

## Course progression maps for 2024 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. Updated 27 August 2026

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

Engineering specialisation – Chemical engineering

Pharmaceutical science specialisation - Formulation science

|                                  |                                                                                                                                       |                                                                                    |                                                                                                                 |                                                                                                                                                |                                                                                                                                                        |
|----------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|
| Year 1<br>Semester 1<br>February | <a href="#">BPS1011</a> Human physiology I: Cells to systems                                                                          | <a href="#">BPS1021</a> Medical chemistry I: Structure                             | <a href="#">BPS1031</a> Physical chemistry I: Equilibria and change                                             | <a href="#">BPS1041</a> Scientific inquiry                                                                                                     |                                                                                                                                                        |
| Year 1<br>Semester 2<br>July     | <a href="#">BPS1012</a> Human physiology I: Body systems                                                                              | <a href="#">BPS1022</a> Medical chemistry II: Reactivity and biomolecules          | <a href="#">BPS1032</a> Physical chemistry II: Solutions, surfaces and solids                                   | <a href="#">BPS1042</a> Pharmaceutical science in context                                                                                      |                                                                                                                                                        |
| Year 2<br>Semester 1<br>February | <a href="#">ENG1011</a> Engineering methods                                                                                           | <a href="#">ENG1012</a> Engineering design                                         | Foundation unit * or <a href="#">First Year engineering breadth study</a> (if no foundation units are required) | <a href="#">CHE2164</a> Thermodynamics 1                                                                                                       | If two foundation units are required then overload is required for <a href="#">ENG1090</a> * or <a href="#">PHS1001</a> *, whichever left to complete. |
| Year 2<br>Semester 2<br>July     | <a href="#">ENG1005</a> Engineering mathematics<br><i>Required: ENG1090 *</i>                                                         | <a href="#">ENG1014</a> Engineering numerical analysis<br><i>Required: ENG1005</i> | <a href="#">CHE2163</a> Heat and mass transfer                                                                  | <a href="#">CHE2162</a> Material and energy balances                                                                                           |                                                                                                                                                        |
| Year 3<br>Semester 1<br>February | <a href="#">BPS2031</a> Analytical methods I: Principles and applications                                                             | <a href="#">BPS2041</a> Drug delivery and pharmacokinetics                         | <a href="#">BPS3051</a> Pharmaceutical product development                                                      | <a href="#">BPS3061</a> Industrial formulation<br><i>From 2027: BPS3061 or BPS3031 Computational drug design</i>                               |                                                                                                                                                        |
| Year 3<br>Semester 2<br>July     | <a href="#">BPS2022</a> Drug discovery and design<br><b>OR</b><br><a href="#">BPS2032</a> Analytical methods II: Investigation design | <a href="#">BPS2042</a> Drug development                                           | <a href="#">BPS3052</a> Applied pharmacokinetics/dynamics and nanotechnology                                    | <a href="#">BPS3062</a> Professional experience<br><b>OR</b><br><a href="#">BPS3012</a> Applied pharmaceutical science: from concept to market |                                                                                                                                                        |
| Year 4<br>Semester 1<br>February | <a href="#">CHE3161</a> Chemistry and chemical thermodynamics                                                                         | <a href="#">CHE3165</a> Separation processes                                       | <a href="#">ENG1013</a> Engineering smart systems                                                               | <a href="#">ENG2005</a> Advanced engineering mathematics                                                                                       |                                                                                                                                                        |
| Year 4<br>Semester 2<br>July     | <a href="#">CHE3166</a> Process design                                                                                                | <a href="#">CHE2161</a> Mechanics of fluids                                        | <a href="#">CHE3162</a> Process control                                                                         | <a href="#">CHE3164</a> Reaction engineering                                                                                                   |                                                                                                                                                        |
| Year 5<br>Semester 1<br>February | <a href="#">ENG4701</a> Final year project A                                                                                          | <a href="#">CHE4162</a> Particle technology                                        | CHE4161 Engineer in society<br><i>Replace with one Professional Practice domain unit</i>                        | <a href="#">CHE3167</a> Transport phenomena and numerical methods                                                                              | <a href="#">ENG0001</a> Continuous Professional Development (0 credit points)                                                                          |
| Year 5<br>Semester 2<br>July     | <a href="#">ENG4702</a> Final year project B                                                                                          | <a href="#">CHE4170</a> Design project                                             |                                                                                                                 | 6 cp Core - Level 3, 4 or 5 chemical engineering unit from this <a href="#">list</a> below                                                     |                                                                                                                                                        |
| Chemical engineering             |                                                                                                                                       | Formulation science                                                                |                                                                                                                 |                                                                                                                                                |                                                                                                                                                        |

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

*Due to overlapping contents with BPS1031/BPS1032, you replace CHM1011/CHM1051 (which is a core unit in the chemical engineering specialisation) 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:

- It is important that you follow the course map unit sequence, as units are designed to build on prior knowledge. Taking units out of sequence can disrupt your progression and cause delays due to semester offerings and enrolment rules.
- \* Foundation units: You enrol in the foundation units ENG1090 and/or PHS1001 if you have not completed the Australian VCE (Units 3 & 4) or equivalent Specialist mathematics and/or Physics with [the required study score](#).
- CHE4164 and CHE4165 – From 2025, the integrated industrial project opportunities become part of the ENG4701 and ENG4702 Final year projects.
- CHE4170 - You should not overload in the semester when undertaking this unit.
- Engineering minors are not available in the Engineering double degree courses.
- 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](#).