

B.Eng (Hons) in Bioengineering with 2nd Major in Future Foods

Track 1 (Global Immersion in WUR)

with Professional Internship

AY2025 - 2026 Intake onwards (BEFF)

Programme	Year of Study	Number of Academic Unit (AU)						
		Major Requirement		Interdisciplinary Collaborative Core			Broadening and Deepening Electives (BDE)	Total
		Core (C)	Major PE (MPE)	Common Core (CC)	Professional Series (PS)	Care, Serve, Learn (CSL)		
Bioengineering with Second Major in FF_ Track 1 (Global Immersion in WUR)	1	24		6				30
	2	30	3 [3]	8	1		3	45
	3				10		12	22
	4	24	3 [3]		5	3	9	44
	Total	78	6[6]	14	16	3	24	141

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Programme	Year of Study	Number of Academic Unit (AU)						
		Major Requirement		Interdisciplinary Collaborative			Broadening and Deepening Electives (BDE)	Total
		Core (C)	Major PE (MPE)	Common Core (CC)	Professional Series (PS)	Care, Serve, Learn (CSL)		
Bioengineering with Second Major in FF_Track 2 (NTU Based)	1	21		6				27
	2	27	3 [3]	8			3	41
	3	13			13		6	32
	4	17	3 [3]		3	3	15	41
	Total	78	6[6]	14	16	3	24	141

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Category		AU	Total AU
Interdisciplinary Collaborative Core (ICC)	Common Core (CC)		
	CC0001 Inquiry and Communication in the Interdisciplinary World	2	14
	CC0003 Ethics & Civics in a Multi-Cultural World	2	
	CC0006 Sustainability: Society, Economy & Environment	3	
	CC0007 Science & Technology for Humanity	3	
	CC0015 Health & Wellbeing	2	
	ML0004 Career Design & Workplace Readiness in the V.U.C.A World	2	

Core (100)	Professional Series (PS)		
	CB0494 Introduction to Data Science and Artificial Intelligence	3	16
	HW0288 Engineering Communication	2	
	MLXXXX Professional Preparation	1	
	BG3920 Professional Internship	10	
	Care, Service, Learn (CSL)		
	Service Learning	3	3
Major Requirement	BIE Core		
	EG1001 Engineers In Society	2	78
	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	
	BG1141 Cellular & Molecular Biology for Bioengineers	3	
	BG1801 Bioengineering Lab 1A	1	
	BG1802 Bioengineering Lab 1B	1	
	CB2002 Introduction to Chemical and Biological Safety	1	
	BG2103 Signal Processing in Biosystems	3	
	BG2104 Electronics for Biomedical Engineering	3	
	BG2110 Bioelectricity	3	
	BG2119 Anatomy and Physiology	3	
	BG2131 Biomaterials	3	
	BG2142 Biological Thermodynamics	3	
	BG2209 Mechanics for Bioengineers	3	
	BG2211 Introduction to Computational Thinking	3	
	BG2801 Bioengineering Lab 2A	1	
	BG2802 Bioengineering Lab 2B	1	
	BG3102 Control in Biosystems	3	
	BG3104 Biomedical Imaging	3	
	BG3105 Biomedical Instrumentation	3	
	BG3112 Cardiovascular Engineering	3	
	BG3801 Bioengineering Lab 3	1	
	BG4104 Machine Learning and Optimization for Bioengineers	3	
	BG4122 Medical Device Design	6	
	BG4801 Final Year Project	8	
	BIE 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)	FFCore Courses		
	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	24
	Electives		
	Track 1 - Global Immersion in WUR: #5 WUR Electives + 1 NTU Elective	15	
	OR		
	Track 2 - NTU Based: 5 NTU Electives		
Total			141

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

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

#Track 1 students are required to read 5 WUR electives but only 4 will be credit transferred to NTU

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

B.Eng. (Bioengineering) with 2nd Major in Future Foods

Suggested Study Plan for AY2025-2026 intake (BEFF)

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
BG1141 Cellular & Molecular Biology for Bioengineers	C	3
BG1801 Bioengineering Lab 1A	C	1
BG2119 Anatomy and Physiology	C	3
MH1810 Math 1	C	3
PH1011 Physics	C	3
<i>or</i>		
PH1012 Physics A (* For students without 'A' Level Physics)	C	4
CC0001 Inquiry and Communication in the Interdisciplinary World	CC	2

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Course	Type	AU
CB1103 Organic Chemistry For Engineers	C	3
CB1117 Engineering Mathematics	C	4
BG1802 Bioengineering Lab 1B	C	1
EG1001 Engineers in Society	C	2
CC0003 Ethics & Civics in a Multi-Cultural World	CC	2
CC0015 Healthy Living & Wellbeing	CC	2

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Year 2 Semester 1

Course	Type	AU
BG2131 Biomaterials	C	3
BG2142 Biological Thermodynamics	C	3
BG2211 Introduction to Computational Thinking	C	3
BG2801 Bioengineering Lab 2A	C	1
BG3102 Control in Biosystems	C	3
BG3104 Biomedical Imaging	C	3
CC0006 Sustainability: Society, Economy & Environment	CC	3
ML0004 Career Design & Workplace Readiness in the V.U.C.A World	CC	2
MLXXXX Professional Preparation	PS	1
CM5101 Food Chemistry & Nutrition	BDE	3

