

Important Information

It is your responsibility to ensure that you complete all the requirements for each component of this dual program in order to graduate with both degrees. The following information is designed to help you plan your enrolment to meet this goal.

Program Requirements

The Program Rules outline the requirements to complete the dual program and should be read in conjunction with the course list for each component of the dual program. The program rules are available on <u>UQ's Programs and Courses</u> website for the program.

Program Guidelines

Bachelor of Engineering (Honours) (BE(Hons)) component:

- Students without Queensland Senior Maths C should complete MATH1050 before MATH1051.
- Students must complete a specialisation in *chemical engineering*.
- All common core and compulsory courses must be counted towards the BE(Hons) component of the dual program and substituted in the BBiotech course list by a course at the same level or higher.
- First Year BE(Hons) students can find further program planning information via the Faculty current student resources page:
 - **Dual Degree specific information:** <u>https://www.eait.uq.edu.au/current-students/manage-your-program/bachelor-engineering-honours/dual-degree-program-structure</u>
 - More general program planning information: <u>https://www.eait.uq.edu.au/current-students/information-new-students/get-started-bachelor-engineering-honours</u>
- BE(Hons) students should discuss their enrolment plan with an academic adviser. The list of academic advisers is available at: <u>https://www.eait.uq.edu.au/current-students/manage-your-program/academic-advice</u>

Bachelor of Biotechnology (BBiotech) component:

- Students must complete an extended major.
- Where a BBiotech extended major requires BIOL1040, CHEM1200 or FOOD1001 as a prerequisite course, it
 must be counted towards the BE(Hons) component as either a program elective within the specialisation or a
 chemical engineering breadth elective.

Cross-listed Courses

A course can only count towards one dual program component. If the course is compulsory in one program, it must be counted towards that program component and you should select another course from the other course list at the same level or higher. If a course is compulsory in both program's plans, you may select which program it will count towards, and follow the special rules that outline how to select another course at the same level or higher.

Please check the special rules for the dual program as they may outline specific requirements for course substitutions.

Regardless of any possible cross-listing between programs, to meet the program requirements for the BBiotech component of your dual program the extended major must include 12 units of courses level 3 or higher taken from and counting only towards that extended major's course list.

Selecting Plans in mySI-net

A plan is a prescribed combination of courses within a program being either a field of study, major, extended major, specialisation, minor or extended minor.

Ensure the plans for your program are correctly listed in <u>mySI-net</u>. If you require assistance selecting your plan(s), follow these <u>instructions</u>.



Course Scheduling

This planner is intended as a guide only and is based on current scheduling of courses. Students should note that scheduling can change from year to year. You are advised to check the scheduling for the current year and contact the relevant Faculty for advice if course scheduling has changed.

Exiting Early

Students exiting early with one component of a dual degree must complete the single degree requirements of that component. Students will then be required to follow the single degree rules to complete the remaining component from that dual degree.

Global Experience

If you are planning on completing an overseas exchange, you may have to amend this plan. Students who would like an exchange experience in their program are encouraged to seek advice early in their program and be aware of the exchange deadlines: <u>https://employability.uq.edu.au/global-experiences</u>.

Require Further Assistance?

If you require assistance planning your program or have concerns about meeting program requirements, contact the relevant Faculty for advice:

Program	Faculty	Contact Information
Bachelor of Engineering (Honours)	Faculty of Engineering, Architecture and Information Technology	enquiries@eait.uq.edu.au
Bachelor of Biotechnology	Faculty of Science	enquire@science.uq.edu.au

Notes:

If you are planning to continue and pursue a degree in medicine please make an academic appointment to further discuss your study plan and pathway to medicine.

Study Planners

- 1. <u>Semester 1 Commencement | Full Time Study Planner BBiotech component Agricultural Biotechnology</u> <u>Extended Major</u>
- 2. <u>Semester 1 Commencement | Full Time Study Planner BBiotech component Chemical and Nano</u> <u>Biotechnology Extended Major</u>
- Semester 1 Commencement | Full Time Study Planner BBiotech component Medical Biotechnology Extended Major
- 4. <u>Semester 1 Commencement | Full Time Study Planner BBiotech component Molecular and Microbial</u> <u>Biotechnology Extended Major</u>
- 5. <u>Semester 1 Commencement | Full Time Study Planner BBiotech component Synthetic Biology and Industrial</u> <u>Biotechnology Extended Major</u>
- 6. <u>Semester 2 Commencement | Full Time Study Planner BBiotech component Agricultural Biotechnology</u> <u>Extended Major</u>
- 7. <u>Semester 2 Commencement | Full Time Study Planner BBiotech component Chemical and Nano</u> <u>Biotechnology Extended Major</u>
- 8. <u>Semester 2 Commencement | Full Time Study Planner BBiotech component Medical Biotechnology Extended</u> <u>Major</u>
- 9. <u>Semester 2 Commencement | Full Time Study Planner BBiotech component Molecular and Microbial</u> <u>Biotechnology Extended Major</u>
- 10. <u>Semester 2 Commencement | Full Time Study Planner BBiotech component Synthetic Biology and Industrial</u> <u>Biotechnology Extended Major</u>



