

B.Eng (Hons) in Chemical and Biomolecular Engineering with 2nd Major in Future Foods

with Professional Internship

AY2024 - 2025 Intake onwards (CBFF)

Programme	Year of Study	Number of Academic Units (AU)					
		Major Requirement		Interdisciplinary Collaborative Core		Broadening and Deepening Electives (BDE)	Total
		Core (C)	Major PE (MPE)	Common Core (CC)	Foundation al Core (FC)		
Chemical & Biomolecular Engineering with Second Major in FF_Track 1 (Global Immersion in WUR)	1	24		9			33
	2	30	3 [3]	8	3	3	47
	3				10	12	22
	4	23	3 [3]		2	9	37
	Total	77	6 [6]	17	15	24	139

140*

Programme	Year of Study	Number of Academic Units (AU)					
		Major Requirement		Interdisciplinary		Broadening and Deepening Electives (BDE)	Total
		Core (C)	Major PE (MPE)	Common Core (CC)	Foundation al Core (FC)		
Chemical & Biomolecular Engineering with Second Major in FF_Track 2 (NTU Based)	1	24		9			33
	2	28	3 [3]	8	3	3	45
	3	17			12		29
	4	8	3 [3]			21	32
	Total	77	6 [6]	17	15	24	139

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AY2024 - 2025 Intake onwards (CBFF)

Category		AU	Total AU
Interdisciplinary Collaborative Core (ICC)	Common Core (University-level)		
	CC0001 Inquiry and Communication in the Interdisciplinary World	2	17
	CC0002 Navigating the Digital World	2	
	CC0003 Ethics & Civics in a Multi-Cultural World	2	
	CC0005 Healthy Living & Wellbeing	3	
	CC0006 Sustainability: Society, Economy & Environment	3	
	CC0007 Science & Technology for Humanity	3	
	ML0004 Career and Entrepreneurial Development for the Future World	2	
	Foundational Core (College-level)		
	HW0288 Engineering Communication	2	15
	CB0494 Introduction to Data Science and Artificial Intelligence	3	
	CH3920 Professional Internship	10	
Major Requirement	CBE Core		
	EG1001 Engineers In Society	2	36
	MH1810 Math 1	3	
	PH1011* Physics	3	
	CB1102 Introduction to Chemical and Biomedical Engineering	1	
	CB1103 Organic Chemistry For Engineers	3	
	CB1117 Engineering Mathematics	4	
	CB1131 Introduction to Biomolecular Engineering	3	
	CH1104 Materials & Energy Balance	3	
	CH1801 Chemical & Biomolecular Engineering Laboratory 1A	1	
	CH1802 Chemical & Biomolecular Engineering Laboratory 2	1	
	CH2010 Engineering Statistics	3	
	CH2103 Fluid Systems	3	
	CH2107 Introduction to Computational Thinking	3	
	CH2108 Thermodynamics	3	

Major Requiremen	CH2112	Chemical Reaction Engineering	3	41
	CH2114	Heat & Mass Transfer in Chemical and Biological Systems	3	
	CH2123	Chemical Thermodynamics	3	
	CH2151	Unit Operations: Fluid-Solid Seperation	3	
	CH2801	Chemical & Biomolecular Engineering Laboratory 2A	2	
	CH2802	Chemical & Biomolecular Engineering Laboratory 2B	2	
	CH3104	Biochemical Engineering	3	
	CH3109	Decision Tools for Business & Engineering	3	
	CH3111	Process Control and Dynamics	3	
	CH3121	Chemical, Biological & Plant Safety	2	
	CH3140	Unit Operations: Fluid-Fluid Separation	3	
	CH3802	Chemical & Biomolecular Engineering Laboratory 5	3	
	CH4801	Final Year Design Project	8	
	CBE Major Prescribed Electives (MPE)			
CH5220^	Food Standard - Food Safety & Risk Assessment	3^	6	
CH5222^	Future Foods - Introduction to Advanced Meat	3^		
2nd Major in Future Foods (BDEs)	FF Core Courses			24
	CH5210	Food Process Technologies and New Production Systems	3	
	CH5211	Data Analytics in Food Systems	3	
	CH5220^	Food Standard - Food Safety & Risk Assessment	–	
	CH5222^	Future Foods - Introduction to Advanced Meat	–	
	CM5101	Food Chemistry & Nutrition	3	
	Electives (Choose 5, min 15AU)			
	4 WUR Electives (Track 1) or 4 NTU Elective (Track 2)		12	
1 NTU Elective		3		
Total				139

140*

*Students without 'A' Level Physics will take 'PH1012 Physics A' (4AU).

