MONASH University

Course progression map for 2018 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. The map is subject to updates. Update version: 18 December 2023

E3004 Bachelor of Engineering (Honours) and Bachelor of Biomedical Science

Common first year

If no foundation units are required:					
Year	**Sem**	**Units**			
1	1	ENG1001 Engineering design: lighter, faster, stronger	ENG1005 Engineering mathematics	ENG1060 Computing for engineers	BMS1011 Biomedical chemistry
	2	ENG1002 Engineering design: cleaner, safer, smarter	ENG1003 Engineering mobile apps	First year engineering elective unit	BMS1052 Human neurobiology

If you need to enrol in foundation physics and maths*:					
1	1	ENG1002 Engineering design: cleaner, safer, smarter	PHS1001 Foundation physics	ENG1090 Foundation mathematics	BMS1011 Biomedical chemistry
	2	ENG1001 Engineering design: lighter, faster, stronger	ENG1005 Engineering mathematics	ENG1060 Computing for engineers	BMS1052 Human neurobiology
* Double degree students requiring two foundation units will need to take the remaining core unit ENG1003 Engineering mobile apps in semester one of year two as an overload, and increase the total credit points needed for the double by 6 points. You cannot swap the semester of any of the units.					

If you need to enrol in foundation maths:					
1	1	ENG1002 Engineering design: cleaner, safer, smarter	ENG1003 Engineering mobile apps	ENG1090 Foundation mathematics	BMS1011 Biomedical chemistry
	2	ENG1001 Engineering design: lighter, faster, stronger	ENG1005 Engineering mathematics	ENG1060 Computing for engineers	BMS1052 Human neurobiology

If you need to enrol in foundation physics:					
1	1	ENG1002 Engineering design: cleaner, safer, smarter	ENG1003 Engineering mobile apps	PHS1001 Foundation physics	BMS1011 Biomedical chemistry
	2	ENG1001 Engineering design: lighter, faster, stronger	ENG1005 Engineering mathematics	ENG1060 Computing for engineers	BMS1052 Human neurobiology

Note:

- You cannot swap the semesters of any of the units.
- 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 2018 Handbook* –http://www.monash.edu.au/pubs/2018handbooks/maps/map-e3004.pdf
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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	**Common first year**			BMS1011 Biomedical chemistry	
YEAR 1 Semester 2				BMS1052 Human neurobiology	
YEAR 2 Semester 1	ENG2005 Advanced engineering mathematics	CHM1011 Chemistry 1 (if not already completed at level 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 ENG1003
YEAR 2 Semester 2	CHE2162 Material and energy balances	CHE2161 Mechanics of fluids	BMS1042 Public health and preventative medicine	BMS1062 Molecular biology	
YEAR 3 Semester 1	CHE2164 Thermodynamics 1	BMS2021 Human molecular biology	BMS2011 Structure of the human body	BMS2031 Body systems	
YEAR 3 Semester 2	CHE2163 Heat and mass transfer	BMS2042 Human genetics	BMS2052 Microbes in health and diseases	BMS2062 Introduction to bioinformatics	
YEAR 4 Semester 1	CHE3161 Chemistry and chemical thermodynamics	CHE3165 Separation processes	BMS3031 Molecular mechanisms of disease		
YEAR 4 Semester 2	CHE3166 Process design	CHE3164 Reaction engineering	BMS3052 Biomedical basis and epidemiology of human disease		
YEAR 5 Semester 1 **OR**	CHE4164 Integrated industrial project (18 points) For selected students taking a period of integrated industrial training in the first semester of 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)
YEAR 5 Semester 1	CHE4180 Chemical engineering project Replace with ENG4701. See footnote	CHE4162 Particle technology	CHE4161 Engineer in society	CHE3167 Transport phenomena and numerical methods	
YEAR 5 Semester 2	ENG4702 Final year project B See footnote	CHE4170 Design project (12 points)		CHE3162 Process control	

Note:

- From 2021, **ENG4701 and ENG4702 will replace the 12 credit point 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.
- Students should not overload in the semester of undertaking CHE4170.
- 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.

