MONASH University

Course progression map for 2017 commencing students

This progression map provides advice on the suitable sequencing of units and guidance on how to plan unit enrolment for each semester of study. It should be used in conjunction with the requirements of the course as specified in the Handbook. The map is subject to updates. Update version: 16 March 2022

E3008 Bachelor of Engineering (Honours) and Bachelor of Pharmaceutical Science

Engineering specialisation – Chemical engineering Pharmaceutical science specialisation - Formulation science

YEAR 1 Semester 1	PSC1011 Physiology 1	PSC1021 Bioorganic and medicinal chemistry I	PSC1031 Physical chemistry I	PSC1041 Scientific enquiry	
YEAR 1 Semester 2	PSC1012 Physiology II	PSC1022 Bioorganic and medicinal chemistry II	PSC1032 Physical chemistry II	PSC1042 Introduction to pharmaceutical sciences	
YEAR 2 Semester 1	ENG1001 Engineering Design: lighter, faster, stronger or ENG1002Engineering design: cleaner, safer, smarter	ENG1005 Mathematics for engineering or ENG1003 Engineering mobile applications	Foundation unit or ENG1060 Computing for engineers	CHM1011 chemistry 1 or CHM1051 Chemistry 1 advanced	If two foundation units are required then overload is required for ENG1090 or PHS1080*, whichever is not yet completed **This unit is replaced by PHS1001 Foundation physics from 2018*
YEAR 2 Semester 2	ENG1002 Engineering design: cleaner, safer, smarter or ENG1001 Engineering design: lighter, faster, stronger	ENG1003 Engineering mobile applications or ENG1005 Mathematics for engineering	Free elective or ENG1060 Computing for engineers (if not completed)	CHE2161 Mechanics of fluids	
YEAR 3 Semester 1	PSC2041 Biopharmaceutics	PSC3211 Industrial formulation	PSC3231 Pharmaceutical product manufacture	PSC3041 Applied analytical methods	
YEAR 3 Semester 2	PSC2222 Formulation chemistry	PSC2232 Colloid chemistry	PSC2132 Introduction to spectroscopy	PSC3222 Advanced formulations and nanotechnologies	
YEAR 4 Semester 1	CHE3161 Chemistry and chemical thermodynamics	CHE3165 Separation processes	CHE2164 Thermodynamics 1	ENG2005 Advanced engineering mathematics	
YEAR 4 Semester 2	CHE3166 Process design	CHE2162 Material and energy balances	CHE2163 Heat and mass transfer	CHE3164 Reaction engineering	
YEAR 5 Semester 1	CHE4164 Integrated industrial project (18 points) For selected students taking a period of integrated industrial training in the first semester of their final year. CHE4164 (18 cp) will be replaced by CHE4164 (6 cp) and CHE4165 (6 cp) from 2022. You must now also complete CHE4161. See footnote.				
OR					
YEAR 5 Semester 1	CHE4180 Chemical engineering project Replace with ENG4701 from 2021. *See footnote*	CHE4162 Particle technology	CHE4161 Engineers in society	CHE3167 Transport phenomena and numerical methods	
YEAR 5 Semester 2	ENG4702 Final year project B See footnote	CHE4170 Design project		CHE3162 Process control	

Chemical engineering	Formulation science

NOTE:

- Students in the double degree do not complete the following Pharmaceutical Science units since Engineering studies provide the knowledge and skills: PSC2011 Biochemical pharmacology; PSC2012 Molecular pharmacology; PSC2021 Structural organic chemistry; PSC2031 Analytical Methods PSC3221 Biomolecule formulation and modified release technology; PSC3212 Pharmaceutical regulatory affairs; PSC3232 Industry placement; one elective unit from: PSC2332 Molecular cell biology, PSC3112 Synthetic medicinal chemistry, PSC3142 Computational drug design.
- From 2021, **ENG4701 and ENG4702 will replace the 12 credit points CHE4180**, therefore extending the final year project over two semesters. Please seek course advice if needed.
- CHE4164 and CHE4165 are integrated industrial project units that are in place of the final year project units ENG4701 and ENG4702 and for select students only. Depending on placement location, you may have to overload a semester or extend an additional semester in order to complete your course.
- Students should not overload in the semester of undertaking **CHE4170**.
- All Bachelor of Engineering (Honours) students are required to complete Continuous Professional Development (CPD) in order to graduate. For CPD advice, refer to the CPD webpage. For enrolment advice, please refer to the Course advisers webpage

Source: *Monash University 2017 Handbook* –http://www.monash.edu.au/pubs/2017handbooks/maps/map-e3008.pdf *CRICOS Provider Number: 00008C*