



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 16 January 2024

E3004 Bachelor of Engineering (Honours) and Bachelor of Biomedical Science Common First Year

| You do not have VCE Units 3 & 4 Specialist Maths >30 study score <u>and</u> VCE Units 3 & 4 Physics >25 study score: You must enrol in Foundation mathematics (ENG1090) <u>and</u> Foundation physics (PHS1001) | | | | | |
|---|---------------|---|---|---|--|
| Year | Period | Units | | | |
| 1 | Sem 1 Feb | ENG1012 Engineering design | PHS1001 Foundation physics <i>Corequisite: ENG1090 *</i> | ENG1090 Foundation mathematics | BMS1011 Biomedical chemistry |
| | Sem 2 July | ENG1011 Engineering methods | ENG1005 Engineering mathematics <i>Required: ENG1090 *</i> | ENG1014 Engineering numerical analysis <i>Corequisite: ENG1005</i> | BMS1062 Molecular biology |
| * If you require two foundation units, you will need to take the remaining core unit ENG1013 Engineering smart systems in Semester 1 of Year 2 as an overload, and increase the total credit points needed for the double by 6 points | | | | | |

| You do not have VCE Units 3 & 4 Specialist Maths >30 study score: You must enrol in Foundation mathematics (ENG1090) | | | | | |
|--|---------------|---|---|---|--|
| 1 | Sem 1 Feb | ENG1012 Engineering design | ENG1013 Engineering smart systems | ENG1090 Foundation mathematics | BMS1011 Biomedical chemistry |
| | Sem 2 July | ENG1011 Engineering methods | ENG1005 Engineering mathematics <i>Required: ENG1090 *</i> | ENG1014 Engineering numerical analysis <i>Corequisite: ENG1005</i> | BMS1062 Molecular biology |

| You do not have VCE Units 3 & 4 Physics >25 study score: You must enrol in Foundation physics (PHS1001) | | | | | |
|---|---------------|---|---|---|--|
| 1 | Sem 1 Feb | ENG1012 Engineering design | ENG1013 Engineering smart systems | PHS1001 Foundation physics <i>Required: ENG1090 *</i> | BMS1011 Biomedical chemistry |
| | Sem 2 July | ENG1011 Engineering methods | ENG1005 Engineering mathematics <i>Required: ENG1090 *</i> | ENG1014 Engineering numerical analysis <i>Corequisite: ENG1005</i> | BMS1062 Molecular biology |

| You have completed VCE Units 3 & 4 Physics >25 study score <u>and</u> VCE Units 3 and 4 Specialist Maths >30 study score: No foundation units are required | | | | | |
|--|---------------|---|---|---|--|
| 1 | Sem 1 Feb | ENG1011 Engineering methods | ENG1005 Engineering mathematics <i>Required: ENG1090 *</i> | ENG1014 Engineering numerical analysis <i>Corequisite: ENG1005</i> | BMS1011 Biomedical chemistry |
| | Sem 2 July | ENG1012 Engineering design | ENG1013 Engineering smart systems | First Year engineering breadth study | BMS1062 Molecular biology |

NOTE:

- * 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](#).
- The placement of units may be rearranged to support sequencing for double degree courses but care should be taken to ensure sequenced units are maintained in sequence.
- Each unit requires 12 hours of work per week. A full-time study week totals 48 hours. If you are unable to commit 48 hours of study due to external commitments, please speak with a course advisor about options to study less units per semester or take some units in the summer semester.
- For enrolment advice, please refer to the [Course advisers webpage](#).

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E3004 Bachelor of Engineering (Honours) and Bachelor of Biomedical Science Specialisation - Chemical Engineering