		BACHELO	R OF ENGINEERING (HONOU	IRS)		HELOR OF BIOTECHNOLOGY Agricultural Biotechnology	
		Course Code	Course Name	Units	Course Code	Course Name	Units
		ENGG1100	Professional Engineering	2			
	er 1	MATH1051 or	Calculus & Linear Algebra I or	2			
	este	MATH1071	Advanced Calculus & Linear Algebra I	_			
	Semester	ENGG1500	Thermodynamics: Energy and the Environment	2			
Year 1		BIOL1020	Genes, Cells & Evolution	2			
⊁		ENGG1001	Programming for Engineers	2			
	ter 2	MATH1052	Multivariate Calculus & Ordinary Differential Equations				
	Semester	or MATH1072	or Advanced Multivariate Calculus &	2	BIOT2002	Introduction to Biotechnology	2
	Se	MATHI0/2	Ordinary Differential Equations				
		CHEM1100	Chemistry 1	2			
	- -	CHEE2001	Process Principles	2			
	Semester	CHEE2003	Fluid & Particle Mechanics	2	BIOC2000	Biochemistry & Molecular Biology	2
7	Ň	CHEE2010	Engineering Investigation & Statistical Analysis	2			
Year		CHEE2020	Process Equipment and Control Systems	2			
	ester 2	CHEE2030	Chemical Thermodynamics	2			
	Semester	CHEE2040	Heat and Mass Transfer	2			
			Chemical Engineering Program Elective ³	2			
	ster 1	CHEE3004	Unit Operations	2	BIOL1030	Global Challenges in Biology	2
е С	Semester	CHEM2056	Physical Chemistry for Engineering	2	Level 2 Course	Level 2 course from extended major list (BIOL2200, CHEM2003, FOOD2000)	2
Year	er 2	CHEE3007	Process Modelling & Dynamics	2	BIOL2202	Genetics	2
>	Semester		Chemical Engineering Breadth Elective or Chemical Engineering Advanced Electives or Chemical Engineering Research Electives ³	2	Level 2 Course	Level 2 course from extended major list (BIOL2203, MICR2000, MICR2001)	2



	Semester 1	CHEE3005	Reaction Engineering	2	BIOT3009	Quality Management Systems in Biotechnology	2
Year 4	Sem		Chemical Engineering Advanced Electives or Chemical Engineering Research Electives	2	Level 3 Course	Level 3 course from extended major list (BIOL3213 ¹ , BIOL3303 ¹ , FOOD3023 ¹)	2
×		CHEE3020	Process Systems Analysis	2	BIOT3004	Commercialisation of Biotechnology Products	2
	Semester		Chemical Engineering Advanced Electives or Chemical Engineering Research Electives	2	Level 3 Course	Level 3 course from extended major list (BIOL3011 ² , BIOL3320 ² , FOOD3008 ²)	2
	ster 1	CHEE4002	Risk in Process Industries	2	Level 3 Course	Level 3 course from extended major list (BIOL3213 ¹ , BIOL3303 ¹ , FOOD3023 ¹ , BIOL3003 ² , BIOL3201 ² , BIOL3209 ²)	2
.5	Semester	ENGG4901	Professional Practice and the Business Environment	2	Level 3 Course	Level 3 course from extended major list (BIOL3213 ¹ , BIOL3303 ¹ , FOOD3023 ¹ , BIOL3003 ² , BIOL3201 ² , BIOL3209 ²)	2
Year	2	CHEE4001	Process Engineering Design Project	4			
	Semester		Chemical Engineering Advanced Electives or Chemical Engineering Research Electives	2			
	Ň		Chemical Engineering Advanced Electives or Chemical Engineering Research Electives	2			

¹ Complete at least 2 units from BIOL3213, BIOL3303 and FOOD3023

² Complete at least 2 units from BIOL3003, BIOL3011, BIOL3201, BIOL3209, BIOL3320 and FOOD3008

³ Students should complete either BIOL1040 in Year 2 Sem 2 or FOOD1001 in Year 3 Sem 1, towards the BE(Hons) component as either a program elective or breadth elective to satisfy the BBiotech pre-requisites.

* Courses chosen in the engineering component of the first year will depend on whether it is necessary to complete MATH1050 prior to MATH1051. All students undertaking the Chemical Engineering Specialisation must complete ENGG1001 (or CSSE1001), MATH1051 (or MATH1071), MATH1052 (or MATH1072), and ENGG1500. Refer to <u>https://www.eait.uq.edu.au/current-students/manage-your-program/bachelor-</u> <u>engineering-honours/dual-degree-program-structure</u> for further details about how to choose these courses.



		BACHELO	R OF ENGINEERING (HONOL	IRS)		HELOR OF BIOTECHNOLOGY	
		Course Code	Course Name	Units	Course Code	Course Name	Units
		ENGG1100	Professional Engineering	2			
	ter 1	MATH1051 or MATH1071	Calculus & Linear Algebra I or Advanced Calculus & Linear Algebra I	2			
	Semester	ENGG1500	Thermodynamics: Energy and the Environment	2			
Year 1		BIOE1001 or BIOL1020	Principles of Biomedical & Bioprocess Engineering or Genes, Cells & Evolution	2			
		ENGG1001	Programming for Engineers	2			
	Semester 2	MATH1052 or MATH1072	Multivariate Calculus & Ordinary Differential Equations or Advanced Multivariate Calculus & Ordinary Differential Equations	2	BIOT2002	Issues in Biotechnology	2
		CHEM1100	Chemistry 1	2			
	r 1	CHEE2001	Process Principles	2			
	Semester 1	CHEE2003	Fluid & Particle Mechanics	2	CHEM1200	Chemistry 2	2
2	ŵ	CHEE2010	Engineering Investigation & Statistical Analysis	2			
Year 2		CHEE2020	Process Equipment and Control Systems	2			
	ster 2	CHEE2030	Chemical Thermodynamics	2			
	Semest	CHEE2040	Heat and Mass Transfer	2			
			Chemical Engineering Program Elective	2			
	r 1				BIOC2000	Biochemistry & Molecular Biology	2
	Semester	CHEM2056	Physical Chemistry for Engineering	2	CHEM2050	Intermediate Chemistry 1	2
ဗ					CHEM2054	Experimental Chemistry 1	2
Year	5	CHEE3007	Process Modelling & Dynamics	2			
	Semester 2	CHEE3020	Process Systems Analysis	2	CHEM2060	Intermediate Chemistry 2	2
	Sen		Chemical Engineering Breadth Elective or Chemical Engineering Advanced Electives or Chemical Engineering Research Electives	2			2



