points	TRC2200 Thermo-fluids and power systems

Stage three **(48 credit points)**

Sem 1	TRC3200 Dynamical systems **Prerequisites** TRC2201 and ENG2092	TRC3500 Sensors and artificial perception **Prerequisites** TRC2500, ECE2061 **Co-requisites** TRC3300 or ECE3073	ECE3073 Computer systems **Prerequisites** ECE2072 and one of: ECE2071 or FIT1008 or FIT1029 and FIT1040	Engineering elective – choose from elective list below
Sem 2	TRC3000 Mechatronics project II **Prerequisites** (TRC2000 or MEC2406) and (TRC3300 or ECE3073)	ECE3051 Electrical energy systems **Prerequisites** ECE2061 or TRC2500	TRC3600 Modelling and control **Prerequisites** TRC3200	TRC3801 Mechatronics and manufacturing **Prerequisites** TRC2100, MEC2402

Stage four **(48 credit points)**

Sem 1	TRC4000 Mechatronics final year project I **Prerequisites** 132 credit points completed including TRC3000.	TRC4800 Robotics **Prerequisites** TRC3600	**Clayton** - Engineering elective or **Malaysia** - ECE4099 Professional practice	Engineering elective – choose from elective list below
Sem 2	**Clayton** – TRC4002 Professional practice **Prerequisites** TRC3000 or **Malaysia** - Engineering elective – choose from elective list below	Engineering elective – choose from elective list below	Engineering elective – choose from elective list below	Engineering elective – choose from elective list below

Mechatronics Engineering elective units:	
ECE2041 Telecommunications	ECE4076 Computer vision
ECE4033 Industrial instrumentation and measurement technologies	ECE4078 Intelligent robotics
ECE4053 Electrical energy – generation and supply	ECE4808 Organic electronics and micro devices
ECE4054 Electrical energy – power converters and motor control	MEC4418 Control systems
ECE4063 Large scale digital design	MEC4444 Industrial noise control
ECE4074 Advanced computer architecture	TRC4001 Mechatronics final year project II
	TRC4900 Real time embedded systems
	TRC4901 Computation intelligence and AI6 point elective from any faculty*
	All elective units must be approved by the course director.

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 – February 2015 v2
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