^Counted towards 2nd Major in FF requirement (total 6AU)

[] AU of courses that could be used to fulfil Core/MPE requirement and 2nd Major requirement concurrently

B.Eng. (Chemical & Biomolecular Engineering) with 2nd Major in Future Foods

Suggested Study Plan for AY2024-2025 intake (CHFS)

Track 1 (Global Immersion in WUR)

with Professional Internship**Year 1 Semester 1**

Course	Type	AU
CB1102 Introduction to Chemical and Biomedical Engineering	C	1
CB1131 Introduction to Biomolecular Engineering	C	3
CH1801 Chemical & Biomolecular Engineering Laboratory 1A	C	1
MH1810 Math 1	C	3
PH1011 Physics	C	3
PH1012 <i>Physics A (* For students without 'A' Level Physics)</i>		4
CC0001 Inquiry and Communication in the Interdisciplinary World	CC	2
CC0002 Navigating the Digital World	CC	2
		15
		16

Year 1 Semester 2

Course	Type	AU
CB1103 Organic Chemistry For Engineers	C	3
CB1117 Engineering Mathematics	C	4
CH1104 Materials & Energy Balance	C	3
CH1802 Chemical & Biomolecular Engineering Laboratory 2	C	1
EG1001 Engineers in Society	C	2
CC0003 Ethics & Civics in a Multi-Cultural World	CC	2
CC0005 Healthy Living & Wellbeing	CC	3
		18

Year 2 Semester 1

Course	Type	AU
CH2103 Fluid Systems	C	3
CH2107 Introduction to Computational Thinking	C	3
CH2108 Thermodynamics	C	3
CH2010 Engineering Statistics	C	3
CH2801 Chemical & Biomolecular Engineering Laboratory 2A	C	2
CH3121 Chemical, Biological & Plant Safety	C	2
CC0006 Sustainability: Society, Economy & Environment	CC	3
ML0004 Career and Entrepreneurial Development for the Future World	CC	2
CM5101 Food Chemistry & Nutrition	BDE	3
		24

Year 2 Semester 2

Course	Type	AU
CH2112 Chemical Reaction Engineering	C	3
CH2114 Heat & Mass Transfer in Chemical and Biological Systems	C	3
CH2123 Chemical Thermodynamics	C	3
CH2151 Unit Operations: Fluid-Solid Separation	C	3
CH2802 Chemical & Biomolecular Engineering Laboratory 2B	C	2
CC0007 Science & Technology for Humanity	CC	3
CB0494 Introduction to Data Science and Artificial Intelligence	FC	3
^CH5220 Food Standard - Food Safety and Risk Assessment	MPE	3
		23

Year 3 Semester 1

Course	Type	AU
FF WUR Elective 1	BDE	3
FF WUR Elective 2	BDE	3
FF WUR Elective 3	BDE	3
FF WUR Elective 4	BDE	3
		12

Year 3 Semester 2

Course	Type	AU
CH3920 Professional Internship	FC	10
		10

Year 4 Semester 1

Course	Type	AU
CH3104 Biochemical Engineering	C	3
CH3109 Decision Tools for Business & Engineering	C	3
CH3111 Process Control and Dynamics	C	3
CH3140 Unit Operations: Fluid-Fluid Separation	C	3
CH3802 Chemical & Biomolecular Engineering Laboratory 5	C	3
CH4801 Final Year Design Project	C	4
CH5210 Food Process Technologies and New Production System	BDE	3
		22

Year 4 Semester 2

Course	Type	AU
CH4801 Final Year Design Project	C	4
HW0288 Engineering Communication	FC	2
CH5211 Data Analytics in Food Systems	BDE	3
^CH5222 Future Foods - Introduction to Advanced Meat Alternative	MPE	3
FF NTU Elective 1	BDE	3
		15

Total (AU)**139****140***

*Students without 'A' Level Physics will take 'PH1012 Physics A' (4AU).