	ster 1	CHEE3004	Unit Operations	2	BIOT3009	Quality Management Systems in Biotechnology	2
ear 4	Semester	CHEE3005	Reaction Engineering	2	Level 3 Course	Level 3 course from extended major list (CHEM3001 ¹ , CHEM3010 ¹ , CHEM3004 ²)	2
۲e	ester 2		Chemical Engineering Advanced Electives or Chemical Engineering Research Electives	2	BIOT3004	Commercialisation of Biotechnology Products	2
	Seme		Chemical Engineering Advanced Electives or Chemical Engineering Research Electives	2	CHEM3016	Experimental Chemistry 2	2
	.	CHEE4002	Risk in Process Industries	2	Level 3 Course	Level 3 course from extended major list (CHEM3001 ¹ , CHEM3010 ¹ , CHEM3004 ²)	2
	Semester	ENGG4901	Professional Practice and the Business Environment	2			
fear 5	Se		Chemical Engineering Advanced Electives or Chemical Engineering Research Electives	2			
	ter 2	CHEE4001	Process Engineering Design Project	4		Level 3 course from extended major list	
	Semester		Chemical Engineering Advanced Electives or Chemical Engineering Research Electives	2	Level 3 Course	(CHEM3011 ¹ , CHEM3020 ² , CHEM3030 ²)	2

¹ Complete 2 units from CHEM3001, CHEM3010, CHEM3011 ² Complete 4 units from CHEM3004, CHEM3020, CHEM3030

* Courses chosen in the engineering component of the first year will depend on whether it is necessary to complete MATH1050 prior to MATH1051. All students undertaking the Chemical Engineering Specialisation must complete ENGG1001 (or CSSE1001), MATH1051 (or MATH1071), MATH1052 (or MATH1072), and ENGG1500. Refer to <u>https://www.eait.uq.edu.au/current-students/manage-your-program/bachelorengineering-honours/dual-degree-program-structure</u> for further details about how to choose these courses.



		BACHELO	R OF ENGINEERING (HONOU	RS)	BACI	HELOR OF BIOTECHNOLOGY Medical Biotechnology	
		Course Code	Course Name	Units	Course Code	Course Name	Units
		ENGG1100	Professional Engineering	2			
	ter 1	MATH1051 or MATH1071	Calculus & Linear Algebra I or Advanced Calculus & Linear Algebra I	2			
	Semester	ENGG1500	Thermodynamics: Energy and the Environment	2			
Year 1		BIOE1001 or BIOL1020	Principles of Biomedical & Bioprocess Engineering or Genes, Cells & Evolution	2			
		ENGG1001	Programming for Engineers	2			
	Semester 2	MATH1052 or MATH1072	Multivariate Calculus & Ordinary Differential Equations or Advanced Multivariate Calculus & Ordinary Differential Equations	2	BIOT2002	Issues in Biotechnology	2
		CHEM1100	Chemistry 1	2			
	9r 1	CHEE2001	Process Principles	2			
	Semester	CHEE2003	Fluid & Particle Mechanics	2	CHEM1200	Chemistry 2	2
2	Š	CHEE2010	Engineering Investigation & Statistical Analysis	2			
Year :		BIOL1040	Cells to Organisms	2			
	Semester 2	CHEE2020	Process Equipment and Control Systems	2			
	Sem	CHEE2030	Chemical Thermodynamics	2			
		CHEE2040	Heat and Mass Transfer	2			
	ster 1	CHEE3004	Unit Operations	2	BIOC2000	Biochemistry & Molecular Biology	2
r 3	Semester	CHEM2056	Physical Chemistry for Engineering	2	CHEM2050	Intermediate Chemistry 1	2
Year	er 2	CHEE3007	Process Modelling & Dynamics	2	BIOM2402	Principles of Pharmacology	2
	Semester		Chemical Engineering Breadth Elective or Chemical Engineering Advanced Electives or Chemical Engineering Research Electives	2	Level 2 Course	Level 2 course from extended major list (BIOL2202) ¹	2



	ster 1	CHEE3005	Reaction Engineering	2	BIOT3009	Quality Management Systems in Biotechnology	2
Year 4	Semester		Chemical Engineering Advanced Electives or Chemical Engineering Research Electives	2	BIOM3401	Systems Pharmacology	2
¥	ster 2	CHEE3020	Process Systems Analysis	2	BIOT3004	Commercialisation of Biotechnology Products	2
	Semester		Chemical Engineering Advanced Electives or Chemical Engineering Research Electives	2	BIOM3402	Experimental Pharmacology	2
	-	CHEE4002	Risk in Process Industries	2	BIOT3002	Drug Design & Development	2
	Semester	ENGG4901	Professional Practice and the Business Environment	2			
Year 5	Se		Chemical Engineering Advanced Electives or Chemical Engineering Research Electives	2			
	ster 2	CHEE4001	Process Engineering Design Project	4		Medicinal Chemistry & Chemical	
	Semester		Chemical Engineering Advanced Electives or Chemical Engineering Research Electives	2	CHEM3020	Biology	2

¹ Students wanting to complete CHEM2054 or BIOL2200 instead of BIOL2202, complete a 'Chemical Engineering Breadth Elective or Chemical Engineering Advanced Electives or Chemical Engineering Research Electives' in Year 3, Sem 2 (in place of BIOL2202) and complete CHEM2054 or BIOL2200 in Year 4, Sem 1.

* Courses chosen in the engineering component of the first year will depend on whether it is necessary to complete MATH1050 prior to MATH1051. All students undertaking the Chemical Engineering Specialisation must complete ENGG1001 (or CSSE1001), MATH1051 (or MATH1071), MATH1052 (or MATH1072), and ENGG1500. Refer to <u>https://www.eait.uq.edu.au/current-students/manage-your-program/bachelorengineering-honours/dual-degree-program-structure</u> for further details about how to choose these courses.