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Year 2 Semester 2

Course	Type	AU
BG2103 Signal Processing in Biosystems	C	3
BG2104 Electronics for Biomedical Engineering	C	3
BG2110 Bioelectricity	C	3
BG2209 Mechanics for Bioengineers	C	3
BG2802 Bioengineering Lab 2B	C	1
CB2002 Introduction to Chemical and Biological Safety	C	1
CC0007 Science & Technology for Humanity	CC	3
CH5220 ^A Food Standard - Food Safety and Risk Assessment	MPE	3

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Year 3 Semester 1 (Exchange in WUR)

Course	Type	AU
FST WUR Elective 1	BDE	3
FST WUR Elective 2	BDE	3
FST WUR Elective 3	BDE	3
FST WUR Elective 4	BDE	3
FST WUR Elective 5	BDE	-

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Year 3 Semester 2

Course	Type	AU
BG3920 Professional Internship	PS	10

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Year 4 Semester 1

Course	Type	AU
BG3105 Biomedical Instrumentation	C	3
BG3112 Cardiovascular Engineering	C	3
BG3801 Bioengineering Lab 3	C	1
BG4104 Machine Learning and Optimization for Bioengineers	C	3
BG4122 Medical Device Design	C	3
BG4801 Final Year Project	C	4
Service Learning	CSL	3
CH5210 Food Process Technologies and New Production System	BDE	3

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Year 4 Semester 2

Course	Type	AU
BG4122 Medical Device Design	C	3
BG4801 Final Year Project	C	4
CB0494 Introduction to Data Science and Artificial Intelligence	PS	3
HW0288 Engineering Communication	PS	2
CH5211 Data Analytics in Food Systems	BDE	3
CH5222 ^A Future Foods - Introduction to Advanced Meet Alternative	MPE	3
FF NTU Elective	BDE	3

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Total (AU)

141

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

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

B.Eng. (Bioengineering) with 2nd Major in Future Foods

Track 2 (NTU Based)

Suggested Study Plan for AY2025-2026 intake (BEFF)

with Professional Internship**Year 1 Semester 1**

Course	Type	AU
CB1102 Introduction to Chemical and Biomedical Engineering	C	1
BG1141 Cellular & Molecular Biology for Bioengineers	C	3
BG1801 Bioengineering Lab 1A	C	1
MH1810 Math 1	C	3
PH1011 Physics	C	3
PH1012 Physics A (* For students without 'A' Level Physics)	C	4
CC0001 Inquiry and Communication in the Interdisciplinary World	CC	2

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13 14**Year 2 Semester 1**

Course	Type	AU
BG2119 Anatomy and Physiology	C	3
BG2131 Biomaterials	C	3
BG2142 Biological Thermodynamics	C	3
BG2211 Introduction to Computational Thinking	C	3
BG2801 Bioengineering Lab 2A	C	1
CC0006 Sustainability: Society, Economy & Environment	CC	3
ML0004 Career Design & Workplace Readiness in the V.U.C.A World	CC	2
CM5101 Food Chemistry & Nutrition	BDE	3

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Year 3 Semester 1

Course	Type	AU
BG3102 Control in Biosystems	C	3
BG3104 Biomedical Imaging	C	3
BG3105 Biomedical Instrumentation	C	3
BG3112 Cardiovascular Engineering	C	3
BG3801 Bioengineering Lab 3	C	1
MLXXXX Professional Preparation	PS	1
HW0288 Engineering Communication	PS	2
FF NTU Elective 1	BDE	3
FF NTU Elective 2	BDE	3

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Year 4 Semester 1

Course	Type	AU
BG4104 Machine Learning and Optimization for Bioengineers	C	3
BG4122 Medical Device Design	C	3
BG4801 Final Year Project	C	4
Service Learning	CSL	3
CH5210 Food Process Technologies and New Production System	BDE	3
FF NTU Elective 3	BDE	3
FF NTU Elective 4	BDE	3

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Year 1 Semester 2

Course	Type	AU
CB1103 Organic Chemistry For Engineers	C	3
CB1117 Engineering Mathematics	C	4
BG1802 Bioengineering Lab 1B	C	1
EG1001 Engineers in Society	C	2
CC0003 Ethics & Civics in a Multi-Cultural World	CC	2
CC0015 Healthy Living & Wellbeing	CC	2

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Year 2 Semester 2

Course	Type	AU
BG2103 Signal Processing in Biosystems	C	3
BG2104 Electronics for Biomedical Engineering	C	3
BG2110 Bioelectricity	C	3
BG2209 Mechanics for Bioengineers	C	3
BG2802 Bioengineering Lab 2B	C	1
CB2002 Introduction to Chemical and Biological Safety	C	1
CC0007 Science & Technology for Humanity	CC	3
CH5220 ^A Food Standard - Food Safety and Risk Assessment	MPE	3

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Year 3 Semester 2

Course	Type	AU
BG3920 Professional Internship	PS	10

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Year 4 Semester 2

Course	Type	AU
BG4122 Medical Device Design	C	3
BG4801 Final Year Project	C	4
CB0494 Introduction to Data Science and Artificial Intelligence	PS	3
CH5211 Data Analytics in Food Systems	BDE	3
CH5222 ^A Future Foods - Introduction to Advanced Meet Alternative	MPE	3
FST NTU Elective 4	BDE	3

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Total (AU)**141****142***

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

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