

Course progression map for 2023 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: 18 December 2023

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 technical elective	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.
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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		
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	CHE4161 Engineer in society	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.
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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	CIV4286 Project management for civil engineers	CIV3294 Structural design	BMS3031 Molecular mechanisms of disease		
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.
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- 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 models in engineering	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		
Year 4 Semester 2 July	ECE4132 Control system design	ECE3121 Engineering electromagnetics <small>Replace ECE3121 with ECE3122 in 2024</small>	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	ECE4099 Professional Practice	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		
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	MTE4201 Materials in a complex world 3: Impact in society	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		
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	MEC4404 Professional practice	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.
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