^Counted towards 2nd Major in FF requirement (total 6U)

B.Eng. (Chemical & Biomolecular Engineering) with 2nd Major in Future Foods

Suggested Study Plan for AY2024-2025 intake (CHFF)

Track 2 (NTU Based)

with Professional Internship**Year 1 Semester 1**

Course	Type	AU
CB1102 Introduction to Chemical and Biomedical Engineering	C	1
CB1131 Introduction to Biomolecular Engineering	C	3
CH1801 Chemical & Biomolecular Engineering Laboratory 1A	C	1
MH1810 Math 1	C	3
PH1011 Physics	C	3
PH1012 <i>Physics A (* For students without 'A' Level Physics)</i>		4
CC0001 Inquiry and Communication in the Interdisciplinary World	CC	2
CC0002 Navigating the Digital World	CC	2
		15
		16

Year 1 Semester 2

Course	Type	AU
CB1103 Organic Chemistry For Engineers	C	3
CB1117 Engineering Mathematics	C	4
CH1104 Materials & Energy Balance	C	3
CH1802 Chemical & Biomolecular Engineering Laboratory 2	C	1
EG1001 Engineers in Society	C	2
CC0003 Ethics & Civics in a Multi-Cultural World	CC	2
CC0005 Healthy Living & Wellbeing	CC	3
		18

Year 2 Semester 1

Course	Type	AU
CH2103 Fluid Systems	C	3
CH2107 Introduction to Computational Thinking	C	3
CH2108 Thermodynamics	C	3
CH2010 Engineering Statistics	C	3
CH2801 Chemical & Biomolecular Engineering Laboratory 2A	C	2
CC0006 Sustainability: Society, Economy & Environment	CC	3
ML0004 Career and Entrepreneurial Development for the Future World	CC	2
CM5101 Food Chemistry & Nutrition	BDE	3
		22

Year 2 Semester 2

Course	Type	AU
CH2112 Chemical Reaction Engineering	C	3
CH2114 Heat & Mass Transfer in Chemical and Biological Systems	C	3
CH2123 Chemical Thermodynamics	C	3
CH2151 Unit Operations: Fluid-Solid Separation	C	3
CH2802 Chemical & Biomolecular Engineering Laboratory 2B	C	2
CC0007 Science & Technology for Humanity	CC	3
CB0494 Introduction to Data Science and Artificial Intelligence	FC	3
CH5220 ^A Food Standard - Food Safety and Risk Assessment	MPE	3
		23

Year 3 Semester 1

Course	Type	AU
CH3104 Biochemical Engineering	C	3
CH3109 Decision Tools for Business & Engineering	C	3
CH3111 Process Control and Dynamics	C	3
CH3121 Chemical, Biological & Plant Safety	C	2
CH3140 Unit Operations: Fluid-Fluid Separation	C	3
CH3802 Chemical & Biomolecular Engineering Laboratory 5	C	3
HW0288 Engineering Communication	FC	2
		19

Year 3 Semester 2

Course	Type	AU
CH3920 Professional Internship	FC	10
		10

Year 4 Semester 1

Course	Type	AU
CH4801 Final Year Design Project	C	4
CH5210 Food Process Technologies and New Production System	BDE	3
FF NTU Elective 1	BDE	3
FF NTU Elective 2	BDE	3
FF NTU Elective 3	BDE	3
		16

Year 4 Semester 2

Course	Type	AU
CH4801 Final Year Design Project	C	4
CH5211 Data Analytics in Food Systems	BDE	3
CH5222 ^A Future Foods - Introduction to Advanced Meat Alternative	MPE	3
FF NTU Elective 4	BDE	3
FF NTU Elective 5	BDE	3
		16

Total (AU)**139****140***

*Students without 'A' Level Physics will take 'PH1012 Physics A' (4AU).

^ACounted towards 2nd Major in FST requirement (total 6U)