| | Bachelor of Chemical Engineering (Honours) | | Bachelor of Biomedical Science | | |
|----------------------------------|---|---|--|---|--|
| Year 1 Semester 1 February | Common First Year | | | BMS1011 Biomedical chemistry | |
| Year 1 Semester 2 July | | | | BMS1062 Molecular biology | |
| Year 2 Semester 1 February | ENG2005 Advanced engineering mathematics | CHM1011 Chemistry 1 or CHM1051 Chemistry 1 advanced | BMS1031 Medical biophysics | BMS1021 Cells, tissues and organisms | If two foundation units are required then overload is required for ENG1013 Engineering smart systems |
| Year 2 Semester 2 July | CHE2162 Material and energy balances | CHE2161 Mechanics of fluids | BMS1042 Public health and preventive medicine | BMS1052 Human neurobiology | |
| Year 3 Semester 1 February | CHE2164 Thermodynamics 1 | BMS2021 Human molecular biology | BMS2011 Structure of the human body | BMS2031 Body systems | |
| Year 3 Semester 2 July | CHE2163 Heat and mass transfer | BMS2042 Human genetics | BMS2052 Microbes in health and diseases | BMS2062 Introduction to bioinformatics | |
| Year 4 Semester 1 February | CHE3161 Chemistry and chemical thermodynamics | CHE3165 Separation processes | BMS3031 Molecular mechanisms of disease | | MAP1001 Allies in Indigenous health (0 credit point – To be taken concurrently with BMS3031) |
| Year 4 Semester 2 July | CHE3166 Process design | CHE3164 Reaction engineering | BMS3052 Biomedical basis and epidemiology of human disease | | |
| Year 5 Semester 1 February | ENG4701 Final year project A | CHE4162 Particle technology | Complete one Professional Practice domain unit | CHE3167 Transport phenomena and numerical methods | ENG0001 Continuous Professional Development (0 credit points) |
| Year 5 Semester 2 July | ENG4702 Final year project B | CHE4170 Design project (12 points) | | CHE3162 Process control | |

NOTE:

- **CHM1011 or CHM1051** - If you have completed either unit as a First Year technical elective, you must replace the core with another unit from the chemical engineering technical electives list or from one of the [engineering minors](#). The replacement unit must be of the same level as the core unit or higher.
- [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.
- The placement of units may be rearranged to support sequencing for double degree courses but care should be taken to ensure sequenced units are maintained in sequence.
- 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](#).
- Each unit requires 12 hours of work per week. A full-time study week totals 48 hours. If you are unable to commit 48 hours of study due to external commitments, please speak with a course advisor about options to study less units per semester or take some units in the summer semester.
- For enrolment advice, please refer to the [Course advisers webpage](#).

Course progression maps for 2024 commencing students

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E3004 Bachelor of Engineering (Honours) and Bachelor of Biomedical Science Specialisation - Civil Engineering

| | Bachelor of Civil Engineering (Honours) | | Bachelor of Biomedical Science | | |
|----------------------------------|--|--|--|--|--|
| Year 1 Semester 1 February | Common First Year | | | BMS1011 Biomedical chemistry | |
| Year 1 Semester 2 July | | | | BMS1062 Molecular biology | |
| Year 2 Semester 1 February | CIV2282 Transport and traffic engineering | CIV2206 Structural mechanics | BMS1031 Medical biophysics | BMS1021 Cells, tissues and organisms | If two foundation units are required then overload is required for ENG1013 Engineering smart systems |
| Year 2 Semester 2 July | CIV2242 Geomechanics 1 | ENG2005 Advanced engineering mathematics | BMS1042 Public health and preventive medicine | BMS1052 Human neurobiology | |
| Year 3 Semester 1 February | CIV2263 Water systems | BMS2021 Human molecular biology | BMS2011 Structure of the human body | BMS2031 Body systems | |
| Year 3 Semester 2 July | CIV2235 Structural materials | BMS2042 Human genetics | BMS2052 Microbes in health and diseases | BMS2062 Introduction to bioinformatics | |
| Year 4 Semester 1 February | Complete one Professional Practice domain unit | CIV3294 Structural design | BMS3031 Molecular mechanisms of disease | | MAP1001 Allies in Indigenous health (0 credit point – To be taken concurrently with BMS3031) |
| Year 4 Semester 2 July | CIV3247 Geomechanics 2 | CIV3283 Road engineering | BMS3052 Biomedical basis and epidemiology of human disease | | |
| Year 5 Semester 1 February | ENG4701 Final year project A | CIV3285 Engineering hydrology | CIV4249 Foundation engineering | CIV4280 Bridge design and assessment | ENG0001 Continuous Professional Development (0 credit points) |
| Year 5 Semester 2 July | ENG4702 Final year project B | CIV4212 Civil and environmental engineering practice | CIV3221 Building structures and technology | CIV4288 Water treatment | |

NOTE:

