4632 Bachelor of Engineering (Honours) 2015

Chemical 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. 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, 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 Fundamentals of materials for 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	CHE2164 Thermodynamics	CHE2165 Bio-nano engineering	CHM2735 chemistry principles and practice	ENG2091 Advanced engineering mathematics A
Sem 2	CHE2161 Mechanics of fluids	CHE2162 Material and energy balances	CHE2163 Heat and mass transfer	ENG2092 Advanced engineering mathematics B

Stage Three **(48 credit points)**

Sem 1	CHE3161 Chemistry and chemical thermodynamics	CHE3163 Sustainable processing I	CHE3165 Separation processes	CHE3167 transport phenomena and numerical methods
Sem 2	CHE3162 Process control	CHE3164 Reaction engineering	CHE3166 Transport phenomena and numerical methods	Chemical engineering stream elective – see list below

Stage Four **(48 credit points)**

Sem 1 OR	CHE4161 engineers in society	CHE4180 Chemical engineering project (12 credit points)	Chemical engineering stream elective – see list below
Sem 1	CHE4164 Integrated industrial training – by approval only. For selected students taking a period of integrated industrial training in the first semester of their final year. This will replace the three units CHE4180, CHE4161 and one of the stream elective units which form the normal first semester of the final year.		
Sem 2	CHE4162 Particle technology	CHE4170 Design project (12 credit points)	Chemical engineering stream elective – see list below

Chemical Engineering elective units:

Complete three units from one stream as indicated:

Sustainable processing stream

CHE3175 Sustainable process engineering case studies – Stage three
CHE4173 Sustainable processing II – Stage four
ENE3608 Environmental impact assessment and management systems – Stage four

Biotechnology stream

BCH2011 Structure and function of cellular biomolecules (Clayton)
or CHE2871 Biochemistry for engineers (Malaysia) – Stage four
CHE3171 Bioprocess technology – Stage three
CHE4172 Biochemical engineering – Stage four

Nanotechnology and materials

CHE3172 Nanotechnology and materials 1 – Stage three
CHE4172 nanotechnology and materials 2 – Stage four
MTE2541 Crystal structures, thermodynamics and phase equilibria – Stage four

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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
Level 2 units	If MEC2404 Mechanics of fluids is completed at stage one this can replace CHE2161 Mechanics of fluids at stage two in Chemical engineering
Duration of degree	4 years full-time, 8 years part-time
Time limit	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 – 15 November 2014
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