		BACHELO	R OF ENGINEERING (HONOU	IRS)		ELOR OF BIOTECHNOLOGY	,
		Course Code	Course Name	Units	Course Code	ar and Microbial Biotechnology Course Name	Units
		ENGG1100	Professional Engineering	2			
	ster 1	MATH1051 or MATH1071	Calculus & Linear Algebra I or Advanced Calculus & Linear Algebra I	2			
	Semester	ENGG1500	Thermodynamics: Energy and the Environment	2			
Year 1		BIOL1020	Genes, Cells & Evolution	2			
		ENGG1001	Programming for Engineers	2			
	Semester 2	MATH1052 or MATH1072	Multivariate Calculus & Ordinary Differential Equations or Advanced Multivariate Calculus &	2	BIOL1040	Cells to Organisms	2
	S	CHEM1100	Ordinary Differential Equations Chemistry 1	2			
		CHEM1200	Chemistry 2	2			
	ester 1	CHEE2001	Process Principles	2			
	Semester	CHEE2003	Fluid & Particle Mechanics	2			
ar 2		CHEE2010	Engineering Investigation & Statistical Analysis	2			
Year	r 2	CHEE2020	Process Equipment and Control Systems	2			
	Semester	CHEE2030	Chemical Thermodynamics	2	BIOT2002	Issues in Biotechnology	2
	S	CHEE2040	Heat and Mass Transfer	2			
	Semester 1	CHEM2056	Physical Chemistry for Engineering	2	BIOC2000	Biochemistry & Molecular Biology	2
r 3	Seme	CHEE3004	Unit Operations	2	Level 2 Course	Level 2 course from extended major list (BIOL2200) ¹	2
Year	ter 2	CHEE3007	Process Modelling & Dynamics	2	BIOL2202	Genetics	2
	Semester 2		Chemical Engineering Breadth Elective or Chemical Engineering Advanced Electives or Chemical Engineering Research Electives	2	MICR2000	Microbiology & Immunology	2



	ster 1	CHEE3005	Reaction Engineering	2	Level 3 Course	Level 3 course from extended major list (BIOC3000 ² , BIOC3003 ³ , BIOL3003 ³ , BIOL3303 ³ , MICR3002 ³ , MICR3003 ³)	2
ar 4	Seme		Chemical Engineering Advanced Electives or Chemical Engineering Research Electives	2	Level 3 Course	Level 3 course from extended major list (BIOC3000 ² , BIOC3003 ³ , BIOL3003 ³ , BIOL3303 ³ , MICR3002 ³ , MICR3003 ³)	2
Year	ester 2	CHEE3020	Process Systems Analysis	2	Level 3 Course	Level 3 course from extended major list (MICR3001 ² , BIOC3005 ³ , BIOC3006 ³ , BIOL3006 ³ , CHEM3020 ³ , MICR3004 ³ , PARA3002 ³)	2
	Semester		Chemical Engineering Advanced Electives or Chemical Engineering Research Electives	2	Level 3 Course	Level 3 course from extended major list (BIOC3000 ² , BIOC3003 ³ , BIOL3003 ³ , BIOL3303 ³ , MICR3002 ³ , MICR3003 ³)	2
	.	CHEE4002	Risk in Process Industries	2	ВЮТ3009		
	Semester	ENGG4901	Professional Practice and the Business Environment	2		Quality Management Systems in Biotechnology	2
Year 5	Se		Chemical Engineering Advanced Electives or Chemical Engineering Research Electives	2			
	ester 2		Chemical Engineering Advanced Electives or Chemical Engineering Research Electives	2	BIOT3004	Commercialisation of Biotechnology	2
	Seme	CHEE4001	Process Engineering Design Project	4		Products	_

¹ Students wanting to complete BIOC2052 instead of BIOL2200, complete a 'Chemical Engineering Breadth Elective or Chemical Engineering Advanced Electives or Chemical Engineering Research Electives' in Year 3, Sem 1 (in place of BIOL2200) and complete BIOC2052 in Year 3, Sem 2.

² Complete at least 2 units from BIOC3000 and MICR3001

³ Complete at least 4 units from BIOC3003, BIOC3005, BIOC3006, BIOL3003, BIOL3006, BIOL3303, CHEM3020, MICR3002, MICR3003, MICR3004, and PARA3002

* Courses chosen in the engineering component of the first year will depend on whether it is necessary to complete MATH1050 prior to MATH1051. All students undertaking the Chemical Engineering Specialisation must complete ENGG1001 (or CSSE1001), MATH1051 (or MATH1071), MATH1052 (or MATH1072), and ENGG1500. Refer to <u>https://www.eait.uq.edu.au/current-students/manage-your-program/bachelor-</u> engineering-honours/dual-degree-program-structure for further details about how to choose these courses.



		BACHELO	R OF ENGINEERING (HONOU	IRS)		ELOR OF BIOTECHNOLOGY iology and Industrial Biotechno	logy
		Course Code	Course Name	Units	Course Code	Course Name	Units
		ENGG1100	Professional Engineering	2			
	Semester 1	MATH1051 or MATH1071	Calculus & Linear Algebra I or Advanced Calculus & Linear Algebra I	2			
	Seme	ENGG1500	Thermodynamics: Energy and the Environment	2			
Year 1		BIOL1020	Genes, Cells & Evolution	2			
۲e		ENGG1001	Programming for Engineers	2			
	Semester 2	MATH1052 or MATH1072	Multivariate Calculus & Ordinary Differential Equations or Advanced Multivariate Calculus & Ordinary Differential Equations	2	BIOT2002	Issues in Biotechnology	2
		CHEM1100	Chemistry 1	2			
Year 2	er 1	CHEE2001	Process Principles	2			
	Semester 1	CHEE2003	Fluid & Particle Mechanics	2	BIOC2000	Biochemistry & Molecular Biology	2
	ű	CHEE2010	Engineering Investigation & Statistical Analysis	2			
	r 2	CHEE2020	Process Equipment and Control Systems	2	Level 2 course or Elective course	Level 2 course ² from BBiotech course list	
	Semester	CHEE2030	Chemical Thermodynamics	2		or Level 2 course from extended major list (MICR2000 ³)	2
	Ō	CHEE2040	Heat and Mass Transfer	2		or Course ¹ from BBiotech course list	
	r 1	CHEE3004	Unit Operations	2		Level 2 course ² from BBiotech course list	
	Semester 1	CHEM2056	Physical Chemistry for Engineering	2	Level 2 course or Elective course	or Level 2 course from extended major list (SCIE2100 ³)	2
ო			Chemical Engineering Program Elective	2		or Course ¹ from BBiotech course list	
Year		CHEE3007	Process Modelling & Dynamics	2	BIOL2202	Genetics	2
	Semester 2		Chemical Engineering Breadth Elective or Chemical Engineering Advanced Electives or Chemical Engineering Research Electives	2		Level 2 course ² from BBiotech course list or Level 2 course from extended major list (MICR2000 ³) or Level 3 course from extended major list (SCIE3100 ⁴ , MICR3004 ⁴)	2



