MONASH University

Course progression map for 2019 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. This map is subject to updates. Update version: 19 May 2022

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

Engineering specialisation – Chemical engineering
Pharmaceutical science specialisation - Formulation science

YEAR 1 Semester 1	BPS1011 Human physiology I: Cells to systems	BPS1021 Medical chemistry I: Structure	BPS1031 Physical chemistry I: Equilibria and change	BPS1041 Scientific inquiry	
YEAR 1 Semester 2	BPS1012 Human physiology I: Body systems	BPS1022 Medical chemistry II: Reactivity and biomolecules	BPS1032 Physical chemistry II: Solutions, surfaces and solids	BPS1042 Pharmaceutical science in context	
YEAR 2 Semester 1	ENG1001 Engineering Design: lighter, faster, stronger or ENG1002	ENG1005 Mathematics for engineering or ENG1003	Foundation unit or ENG1060 Computing for engineers	CHE2164 Thermodynamics 1	If two foundation units are required then overload is required for ENG1090 or PHS1001, whichever is not yet completed
YEAR 2 Semester 2	ENG1002 Engineering design: cleaner, safer, smarter or ENG1001	ENG1003 Engineering mobile applications or ENG1005	CHE2163 Heat and mass transfer	CHE2162 Material and energy balances	
YEAR 3 Semester 1	BPS2031 Analytical methods I: Principles and applications	BPS2041 Drug delivery and Pharmacokinetics	BPS3311 Industrial formulation	BPS3331 Pharmaceutical product development and manufacture	
YEAR 3 Semester 2	BPS2022 Drug discovery and design	BPS2042 Drug development	BPS3322 Drug delivery nanotechnology	BPS3332 Applied pharmacokinetics and pharmacodynamics	
YEAR 4 Semester 1	CHE3161 Chemistry and chemical thermodynamics	CHE3165 Separation processes	First Year engineering elective or ENG1060 Computing for engineers (if not completed)	ENG2005 Advanced engineering mathematics	
YEAR 4 Semester 2	CHE3166 Process design	CHE2161 Mechanics of fluids	CHE3162 Process control	CHE3164 Reaction engineering	
YEAR 5 Semester 1	CHE4164 Integrated industrial project (18 points) For selected students taking a period of integrated industrial training in 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.				ENG0001 Continuous Professional Development (0 credit points)
OR					
YEAR 5 Semester 1	CHE4180 Chemical engineering project Replace with ENG4701. See footnote	CHE4161 Engineers in society	CHE4162 Particle technology	CHE3167 Transport phenomena and numerical methods	
YEAR 5 Semester 2	ENG4702 Final year project B See footnote	CHE4170 Design project		CHE4171 Biochemical engineering From 2022, replace with one level 3, 4 or 5 chemical engineering unit from this list below.	

Chemical engineering	Formulation science

6 CP CORE – LEVEL 3, 4 OR 5 CHEMICAL ENGINEERING UNIT

Due to overlapping contents with BPS1031/BPS1032, CHE2166 or CHE4171 was to be completed in place of CHM1011/CHM1051 (which is a core unit in the chemical engineering specialisation). From 2022, you replace with a unit selected from below:

CHE3172 Nanotechnology and materials 1
CHE5322 Advanced biochemical engineering
CHE5882 Biomass and biorefineries
CHE5883 Nanostructured membranes for separation and energy production
CHE5889 Food engineering and processing

Note:

- 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 for select students only. The units are undertaken in place of the final year project units ENG4701 and ENG4702. Depending on placement location, you may have to overload a semester or extend an additional semester in order to complete your course.
- CHE4170 - You should not overload in the semester when undertaking this unit.
- All students are required to complete at least 420 hours of Continuous Professional Development (CPD) in order to graduate. For further information refer to the CPD webpage.
- For enrolment advice, please refer to the Course advisers webpage.

Source: *Monash University 2019 Handbook*