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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	**Common first year**			BMS1011 Biomedical chemistry	
YEAR 1 Semester 2				BMS1052 Human neurobiology	
YEAR 2 Semester 1	CIV2225 Design of steel and timber structures Replace with CIV2235 from 2021	CIV2206 Mechanics of solids Unit title change from 2019	BMS1031 Medical Biophysics	BMS1021 Cells, tissues and organisms	If two foundation units are required then overload is required for ENG1003
YEAR 2 Semester 2	CIV2242 Geomechanics 1	ENG2005 Advanced engineering mathematics	BMS1042 Public health and preventative medicine	BMS1062 Molecular biology	
YEAR 3 Semester 1	CIV2263 Water systems	BMS2021 Human molecular biology	BMS2011 Structure of the human body	BMS2031 Body systems	
YEAR 3 Semester 2	CIV2282 Transport and traffic engineering Sem 1 offering from 2021	BMS2042 Human genetics	BMS2052 Microbes in health and diseases	BMS2062 Introduction to bioinformatics	
YEAR 4 Semester 1	CIV3248 Groundwater and environmental geomechanics	CIV3284 Design of concrete and masonry structures Replace with CIV3294 from 2022	BMS3031 Molecular mechanisms of disease		
YEAR 4 Semester 2	CIV3247 Geomechanics 2	CIV3204 Engineering investigation See footnote	BMS3052 Biomedical basis and epidemiology of human disease		
YEAR 5 Semester 1	CIV4210 Project A Replace with ENG4701 from 2022. See footnote.	CIV3285 Engineering hydrology	CIV4286 Project management for civil engineers	CIV4280 Bridge design and assessment	ENG0001 Continuous Professional Development (0 credit points)
YEAR 5 Semester 2	CIV4287 Road engineering Replace with ENG4702 from 2022. See footnote.	CIV3221 Building structures and technology	CIV4212 Civil and environmental engineering practice	CIV4288 Water treatment	

Note:

- **FROM 2022:** Following a recent advice by Engineers Australia, you must complete 12 CP of a final year project in order to meet professional accreditation requirements. Please seek course advice from the Student Services at the Faculty of Engineering.
- **CIV4210** – If you are course-completing in 2022/S1, complete CIV4210 (for 6CP FYP) or CIV4211 (if undertaking 12CP FYP). Otherwise, replace CIV4210 with ENG4701 from 2022.
- **CIV3204** – If you have not completed CIV3204 by 2021, replace CIV3204 with CIV3283 Road engineering from 2022.
- **CIV4287** – If you have completed CIV3204 but not CIV4287 by 2021, replace CIV4287 with ENG4702 from 2022. CIV3283 is highly recommended to be taken as a level 3 civil engineering technical elective.
- 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.
- 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.

Source: *Monash University 2018 Handbook* –http://www.monash.edu.au/pubs/2018handbooks/maps/map-e3004.pdf
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Course progression map for 2018 commencing students

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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	**Common first year**			BMS1011 Biomedical chemistry	
YEAR 1 Semester 2				BMS1052 Human neurobiology	
YEAR 2 Semester 1	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 ENG1003 Engineering mobile apps
YEAR 2 Semester 2	ECE2191 Probability models in engineering	ECE2072 Digital systems	BMS1042 Public health and preventative medicine	BMS1062 Molecular biology	
YEAR 3 Semester 1	ECE2131 Electrical circuits	BMS2021 Human molecular biology	BMS2011 Structure of the human body	BMS2031 Body systems	
YEAR 3 Semester 2	ECE2111 Signals and systems	BMS2042 Human genetics	BMS2052 Microbes in health and diseases	BMS2062 Introduction to bioinformatics	
YEAR 4 Semester 1	ECE3073 Computer systems	ECE3141 Information and networks	BMS3031 Molecular mechanisms of disease		
YEAR 4 Semester 2	ECE3121 Engineering electromagnetics Replace ECE3121 with ECE3122 in 2024	ECE3091 Engineering design Replace with ECE4191 from 2022. See footnote	BMS3052 Biomedical basis and epidemiology of human disease		
YEAR 5 Semester 1	ECE4094 Project A Replace with ENG4701 from 2021/22	ECE3161 Analogue electronics	Level 4 or 5 ECE-coded core elective	ECE3051 Electrical energy systems	ENG0001 Continuous Professional Development (0 credit points)
YEAR 5 Semester 2	ECE4095 Project B Replace with ENG4702 from 2022	ECE4132 Control system design**	Level 4 or 5 ECE-coded core elective	ECE4099 Professional Practice	

Note:

- **ECE3091** – Replace with ECE4191 if you have not completed ECE3091 by 2021. ECE4191 should be undertaken in your final year of study by swapping placement on the course map with ECE4132 or the level 4 ECSE technical elective.
- 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..

