4642 Bachelor of Aerospace (Honours) and Bachelor of Science 2015

Aerospace Engineering

Stage one: **(48 credit points)**

Sem 1	ENG1001 Engineering design: lighter, faster, stronger	PHS1011 Physics or PHS1080 Foundation physics	MTH1030 Techniques for modelling <u>or</u> MTH1020 if VCE Specialist maths not completed	Science unit from stage one sequences below
Sem 2	ENG1002 Engineering design: cleaner, safer, smarter	PHS1022 Physics	MTH2010 Multivariable calculus <u>or</u> MTH1030 if not already completed	Science unit from stage one sequences below

Stage two   **(48 credit points)**

Sem 1	ENG1060 Engineering computing	MEC2401 Dynamics I	MTH2010 multivariable calculus <u>or</u> MTH2021 Linear algebra and applications if MTH2010 already completed	PHS2011 Physics Quantum concepts and technologies
Sem 2	MAE2402 Thermodynamics and heat transfer	MAE2405 Aircraft performance	MTH2032 Differential equations with modelling	PHS2022 Physics for communications and measurement

Stage three   **(48 credit points)**

Sem 1	MAE2401 Aircraft structures I	MEC2402 engineering design I	Mathematics unit	Mathematics unit
Sem 2	MAE2403 Aerospace computational mechanics	MAE2404 Aerodynamics 1	Mathematics unit	Mathematics unit

Stage four   **(48 credit points)**

Sem 1	MAE3401 Aerodynamics II	MAE3407 Aircraft structures II	Science unit	Science unit
Sem 2	MAE3402 Aerospace design project	MAE3405 Flight vehicle propulsion	Science unit	Science unit

Stage five   **(48 credit points)**

Sem 1	MAE3404 Flight vehicle dynamics	MAE4404 Aerospace practices	MEC4401 Final year project	MEC4426 Computer-aided design and Science unit
Sem 2	MAE3406 Aerospace materials	MAE3408 Systems and control	MAE4408 Damage tolerance and airworthiness	Aerospace engineering elective

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Stage 1 sequences:

Select one pair of science units from:

- ASP1010 Earth to cosmos – introductory astronomy and ASP1022 life and the universe
- BIO1011 Biology I and BIO1022 Biology II
- CHM1011 chemistry I or CHM1061 Chemistry I advanced, and CHM1022 chemistry II or CHM1052 Chemistry II advanced (if this pair has not already been taken)
- ESC1011 Planet earth: our place in the universe and ESC1022 Planet earth; Surface processes
- FIT1029 Algorithmic problem solving and FIT1040 Programming fundamentals (undertake for Computer Science sequence)
- STA1010 Statistical methods for science and MAT1830 Discrete mathematics for computer science

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Mathematics major – total 48 credit points:

- MTH1020 Analysis of change (for students who have not completed VCE units 3 and 4 of specialist mathematics)
- MTH1030 Techniques for modelling
- MTH2010 Multivariable calculus
- MTH2021 Linear algebra and applications
- MTH2032 Differential equations with modelling
- 18 points (if completed MTH1020) or 24 points of approved science units to complete a major in mathematics. Recommended to include MTH3020 Complex analysis and integral transforms.

Students with a strong mathematics background and a keen interest in the subject could replace MTH1030, and MTH2010 and MTH2021 with their advanced versions MTH1035, MTH2015 and MTH2025 respectively. Students will need to seek permission from Science Student Services to enrol in these units.

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Aerospace engineering electives:	
MAE4409 Wing design (preferred elective)	MEC4418 Control systems
MAE4407 Instrumentation and avionics	MEC4428 Advanced dynamics
MAE4965 Advanced aerodynamics and turbulence	MEC4446 Composite structures
MAE4980 Aircraft engines	MEC4447 computers in fluids and energy
MEC4402 Final year project – thesis (students need to have achieved an aggregate score of at least 70 per cent to enrol in this unit)	MEC4459 Wind engineering
MEC4403 Research project (subject to departmental approval)	

Notes:

Credit points	Unless specified, all units are worth 6 credit points **Bachelor of Aerospace Engineering** 22 units x 6cp = **Total of 132 credit points** **Bachelor of Science** 18 units x 6cp = **Total of 108 credit points** **(Total: 240cp)**
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	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 http://monash.edu/science/current/undergraduate/help/
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