	ster 1	CHEE3005	Reaction Engineering	2	BIOC3000	Structural & Synthetic Biology	2
Year 4	Semester		Chemical Engineering Advanced Electives or Chemical Engineering Research Electives	2	BIOT3009	Quality Management Systems in Biotechnology	2
Ye	ster 2	CHEE3020	Process Systems Analysis	2	BIOC3005	Molecular Systems Biology	2
	Semester		Chemical Engineering Advanced Electives or Chemical Engineering Research Electives	2	BIOT3004	Commercialisation of Biotechnology Products	2
	r 1	CHEE4002	Risk in Process Industries	2	BIOE4020	Bioprocess Engineering	2
5	Semester	ENGG4901	Professional Practice and the Business Environment	2		Level 2 course ² from BBiotech course list or Level 3 course from extended major list (MICR3003 ⁴)	2
Year		CHEE4001	Process Engineering Design Project	4			
	Semester 2		Chemical Engineering Advanced Electives or Chemical Engineering Research Electives	2			
	Ň		Chemical Engineering Advanced Electives or Chemical Engineering Research Electives	2			

¹ Course from BBiotech course list at Level 1 or higher (in place of MATH1051/MATH1071, which counts towards BE(Hons) component)

² Course from BBiotech course list at Level 2 or higher (in place of CHEE2001, which counts towards BE(Hons) component)

³ Choose 2 units from MICR2000, SCIE2100 (Recommend SCIE2100)

⁴ Choose 2 units from MICR3003, MICR3004, SCIE3100 (Recommend SCIE3100)

* Courses chosen in the engineering component of the first year will depend on whether it is necessary to complete MATH1050 prior to MATH1051. All students undertaking the Chemical Engineering Specialisation must complete ENGG1001 (or CSSE1001), MATH1051 (or MATH1071), MATH1052 (or MATH1072), and ENGG1500. Refer to <u>https://www.eait.uq.edu.au/current-students/manage-your-program/bachelor-</u> engineering-honours/dual-degree-program-structure for further details about how to choose these courses.



		BACHELO	R OF ENGINEERING (HONOU	RS)	BAC	HELOR OF BIOTECHNOLOGY Agricultural Biotechnology	
		Course Code	Course Name	Units	Course Code	Course Name	Units
Year 1	Semester 1						
¥€		ENGG1100	Professional Engineering	2			
	Semester 2	MATH1052 or MATH1072	Multivariate Calculus & Ordinary Differential Equations or Advanced Multivariate Calculus & Ordinary Differential Equations	2			
	Se	ENGG1500	Thermodynamics: Energy and the Environment	2			
		BIOL1020	Genes, Cells & Evolution	2			
	-	ENGG1001	Programming for Engineers	2			
2	Semester	MATH1051 or MATH1071	Calculus & Linear Algebra I or Advanced Calculus & Linear Algebra I	2	BIOL1030	Biodiversity and the Environment	2
Year 2	0)	CHEM1100	Chemistry 1	2			
	nester 2	CHEE2001	Process Principles	2	BIOT2002	Introduction to Biotechnology	2
	Seme	BIOL1040	Cells to Organisms	2	Level 2 Course	Level 2 course from extended major list (BIOL2203, MICR2000, MICR2001)	2
	r1	CHEE2003	Fluid & Particle Mechanics	2			
ი	Semester 1	CHEM2056	Physical Chemistry for Engineering	2	BIOC2000	Biochemistry & Molecular Biology	2
Year :	Ō	CHEE2010	Engineering Investigation & Statistical Analysis	2			
	r 2	CHEE2020	Process Equipment and Control Systems	2			
	Semester	CHEE2030	Chemical Thermodynamics	2	BIOL2202	Genetics	2
	Ń	CHEE2040	Heat and Mass Transfer	2			



	ster 1	CHEE3004	Unit Operations	2	ВЮТ3009	Quality Management Systems in Biotechnology	2
Year 4	Semester	CHEE3005	Reaction Engineering	2	Level 2 Course	Level 2 course from extended major list (BIOL2200, CHEM2003, FOOD2000)	2
Ye	Semester 2	CHEE3007	Process Modelling & Dynamics	2	BIOT3004	Commercialisation of Biotechnology Products	2
	Seme	CHEE3020	Process Systems Analysis	2	Level 3 Course	Level 3 course from extended major list (BIOL3011 ² , BIOL3320 ² , FOOD3008 ²)	2
	ster 1	CHEE4002	Risk in Process Industries	2	Level 3 Course	Level 3 course from extended major list (BIOL3213 ¹ , BIOL3303 ¹ , FOOD3023 ¹ , BIOL3003 ² , BIOL3201 ² , BIOL3209 ²)	2
	Semester	ENGG4901	Professional Practice and the Business Environment A	2	Level 3 Course	Level 3 course from extended major list (BIOL3213 ¹ , BIOL3303 ¹ , FOOD3023 ¹ , BIOL3003 ² , BIOL3201 ² , BIOL3209 ²)	2
Year 5		CHEE4001	Process Engineering Design Project	4			
≻	Semester 2		Chemical Engineering Breadth Elective or Chemical Engineering Advanced Electives or Chemical Engineering Research Electives	2			
			Chemical Engineering Advanced Electives or Chemical Engineering Research Electives	2			
	Ţ		Chemical Engineering Advanced Electives or Chemical Engineering Research Electives	2			
	Semester		Chemical Engineering Advanced Electives or Chemical Engineering Research Electives	2	Level 3 Course	Level 3 course from extended major list (BIOL3213 ¹ , BIOL3303 ¹ , FOOD3023 ¹ , BIOL3003 ² , BIOL3201 ² , BIOL3209 ²)	2
Year 6	ю		Chemical Engineering Advanced Electives or Chemical Engineering Research Electives	2			
Ye	r 2						
	Semester						
	σ						

