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

Mechanical 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 or two units from:* ENG1070 Foundation chemistry ENG1090 Foundation mathematics PHS1080 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)

Level-one electives:

CHE2161 Mechanics of fluids or MEC2404 Mechanics of fluids	ENG1051 Materials for energy and sustainability
CHM1051 Chemistry I advanced	ENG1071 Chemistry for engineering
ECE2041 Telecommunications	ENG1081 Physics for engineering
ECE2072 Digital systems	MAE2405 Aircraft performance
ENE1621 Environmental engineering	MNE1010 Introduction to mining
ENG1021 Spatial communication in engineering	TRC2001 Introduction to systems engineering
	6-point elective 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	MEC2401 Dynamics 1	MEC2402 Engineering design I **Co-requisites** MEC2403 or MAE2401 or TRC 2201	MEC2403 Mechanics of Materials	Commerce unit
Sem 2	MEC2456 Engineering computational analysis **Prerequisites** ENG1060	Commerce unit	Commerce unit	Commerce unit

Stage three **(54 credit points)**

Sem 1	MEC2405 Thermodynamics	Commerce unit	Commerce unit	Commerce unit	NOTE: To complete the double degree in 5 years, 1 extra Commerce Unit must be taken as an overload in EITHER semester in Level 3 and 4.
Sem 2	ENG2091 Advanced engineering maths A **Prerequisites** ENG1091	MEC2404 Fluid mechanics I	MEC2407 Electromechanics	Commerce unit	

Stage four **(54 credit points)**

Sem 1	MEC3451 Fluid mechanics II **Prerequisites** Must have passed (ENG2091 and MEC2404) OR have passed (MEC2430 or MEC2404) AND passed 2 units in (MAT2901, MAT2902, MTH2010, MTH2021, MTH2032)	MEC3453 Dynamics II **Prerequisites** MEC2401, ENG2091 or MTH2021 or MTH 2032	MEC3454 Thermodynamics and heat transfer **Prerequisites** MEC2404 and MEC2405 or MTH2021 or MTH 2032	MEC3455 Solid mechanics **Prerequisites** MEC2402 and MEC2403	NOTE: To complete the double degree in 5 years, 1 extra Commerce Unit must be taken as an overload in EITHER semester in Level 3 and 4.

Sem 2	MEC3416 Engineering design II **Prerequisites** MEC2402 and MEC2403	MEC3457 Systems and control **Prerequisites** (ENG2091 and MEC2407 and MEC2401) or (MEC2401 and MTH2021 or MEC2401 and MTH2032)	MEC3458 Experimental project **Prerequisites** Must have passed 96 credit points from engineering or science	MEC3459 Materials selection for engineering design **Prerequisites** None	

Stage five **(48 credit points)**

Sem 1	MEC4401 Final year project **Prerequisites** Must have passed 36 credit points at level three in the engineering component of the course.	MEC4404 Professional practice **Prerequisites** Must have passed 120 credit points	Commerce unit	Commerce unit
Sem 2	MEC4407 engineering design III **Prerequisites** MEC2402	Engineering elective – choose from elective list	Commerce unit	Commerce unit

Mechanical Engineering elective units:	
MEC4417 Refrigeration and air-conditioning	MEC4446 Composite structures
MEC4418 Control systems	MEC4447 computers in fluids and energy
MEC4425 Micro/nano solid and fluid mechanics	MEC4456 Robotics
MEC4426 Computer-aided design	MEC4459 Wind engineering
MEC4427 Systems integrity and maintenance	MEC4402 Final year project – thesis
MEC4428 Advanced dynamics	MEC4416 Momentum, energy & mass transport in engineering systems
MEC4444 Industrial noise and its control	

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.
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**
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 eight years.
Course advice	www.eng.monash.edu.au/current-students/course-advice.html
Monash University handbook	Students should follow the course requirements for the year the course was commenced www.monash.edu.au/pubs/handbooks/undergrad/eng-courses.html

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