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)

		Number of Academic Unit (AU)									
	Year of	Major Red	quirement	Interdisci	plinary Col Core	Broadening					
Programme	Study	Core (C)	Major PE (MPE)	Common Core (CC)	Professio nal Series (PS)	Professio Serve, Serve, Electives	Total				
	1	24		6				30			
Bioengineering with Second	2	30	3 [3]	8	1		3	45			
Major in FF_	3				10		12	22			
Track 1 (Global Immersion in	4	24	3 [3]		5	3	9	44			
WUR)	Total	78	6[6]	14	16	3	24	141			

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		Number of Academic Unit (AU)									
	Year of Study	Major Red	uirement	Interdisci	plinary Col	Broadening					
Programme		Core (C)	Major PE (MPE)	Common Core (CC)	Professio nal Series (PS)	Care, Serve, Learn (CSL)	and Deepening Electives (BDE)	Total			
	1	21		6				27			
Bioengineering with Second	2	27	3 [3]	8			3	41			
Major in FF_	3	13			13		6	32			
Track 2 (NTU Based)	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
	Commor	n Core (CC)		
	CC0001	Inquiry and Communication in the Interdisciplinary World	2	
	CC0003	Ethics & Civics in a Multi-Cultural World	2	
	CC0006	Sustainability: Society, Economy & Environment	3	14
	CC0007	Science & Technology for Humanity	3	
	CC0015	Health & Wellbeing	2	
Interdisciplinary Collaborative	/ ML0004	Career Design & Workplace Readiness in the V.U.C.A World	2	

Cole (ICC)	Profession	onal Series (PS)		
	CB0494	Introduction to Data Science and Artificial Intelligence	3	
	HW0288	Engineering Communication	2	16
	1	Professional Preparation	1	
	BG3920	Professional Internship	10	
	Care, Ser	rvice, Learn (CSL)		•
		Service Learning	3	3
	BIE Core			
		Engineers In Society	2	
	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 BG1801	Cellular & Molecular Biology for Bioengineers Bioengineering Lab 1A	3 1	
	BG1802	Bioengineering Lab 1B	1	
	CB2002	Introduction to Chemical and Biological Safety	1	
	BG2103	· ,	3	
	l l	Electronics for Biomedical Engineering Bioelectricity	3	
		Anatomy and Physiology	3	78
	l l	Biomaterials	3	70
Major Requirement	BG2142	Biological Thermodynamics	3	
	BG2209 BG2211	Mechanics for Bioengineers Introduction to Computational Thinking	3	
	BG2801	Bioengineering Lab 2A	1	
	BG2802	Bioengineering Lab 2B	1	
	1	Control in Biosystems	3	
	l l	Biomedical Imaging Biomedical Instrumentation	3	
	BG3105 BG3112	Cardiovascular Engineering	3 3	
	BG3801	Bioengineering Lab 3	1	
	BG4104	Machine Learning and Optimization for Bioengineers	3	
		Medical Device Design	6	
	BG4801	Final Year Project	8	
	BIE Majo	r Prescribed Electives (MPE)		
	CH5220^	Food Standard - Food Safety & Risk Assessment	3^	6
	CH5222^	Future Foods - Introduction to Advanced Meat	3^	

		1	
	CH5210 Food Process Technologies and New Production Systems	3	
	CH5211 Data Analytics in Food Systems	3	
	CH5220 [^] Food Standard - Food Safety & Risk Assessment	_	
2nd Major in	CH5222 [^] Future Foods - Introduction to Advanced Meat	_	
Future Foods (BDEs)	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		
otal			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 requirment and 2nd Major requirment concurrently

Suggeste Track 1 (0	Bioengineering) with 2nd Major in Future Foods d Study Plan for AY2025-2026 intake (BEFF) Biobal Immersion in WUR) essional Internship							
	emester 1	Туре	AU		Year 1 Se Course	emester 2	Type	AU
CB1102	Introduction to Chemical and Biomedical	C	1	_	CB1103	Organic Chemistry For Engineers	C	3
BG1141	Engineering Cellular & Molecular Biology for Bioengineers	С	3		CB1117		С	4
						Engineering Mathematics		
BG1801	Bioengineering Lab 1A	С	1		BG1802	Bioengineering Lab 1B	С	1
BG2119	Anatomy and Physiology	С	3		EG1001	Engineers in Society	С	2
MH1810	Math 1	C C	3 3		CC0003	Ethics & Civics in a Multi-Cultural World	CC	2 2
PH1011	Physics	C	3		CC0015	Healthy Living & Wellbeing	CC	2
	or Physics A (* For students without 'A' Level							
PH1012	Physics)	С	4					
CC0001	Inquiry and Communication in the Interdisciplinary World	CC	2					
			16	_ ₁₇				14
1			10	17				14
Year 2 Se	emester 1				Year 2 Se	emester 2		
Course		Туре	AU	_	Course		Type	AU
BG2131	Biomaterials	С	3		BG2103	Signal Processing in Biosystems	С	3
BG2142	Biological Thermodynamics	С	3		BG2104	Electronics for Biomedical Engineering	С	3
BG2211 BG2801	Introduction to Computational Thinking Bioengineering Lab 2A	C C	3 1		BG2110 BG2209	Bioelectricity Mechanics for Bioengineers	C C	3 3
BG3102	Control in Biosystems	С	3		BG2802	Bioengineering Lab 2B	С	1
BG3104	Biomedical Imaging	С	3		CB2002	Introduction to Chemical and Biological	С	1
						Safety		
CC0006	Sustainability: Society, Economy & Environment	CC	3		CC0007	Science & Technology for Humanity	CC	3
ML0004	Career Design & Workplace Readiness in the V.U.C.A World	CC	2		CH5220^	Food Standard - Food Safety and Risk Assessment	MPE	3
MLXXXX	Professional Preparation	PS	1					
CM5101	Food Chemistry & Nutrition	BDE	3					
			25	_				20
	emester 1 (Exchange in WUR)	_				emester 2	_	
Course	FST WUR Elective 1	Type BDE	AU 3		Course BG3920	Professional Internship	Type PS	AU 10
	FST WUR Elective 2	BDE	3					
	FST WUR Elective 3 FST WUR Elective 4	BDE BDE	3 3					
	FST WUR Elective 5	BDE	-					
			12	_				10
	emester 1	Tuna	A11			emester 2	Time	A11
Course BG3105	Biomedical Instrumentation	Type C	<u>AU</u> 3	-	Course BG4122	Medical Device Design	Type C	<u>AU</u> 3
BG3112	Cardiovascular Engineering	С	3		BG4801	Final Year Project	С	4
BG3801	Bioengineering Lab 3	С	1		CB0494	Introduction to Data Science and Artificial	PS	3
	Machine Learning and Optimization for					Intelligence		
BG4104	Bioengineers	С	3		HW0288	Engineering Communication	PS	2
BG4122	Medical Device Design	С	3		CH5211	Data Analytics in Food Systems	BDE	3
BG4801	Final Year Project	С	4		CH5222^	Future Foods - Introduction to Advanced Meet Alternative	MPE	3
	Service Learning	CSL	3			FF NTU Elective	BDE	3
CH5210	Food Process Technologies and New Production System	BDE	3					
			23	_				21
			23			Total (AU)		141
						. ,		142*