¹ Complete at least 2 units from BIOL3213, BIOL3303 and FOOD3023

² Complete at least 2 units from BIOL3003, BIOL3011, BIOL3201, BIOL3209, BIOL3320 and FOOD3008

* Courses chosen in the engineering component of the first year will depend on whether it is necessary to complete MATH1050 prior to MATH1051. All students undertaking the Chemical Engineering Specialisation must complete ENGG1001 (or CSSE1001), MATH1051 (or MATH1071), MATH1052 (or MATH1072), and ENGG1500. Refer to <u>https://www.eait.uq.edu.au/current-students/manage-your-program/bachelorengineering-honours/dual-degree-program-structure</u> for further details about how to choose these courses.



	BACHELOR OF ENGINEERING (HONOURS)			ELOR OF BIOTECHNOLOGY			
		Course Code	Course Name	Units	Course Code	Course Name	Units
r 1	Semester 1						
Year 1		ENGG1100	Professional Engineering	2			
	Semester 2	MATH1052 or MATH1072	Multivariate Calculus & Ordinary Differential Equations or Advanced Multivariate Calculus &	2			
	Sem	ENGG1500	Ordinary Differential Equations Thermodynamics: Energy and the Environment	2			
		CHEM1100	Chemistry 1	2			
		ENGG1001	Programming for Engineers	2			
2	Semester 1	MATH1051 or MATH1071	Calculus & Linear Algebra I or Advanced Calculus & Linear Algebra I	2	CHEM1200	Chemistry 2	2
Year 2	S	BIOE1001 or BIOL1020	Principles of Biomedical & Bioprocess Engineering or Genes, Cells & Evolution	2			
	2	CHEE2001	Process Principles	2			
	Semester	CHEE2030	Chemical Thermodynamics	2	BIOT2002	Introduction to Biotechnology	2
	ŭ		Chemical Engineering Program Elective				
	- -	CHEE2003	Fluid & Particle Mechanics	2			
~	Semester 1	CHEM2056	Physical Chemistry for Engineering	2	BIOC2000	Biochemistry & Molecular Biology	2
Year 3	, М	CHEE2010	Engineering Investigation & Statistical Analysis	2			
	er 2	CHEE2020	Process Equipment and Control Systems	2			
	Semester	CHEE2040	Heat and Mass Transfer	2	CHEM2060	Intermediate Chemistry 2	2
	S	CHEE3020	Process Systems Analysis	2			



	ster 1	CHEE3004	Unit Operations	2	CHEM2054	Experimental Chemistry 1	2
4	Semester	CHEE3005	Reaction Engineering	2	CHEM2050	Intermediate Chemistry 1	2
Year	er 2	CHEE3007	Process Modelling & Dynamics	2	BIOT3004	Commercialisation of Biotechnology Products	2
	Semester		Chemical Engineering Breadth Elective or Chemical Engineering Advanced Electives or Chemical Engineering Research Electives	2	Level 3 Course	Level 3 course from extended major list (CHEM3011 ¹ , CHEM3020 ² , CHEM3030 ²)	2
	ster 1	CHEE4002	Risk in Process Industries	2	BIOT3009	Quality Management Systems in Biotechnology	2
ar 5	Semester	ENGG4901	Professional Practice and the Business Environment A	2	Level 3 Course	Level 3 course from extended major list (CHEM3001 ¹ , CHEM3010 ¹ , CHEM3004 ²)	2
Year	ster 2	CHEE4001	Process Engineering Design Project	4	CHEM3016		
	Semester		Chemical Engineering Advanced Electives or Chemical Engineering Research Electives	2		Experimental Chemistry 2	2
	.		Chemical Engineering Advanced Electives or Chemical Engineering Research Electives	2	Level 3 Course	Level 3 course from extended major list (CHEM3001 ¹ , CHEM3010 ¹ , CHEM3004 ²)	
	Semester		Chemical Engineering Advanced Electives or Chemical Engineering Research Electives	2			2
Year 6	Ō		Chemical Engineering Advanced Electives or Chemical Engineering Research Electives	2			
Ye	Semester 2						

¹ Complete 2 units from CHEM3001, CHEM3010, CHEM3011

² Complete 4 units from CHEM3004, CHEM3020, CHEM3030

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		BACHELOR OF ENGINEERING (HONOURS)			BACH	ELOR OF BIOTECHNOLOGY Medical Biotechnology	
		Course Code	Course Name	Units	Course Code	Course Name	Units
Year 1	Semester 1						
≺e		ENGG1100	Professional Engineering	2			
	Semester 2	MATH1052 or MATH1072	Multivariate Calculus & Ordinary Differential Equations or Advanced Multivariate Calculus & Ordinary Differential Equations	2			
ů	N.	ENGG1500	Thermodynamics: Energy and the Environment	2			
		CHEM1100	Chemistry 1	2			
		ENGG1001	Programming for Engineers	2			
	ester 1	MATH1051 or	Calculus & Linear Algebra I or	2	 CHEM1200	Chemistry 2	2
Year 2	Semester 1	MATH1071 BIOE1001 or BIOL1020	Advanced Calculus & Linear Algebra I Principles of Biomedical & Bioprocess Engineering or Genes, Cells & Evolution	2			-
	. М	CHEE2001	Process Principles	2			
	Semester	CHEE2030	Chemical Thermodynamics	2	BIOT2002	Introduction to Biotechnology	2
Ċ	ֿאַ ו	BIOL1040	Cells to Organisms	2			
	-	CHEE2003	Fluid & Particle Mechanics	2			
	Semester	CHEM2056	Physical Chemistry for Engineering	2	BIOC2000	Biochemistry & Molecular Biology	2
Year	Š	CHEE2010	Engineering Investigation & Statistical Analysis	2			
¢	ster 2	CHEE2020	Process Equipment and Control Systems	2	BIOM2402	Principles of Pharmacology	2
c	Semester	CHEE2040	Heat and Mass Transfer	2	Level 2 Course	Level 2 course from extended major list (BIOL2202) ¹	2