- The placement of units may be rearranged to support sequencing for double degree courses but care should be taken to ensure sequenced units are maintained in sequence.
- 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](#).
- Each unit requires 12 hours of work per week. A full-time study week totals 48 hours. If you are unable to commit 48 hours of study due to external commitments, please speak with a course advisor about options to study less units per semester or take some units in the summer semester.
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E3004 Bachelor of Engineering (Honours) and Bachelor of Biomedical Science Specialisation - Electrical and Computer Systems Engineering

| | Bachelor of Electrical and Computer Systems Engineering (Honours) | | Bachelor of Biomedical Science | | |
|-------------------------------|---|---|--|--|--|
| Year 1 Semester 1 February | Common First Year | | | BMS1011 Biomedical chemistry | |
| Year 1 Semester 2 July | | | | BMS1062 Molecular biology | |
| Year 2 Semester 1 February | ENG2005 Advanced engineering mathematics | ECE2071 Computer organisation and programming | BMS1031 Medical biophysics | BMS1021 Cells, tissues and organisms | If two foundation units are required then overload is required for ENG1013 Engineering smart systems |
| Year 2 Semester 2 July | ECE2191 Probability and AI for engineers | ECE2072 Digital systems | BMS1042 Public health and preventive medicine | BMS1052 Human neurobiology | |
| Year 3 Semester 1 February | ECE2131 Electrical circuits | BMS2021 Human molecular biology | BMS2011 Structure of the human body | BMS2031 Body systems | |
| Year 3 Semester 2 July | ECE2111 Signals and systems | BMS2042 Human genetics | BMS2052 Microbes in health and diseases | BMS2062 Introduction to bioinformatics | |
| Year 4 Semester 1 February | ECE3073 Computer systems | ECE3141 Information and networks | BMS3031 Molecular mechanisms of disease | | MAP1001 Allies in Indigenous health (0 credit point – To be taken concurrently with BMS3031) |
| Year 4 Semester 2 July | ECE4132 Control system design | ECE3121 Engineering electromagnetics | BMS3052 Biomedical basis and epidemiology of human disease | | |
| Year 5 Semester 1 February | ENG4701 Final year project A | ECE3161 Analogue electronics | ECE3051 Electrical energy systems | Level 4 or 5 ECE-coded core elective | ENG0001 Continuous Professional Development (0 credit points) |
| Year 5 Semester 2 July | ENG4702 Final year project B | ECE4191 Engineering integrated design | Complete one Professional Practice domain unit | Level 4 or 5 ECE-coded core elective | |

NOTE:

- [ECE2072](#) - If you have completed the unit as a First Year technical elective, you must replace the core with another unit from the electrical and computer systems engineering technical electives list or from one of the [engineering minors](#). The replacement unit must be of the same level as the core unit or higher.
- The placement of units may be rearranged to support sequencing for double degree courses but care should be taken to ensure sequenced units are maintained in sequence.
- 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](#).
- Each unit requires 12 hours of work per week. A full-time study week totals 48 hours. If you are unable to commit 48 hours of study due to external commitments, please speak with a course advisor about options to study less units per semester or take some units in the summer semester.
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E3004 Bachelor of Engineering (Honours) and Bachelor of Biomedical Science Specialisation - Materials Engineering

