MONASH University

# Course progression map for 2021 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 does not substitute for the list of required units as described in the course 'Requirements' section of the Handbook. Please note that the map is subject to updates. Update version: 11 December 2020

## 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 | ENG1002 Engineering design: cleaner, safer, smarter | Foundation unit or First Year engineering elective *(if no foundation units are required)* | 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 | ENG1005 Mathematics for engineering | ENG1060 Computing for engineers | 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 | BPS3051 Pharmaceutical product development | BPS3061 Industrial formulation | |
| **YEAR 3** Semester 2 | BPS2022 Drug discovery and design **OR** BPS2032 Analytical Methods II | BPS2042 Drug development | BPS3032 Applied Pharmacokinetics dynamics and nanotechnology | BPS3062 Professional experience **OR** BPS3012 Applied pharmaceutical science: from concept to market | |
| **YEAR 4** Semester 1 | CHE3161 Chemistry and chemical thermodynamics | CHE3165 Separation processes | ENG1003 Engineering mobile applications | ENG2005 Advanced engineering mathematics | CHE3167 Transport phenomena and numerical methods (for students planning to enrol in CHE4164) |
| **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 the first semester of their final year. This will replace the three core units below [CHE4181, CHE4182 and CHE4161] | | | | ENG0001 Continuous Professional Development (0 credit points) |
| **OR** | | | | | |
| **YEAR 5** Semester 1 | CHE4181 Chemical engineering project A | CHE4162 Particle technology | CHE4161 Engineers in society | CHE3167 Transport phenomena and numerical methods | |
| **YEAR 5** Semester 2 | CHE4182 Chemical engineering project B | CHE4170 Design project | | CHE4171 Biochemical engineering | |

| | |
|---|---|
| Chemical engineering | Formulation science |

Note:

- If you choose CHE4164 and depending on placement location, you may have to overload a semester or extend an additional semester in order to complete your course requirement.
- You should not overload in the semester of undertaking CHE4170.
- You 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.