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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	**Common first year**			BMS1011 Biomedical chemistry	
YEAR 1 Semester 2				BMS1052 Human neurobiology	
YEAR 2 Semester 1	MTE2541 Crystal structures, thermodynamics and phase equilibria Replace with MTE2101 from 2021. See footnote 1	MTE2544 Functional materials Replace with MTE2202 from 2021 (Semester 2 offering)	BMS1031 Medical Biophysics	BMS1021 Cells, tissues and organisms	If two foundation units are required then overload is required for ENG1003 Engineering mobile apps
YEAR 2 Semester 2	MTE2542 Microstructural development Replace with MTE2102 from 2021 (Semester 1 offering)	ENG2005 Advanced engineering maths	BMS1042 Public health and preventative medicine	BMS1062 Molecular biology	
YEAR 3 Semester 1	MTE2546 Mechanics of materials Replace with MTE2103 from 2021.	BMS2021 Human molecular biology	BMS2011 Structure of the human body	BMS2031 Body systems	
YEAR 3 Semester 2	MTE2545 Polymers and ceramics 1 Replace with MTE2201 from 2021. See footnote 2	BMS2042 Human genetics	BMS2052 Microbes in health and diseases	BMS2062 Introduction to bioinformatics	
YEAR 4 Semester 1	MTE3543 Microstructure to applications: The mechanics of materials *See footnote*	MTE3542 Microstructural design in structural materials Replace with MTE3102 from 2022.	BMS3031 Molecular mechanisms of disease		
YEAR 4 Semester 2	MTE3547 Materials characterisation and modelling See footnote 1	MTE3546 Polymers and ceramics 2 Replace with MTE3203 from 2022. See footnote 2	BMS3052 Biomedical basis and epidemiology of human disease		
YEAR 5 Semester 1	MTE4525 Project 1 Replace with ENG4701 from 2021/22	MTE3541 Materials durability Replace with MTE3103 from 2022.	MTE4572 Polymer and composite processing and engineering See footnote 3	MTE4571 Materials engineering design and practice See footnote 3	ENG0001 Continuous Professional Development (0 credit points)
YEAR 5 Semester 2	MTE4526 Project 2 Replace with ENG4702 from 2022	MTE3545 Functional materials and devices Replace with MTE3202 from 2022.	MTE4573 Processing and engineering of metals and ceramics See footnote 3	Level 4 or 5 MTE-coded materials engineering core elective	

Note:

- **MINORS AND ELECTIVES LIST is located on the Faculty's current student course information webpage.**

1. **MTE2101 and MTE3101 will be replacing MTE2541 and MTE3547** respectively. If you have completed MTE2541 prior to 2021, you must complete MTE3547 (last offering 2021). Otherwise, complete MTE2101 and MTE3101 combination.
2. **MTE2201 and MTE3203 will be replacing MTE2545 and MTE3546** respectively. If you have completed MTE2545 prior to 2021, you must complete MTE3546 (last offering 2021). Otherwise, complete MTE2201 and MTE3203 combination.
3. You must complete the **(MTE3543+MTE4571+MTE4572+MTE4573)** combination (last offerings 2022). Otherwise, complete **(MTE3201+MTE4101+MTE4102+MTE4201)** combination.

- 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.
- 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.
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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	**Common first year**			BMS1011 Biomedical chemistry	
YEAR 1 Semester 2				BMS1052 Human neurobiology	
YEAR 2 Semester 1	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 ENG1003 Engineering mobile apps
YEAR 2 Semester 2	MEC2404 Mechanics of fluids	ENG2005 Advanced engineering mathematics	BMS1042 Public health and preventative medicine	BMS1062 Molecular biology	
YEAR 3 Semester 1	MEC2402 Engineering design 1 *Unit title change in 2021*	BMS2021 Human molecular biology	BMS2011 Structure of the human body	BMS2031 Body systems	
YEAR 3 Semester 2	MEC2405 Thermodynamics	BMS2042 Human genetics	BMS2052 Microbes in health and diseases	BMS2062 Introduction to bioinformatics	
YEAR 4 Semester 1	MEC3451 Fluid mechanics 2	MEC3456 Engineering computational analysis	BMS3031 Molecular mechanisms of disease		
YEAR 4 Semester 2	MEC3416 Engineering design 2 *Unit title change in 2021*	MEC3457 Systems and control	BMS3052 Biomedical basis and epidemiology of human disease		
YEAR 5 Semester 1	MEC4401 Final year project Replace with ENG4701 from 2021/22	MEC4408 Thermodynamics and heat transfer	MEC3455 Solid Mechanics	MEC4404 Professional practice	ENG0001 Continuous Professional Development (0 credit points)
YEAR 5 Semester 2	MEC4402 Final year project – Thesis Replace with ENG4702 from 2022	MEC4426 Computer-aided design	MEC3453 Dynamics 2	MEC4407 Engineering design 3 *Unit title change from 2021*	

Note:

- 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.
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