^{*}Students without 'A' Level Physics will take 'PH1012 Physics A' (4AU). ^Counted towards 2nd Major in FF requirement (total 6U)

	ioengineering) with 2nd Major in Future Foods							
Suggeste	d Study Plan for AY2025-2026 intake (BEFF)							
Year 1 Se Course	emester 1	Type	AU		Year 1 Se Course	emester 2	Type	AU
CB1102	Introduction to Chemical and Biomedical Engineering	C	1		CB1103	Organic Chemistry For Engineers	C	3
BG1141	Cellular & Molecular Biology for Bioengineers	С	3		CB1117	Engineering Mathematics	С	4
BG1801	Bioengineering Lab 1A	С	1		BG1802	Bioengineering Lab 1B	С	1
MH1810	Math 1	С	3		EG1001	Engineers in Society	С	2
PH1011	Physics	С	3		CC0003	Ethics & Civics in a Multi-Cultural World	CC	2
PH1012	or Physics A (* For students without 'A' Level Physics)	С	4		CC0015	Healthy Living & Wellbeing	CC	2
CC0001	Inquiry and Communication in the Interdisciplinary World	СС	2					
			13	_* 14				14
Year 2 Se	emester 1				Year 2 Se	emester 2		
Course		Туре	AU	_	Course		Туре	AU
BG2119 BG2131	Anatomy and Physiology Biomaterials	C C	3		BG2103 BG2104	Signal Processing in Biosystems Electronics for Biomedical Engineering	C C	3
BG2131	Biological Thermodynamics	С	3		BG2104 BG2110	Bioelectricity	С	3
BG2211	Introduction to Computational Thinking	C	3		BG2209	Mechanics for Bioengineers	C	3
BG2801	Bioengineering Lab 2A	С	1		BG2802	Bioengineering Lab 2B	С	1
CC0006	Sustainability: Society, Economy & Environment	CC	3		CB2002	Introduction to Chemical and Biological Safety	С	1
ML0004	Career Design & Workplace Readiness in the V.U.C.A World	CC	2		CC0007	Science & Technology for Humanity	CC	3
CM5101	Food Chemistry & Nutrition	BDE	3		CH5220^	Food Standard - Food Safety and Risk Assessment	MPE	3
			21	_				20
Year 3 Se	emester 1				Year 3 Se	emester 2		
Course BG3102	Central in Ricayatema	Type C	AU 3	_	Course BG3920	Professional Internship	Type PS	AU 10
BG3102 BG3104	Control in Biosystems Biomedical Imaging	C	3		BG3920	Professional internship	F3	10
BG3105	Biomedical Instrumentation	С	3					
BG3112 BG3801	Cardiovascular Engineering Bioengineering Lab 3	C C	3 1					
MI XXXX	Professional Preparation	PS	1					
	Engineering Communication	PS	2					
1100200	FF NTU Elective 1	BDE	3					
	FF NTU Elective 2	BDE	3					
			22	_				10
Year 4 Se	emester 1	_			Year 4 Se	emester 2	_	
Course	Machine Learning and Optimization for	Туре	AU	_	Course	Madical Davies Davies	Туре	AU
BG4104	Bioengineers	С	3			Medical Device Design	С	3
BG4122	Medical Device Design	С	3		BG4801	Final Year Project Introduction to Data Science and Artificial	С	4
BG4801	Final Year Project	С	4		CB0494	Intelligence	PS	3
	Service Learning	CSL	3		CH5211	Data Analytics in Food Systems	BDE	3
CH5210	Food Process Technologies and New Production System	BDE	3		CH5222^	Future Foods - Introduction to Advanced Meet Alternative	MPE	3
	FF NTU Elective 3	BDE	3			FST NTU Elective 4	BDE	3
	FF NTU Elective 4	BDE	3					
			22	_	<u></u>	Total (AU)		19 141
						iotal (AO)		141

^{*}Students without 'A' Level Physics will take 'PH1012 Physics A' (4AU). ^Counted towards 2nd Major in FST requirement (total 6U)