	ster 1	CHEE3004	Unit Operations	2	BIOM3401	Systems Pharmacology	2
Year 4	Semester	CHEE3005	Reaction Engineering	2	CHEM2050	Intermediate Chemistry 1	2
Ye	Semester 2	CHEE3007	Process Modelling & Dynamics	2	BIOT3004	Commercialisation of Biotechnology Products	2
	Seme	CHEE3020	Process Systems Analysis	2	BIOM3402	Experimental Pharmacology	2
		CHEE4002	Risk in Process Industries	2			
	Semester 1	ENGG4900	Professional Practice and the Business Environment	2	BIOT3009	BIOT3009 Quality Management Systems in Biotechnology	2
Year 5	Sen		Chemical Engineering Breadth Elective or Chemical Engineering Advanced Electives or Chemical Engineering Research Electives	2			
	ster 2	CHEE4001	Process Engineering Design Project	4		Medicinal Chemistry & Chemical	
	Semester 2		Chemical Engineering Advanced Electives or Chemical Engineering Research Electives	2	CHEM3020	Biology	2
(0)	.		Chemical Engineering Advanced Electives or Chemical Engineering Research Electives	2			
Year 6	Semester 1		Chemical Engineering Advanced Electives or Chemical Engineering Research Electives	2	BIOT3002	Drug Design & Development	2
7	S		Chemical Engineering Advanced Electives or Chemical Engineering Research Electives	2			

¹ Students wanting to complete CHEM2054 or BIOL2200 instead of BIOL2202, complete a 'Chemical Engineering Breadth Elective or Chemical Engineering Advanced Electives or Chemical Engineering Research Electives' in Year 3, Sem 2 (in place of BIOL2202) and complete CHEM2054 or BIOL2200 in Year 5, Sem 1.

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	BACHELOR OF ENGINEERING (HONOURS)					ELOR OF BIOTECHNOLOGY ar and Microbial Biotechnology	,
		Course Code	Course Name	Units	Course Code	Course Name	Units
	Semester 1						
r 1		ENGG1100	Professional Engineering	2			
Year 1	Semester 2	MATH1052 or MATH1072	Multivariate Calculus & Ordinary Differential Equations or Advanced Multivariate Calculus & Ordinary Differential Equations	2			
	Š	ENGG1500	Thermodynamics: Energy and the Environment	2			
		CHEM1100	Chemistry 1	2			
		ENGG1001	Programming for Engineers	2			
	Semester 1	MATH1051 or MATH1071	Calculus & Linear Algebra I or Advanced Calculus & Linear Algebra I	2			
3	S	BIOL1020	Genes, Cells & Evolution	2			
Year		CHEM1200	Chemistry II	2			
	r 2				BIOL1040	Cells to Organisms	2
	Semester 2	CHEE2001	Process Principles	2	BIOL2202	Genetics	2
	S				BIOT2002	Issues in Biotechnology	2
	~	CHEE2003	Fluid & Particle Mechanics	2			
	Semester 1	CHEE2010	Engineering Investigation & Statistical Analysis	2	BIOC2000	Biochemistry & Molecular Biology	2
ar 3	S	CHEM2056	Physical Chemistry for Engineering	2			
Year	er 2	CHEE2020	Process Equipment and Control Systems	2			
	Semester	CHEE2030	Chemical Thermodynamics	2	MICR2000	Microbiology & Immunology	2
	S	CHEE2040	Heat and Mass Transfer	2			



	ester 1	CHEE3004	Unit Operations	2	Level 2 Course	Level 2 course from extended major list (BIOL2200) ¹	2
	Semester	CHEE3005	Reaction Engineering	2	BIOT3009	Quality Management System in Biotechnology	2
Year 4	2	CHEE3007	Process Modelling & Dynamics	2			
7	Semester	CHEE3020	Process Systems Analysis	2	BIOT3004	Commercialisation of Biotechnology Products	2
	Sen		Chemical Engineering Breadth Elective or Chemical Engineering Advanced Electives or Chemical Engineering Research Electives	2			
	.	CHEE4002	Risk in Process Industries	2	Level 3 Course	Level 3 course from extended major list (BIOC3000 ² , BIOC3003 ³ , BIOL3003 ³ , BIOL3303 ³ , MICR3002 ³ , MICR3003 ³)	
	Semester	ENGG4901	Professional Practice and the Business Environment A	2			2
Year 5	Se		Chemical Engineering Advanced Electives or Chemical Engineering Research Electives	2			
	ster 2	CHEE4001	Process Engineering Design Project	4		Level 3 course from extended major list (MICR3001 ² , BIOC3005 ³ ,	
	Semester		Chemical Engineering Advanced Electives or Chemical Engineering Research Electives	2	Level 3 Course	BIOC3006 ³ , BIOL3006 ³ , CHEM3020 ³ , MICR3004 ³ , PARA3002 ³)	2
ear 6	Semester 1		Chemical Engineering Advanced Electives or Chemical Engineering Research Electives	2	Level 3 Course	Level 3 course from extended major list (BIOC3000 ² , BIOC3003 ³ , BIOL3003 ³ , BIOL3303 ³ , MICR3002 ³ , MICR3003 ³)	2
Үеа	Seme		Chemical Engineering Advanced Electives or Chemical Engineering Research Electives	2	Level 3 Course	Level 3 course from extended major list (MICR3001 ² , BIOC3005 ³ , BIOC3006 ³ , BIOL3006 ³ , CHEM3020 ³ , MICR3004 ³ , PARA3002 ³)	2