| | Bachelor of Materials Engineering (Honours) | | Bachelor of Biomedical Science | | |
|----------------------------------|--|---|---|--|--|
| Year 1 Semester 1 February | Common First Year | | | BMS1011 Biomedical chemistry | |
| Year 1 Semester 2 July | | | | BMS1062 Molecular biology | |
| Year 2 Semester 1 February | MTE2101 Atomic- scale structure of materials | MTE2103 Mechanical properties of materials | BMS1031 Medical biophysics | BMS1021 Cells, tissues and organisms | If two foundation units are required then overload is required for ENG1013 Engineering smart systems |
| Year 2 Semester 2 July | MTE2201 Polymers | ENG2005 Advanced engineering mathematics | BMS1042 Public health and preventive medicine | BMS1052 Human neurobiology | |
| Year 3 Semester 1 February | MTE2102 Phase equilibria and phase transformations | BMS2021 Human molecular biology | BMS2011 Structure of the human body | BMS2031 Body systems | |
| Year 3 Semester 2 July | MTE2202 Functional materials 1 | BMS2042 Human genetics | BMS2052 Microbes in health and diseases | BMS2062 Introduction to bioinformatics | |
| Year 4 Semester 1 February | MTE3101 Materials in a complex world 1: People, projects and data | MTE3102 Plasticity of metals and alloys | BMS3031 Molecular mechanisms of disease | | MAP1001 Allies in Indigenous health (0 credit point – To be taken concurrently with BMS3031) |
| Year 4 Semester 2 July | MTE3201 Materials in a complex world 2: Characterisation, identification and selection | MTE3203 Introduction to ceramics: Properties, processing and applications | BMS3052 Biomedical basis and epidemiology of human disease | | |
| Year 5 Semester 1 February | ENG4701 Final year project A | MTE4101 Integrated design project | MTE4102 Advanced materials processing and manufacturing | MTE3103 Materials life cycle | ENG0001 Continuous Professional Development (0 credit points) |
| Year 5 Semester 2 July | ENG4702 Final year project B | Complete one Professional Practice domain unit | Level 4 or 5 MTE-coded materials engineering technical elective | MTE3202 Functional materials 2 | |

NOTE:

- The placement of units may be rearranged to support sequencing for double degree courses but care should be taken to ensure sequenced units are maintained in sequence.
- 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](#).
- Each unit requires 12 hours of work per week. A full-time study week totals 48 hours. If you are unable to commit 48 hours of study due to external commitments, please speak with a course advisor about options to study less units per semester or take some units in the summer semester.
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E3004 Bachelor of Engineering (Honours) and Bachelor of Biomedical Science Specialisation - Mechanical Engineering

| | Bachelor of Mechanical Engineering (Honours) | | Bachelor of Biomedical Science | | |
|----------------------------------|--|--|--|--|--|
| Year 1 Semester 1 February | Common First Year | | | BMS1011 Biomedical chemistry | |
| Year 1 Semester 2 July | | | | BMS1062 Molecular biology | |
| Year 2 Semester 1 February | MEC2403 Mechanics of materials | MEC2401 Dynamics 1 | BMS1031 Medical biophysics | BMS1021 Cells, tissues and organisms | If two foundation units are required then overload is required for ENG1013 Engineering smart systems |
| Year 2 Semester 2 July | MEC2404 Mechanics of fluids | ENG2005 Advanced engineering mathematics | BMS1042 Public health and preventive medicine | BMS1052 Human neurobiology | |
| Year 3 Semester 1 February | MEC2402 Design methods | BMS2021 Human molecular biology | BMS2011 Structure of the human body | BMS2031 Body systems | |
| Year 3 Semester 2 July | MEC2405 Thermodynamics | BMS2042 Human genetics | BMS2052 Microbes in health and diseases | BMS2062 Introduction to bioinformatics | |
| Year 4 Semester 1 February | MEC3451 Fluid mechanics 2 | MEC3456 Engineering computational analysis | BMS3031 Molecular mechanisms of disease | | MAP1001 Allies in Indigenous health (0 credit point – To be taken concurrently with BMS3031) |
| Year 4 Semester 2 July | MEC3416 Machine design | MEC3457 Systems and control | BMS3052 Biomedical basis and epidemiology of human disease | | |
| Year 5 Semester 1 February | ENG4701 Final year project A | MEC4408 Thermodynamics and heat transfer | MEC3455 Solid mechanics | Complete one Professional Practice domain unit | ENG0001 Continuous Professional Development (0 credit points) |
| Year 5 Semester 2 July | ENG4702 Final year project B | MEC4426 Computer-aided design | MEC3453 Dynamics 2 | MEC4407 Design project | |

NOTE:

- **MEC2404** - If you have completed MEC2404 as a First Year technical elective, you must replace the core with another unit from the mechanical engineering technical electives list or from one of the [engineering minors](#). The replacement unit must be of the same level as the core unit or higher.
- The placement of units may be rearranged to support sequencing for double degree courses but care should be taken to ensure sequenced units are maintained in sequence.
- 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](#).
- Each unit requires 12 hours of work per week. A full-time study week totals 48 hours. If you are unable to commit 48 hours of study due to external commitments, please speak with a course advisor about options to study less units per semester or take some units in the summer semester.
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