¹ Students wanting to complete BIOC2052 instead of BIOL2200, complete a 'Chemical Engineering Breadth Elective or Chemical Engineering Advanced Electives or Chemical Engineering Research Electives' in Year 4, Sem 1 (in place of BIOL2200) and complete BIOC2052 in Year 4, Sem 2. However keeping in mind that BIOL2200 is a prerequisite for BIOL3006 and BIOC2052 is a prerequisite for CHEM3020. ² Complete at least 2 units from BIOC3000 and MICR3001

³ Complete at least 4 units from BIOC3003, BIOC3005, BIOC3006, BIOL3003, BIOL3006, BIOL3303, CHEM3020, MICR3002, MICR3003, MICR3004, and PARA3002

* Courses chosen in the engineering component of the first year will depend on whether it is necessary to complete MATH1050 prior to MATH1051. All students undertaking the Chemical Engineering Specialisation must complete ENGG1001 (or CSSE1001), MATH1051 (or MATH1071), MATH1052 (or MATH1072), and ENGG1500. Refer to <u>https://www.eait.uq.edu.au/current-students/manage-your-program/bachelor-</u> engineering-honours/dual-degree-program-structure for further details about how to choose these courses.



		BACHELO	R OF ENGINEERING (HONOU	IRS)		ELOR OF BIOTECHNOLOGY iology and Industrial Biotechno	
		Course Code	Course Name	Units	Course Code	Course Name	Units
Year 1	Semester 1						
Ye		ENGG1100	Professional Engineering	2			
	Semester 2	MATH1052 or MATH1072	Multivariate Calculus & Ordinary Differential Equations or Advanced Multivariate Calculus & Ordinary Differential Equations	2			
	Š	ENGG1500	Thermodynamics: Energy and the Environment	2			
		BIOL1020	Genes, Cells & Evolution	2			
		ENGG1001	Programming for Engineers	2			
	Semester 1	MATH1051 or MATH1071	Calculus & Linear Algebra I or Advanced Calculus & Linear Algebra I	2	Elective course	Course ¹ from BBiotech course list	2
Year 2	Seme	CHEM1100	Chemistry 1	2			
¥	ster 2	CHEE2001	Process Principles	2	BIOL2202	Genetics	2
	Semester 2	CHEE2030	Chemical Thermodynamics	2	BIOT2002	Issues in Biotechnology	2
	r 1	CHEE2003	Fluid & Particle Mechanics	2			
e	Semester	CHEE2010	Engineering Investigation & Statistical Analysis	2	BIOC2000	Biochemistry & Molecular Biology	2
Year :	S	CHEM2056	Physical Chemistry for Engineering	2			
	ester 2	CHEE2020	Process Equipment and Control Systems	2	Level 2 Course	Level 2 course from extended major list (MICR2000) ³	2
	Semester	CHEE2040	Heat and Mass Transfer	2	BIOT3004	Commercialisation of Biotechnology Products	2



	ster 1	CHEE3004	Unit Operations	2	BIOC3000	Structural & Synthetic Biology	2
Year 4	Semester	CHEE3005	Reaction Engineering	2	BIOT3009	Quality Management Systems in Biotechnology	2
Yeá	ester 2	CHEE3007	Process Modelling & Dynamics	2	BIOC3005	Bioprocess Engineering	2
	Semester	CHEE3020	Process Systems Analysis	2	Elective Course	Course ³ from BBiotech course list	2
		CHEE4002	Risk in Process Industries	2			
	Semester 1	ENGG4901	Professional Practice and the Business Environment A	2	Level 3 Course	Level 3 Course from extended major list (MICR3003, MICR3004, SCIE3100)	2
Year 5			Chemical Engineering Advanced Electives or Chemical Engineering Research Electives	2			
	2	CHEE4001	Process Engineering Design Project	4			
	Semester		Chemical Engineering Breadth Elective or Chemical Engineering Advanced Electives or Chemical Engineering Research Electives	2	BIOE4020	Bioprocess Engineering	2
			Chemical Engineering Program Elective	2			
Year 6	ster 1		Chemical Engineering Advanced Electives or Chemical Engineering Research Electives	2			
	Semester		Chemical Engineering Advanced Electives or Chemical Engineering Research Electives	2			
			Chemical Engineering Advanced Electives or Chemical Engineering Research Electives	2			

¹ Course from BBiotech course list at Level 1 or higher (in place of MATH1051/MATH1071, which counts towards BE(Hons) component) ² Course from BBiotech course list at Level 2 or higher (in place of CHEE2001, which counts towards BE(Hons) component)

³ Choose 2 units from MICR2000, SCIE2100 (Recommend SCIE2100). Students wanting to complete SCIE2100 instead of MICR2000, complete a 'Chemical Engineering Breadth Elective or Chemical Engineering Advanced Electives or Chemical Engineering Research Electives' in Year 3, Sem 2 (in place of MICR2000), complete SCIE2100 in Year 4, Sem 1, and BIOT3009 in Year 6 Sem 1. However keeping in mind that MICR2000 is a prerequisite for MICR3003 and MICR3004, and SCIE2100 is a prerequisite for SCIE3100.

⁴ Choose 2 units from MICR3003, MICR3004, SCIE3100 (Recommend SCIE3100)

Courses chosen in the engineering component of the first year will depend on whether it is necessary to complete MATH1050 prior to MATH1051. All students undertaking the Chemical Engineering Specialisation must complete ENGG1001 (or CSSE1001), MATH1051 (or MATH1071), MATH1052 (or MATH1072), and ENGG1500. Refer to https://www.eait.uq.edu.au/current-students/manage-your-program/bachelorengineering-honours/dual-degree-program-structure for further details about how to choose these courses.