## BACHELOR OF SCIENCE (INDUSTRIAL BIOLOGY) SSCBH 20202021

## YEAR 1

	SEMESTER	1			SEMESTER	2	
Code	Course	Credit	Pre-req	Code	Course	Credit	Pre-req
SSCB 1613	Microbiology (+Lab)	3		SSCG 1703	Cellular and Molecular Biology	3	
SSCG 1112	Introduction to Biomolecules	2		SSCG 1123	Cellular Biochemistry and Metabolism (+Lab)	3	SSCG 1112
UHLB 1112	English Communication Skills	2		SSCB 1422	Introduction to Biotechology	2	
SSCM 1023	Mathematical Methods 1	3		SSCG 1103	Bioorganic Chemistry	3	
SSCM 1103	Statistics	3		SSCK 1203	Analytical Chemistry for Engineering	3	
UHMT 1012	Graduate Success Attributes	2		SSCK 1891	Analytical Chemistry Practical	1	
UHMS 1182	Appreciation of Ethics and Civilisations (Local)	2		UHIS 1022	Philosophy and Current Issues (Local)	2	
UHLM 1012	Malay Language Communication (International)	2		UHMS 1182 UHIS 1022	Appreciation and Current Ethics and Civilizations (International) or Philosophy and Current Issues (International)	2	

 $17 \operatorname{credit}$ 

17 credit

## YEAR 2

**SEMESTER 2** 

	SEMESTER	1			SEMESTER	2	
Code	Course	Credit	Pre-req	Code	Course	Credit	Pre-req
SSCG 2713	Genetic Engineering (+Lab)	3	SSCG 1703	SSCB 2503	Fermentation Technology (+Lab)	3	SSCB 2513
SSCB 2513	Introduction to Bioprocess Engineering (+Lab)	3	SSCB 1613	SSCB 2823	Enzyme Technology and Biocatalysis (+Lab)	3	SSCG 1123
SBSD 1033	Principles of Management	3		SSCG 2423	Bioethics in Research and	3	
UHLB 2122	Academic Communication Skills	2	UHLB 1112	SHAF 1013	Development Principles of Marketing	3	
UKQ* 2**2	Co-curriculum and Service Learning	2		UHIT 2032	Sciences and Technology Thinking	2	
UHL* 1112	Foreign Language	2		U*** 2**2	Elective of Knowledge Enhancement Cluster or Elective of Generic Skills Cluster	2	
Total 15 cree	lit hours		·	Total 16 cre	edit hours		

	SEMESTER	1	YE	AK J	SEMEST	ER 2	
Code	Course	Credit	Pre-req	Code	Courses	Credit	Pre-req
SSCB 3513	Bioprocess Engineering	3	SSCB 2513	SSCG 3823	Biocomputation	3	
SSCB 3313	Tissue Culture Technology (+Lab)	3		SSCB 3403	Bioinformatics Research Methodology	3	
UBSS 1032	Introduction to Entrepreneuship	2		SHAD 1043	Organizational Behaviour	2	
				UHLB 3132	Professional Communication	1	UHLB 2122
				UKQT3001	Skills Extracurricular Experiential Learning	1	
	Elective (Choose 9 d	redits)			Elective (Choos	e 6 credits)	
SSCB 3713	Techniques in Molecular Biotechnology*	3	SSCG 2713	SSCG 3603 SSCG 3303 SSCB 3703	Virology Immunology Molecular	3 3 3	
SSCG 3673	Physiology and Screening of	3	SSCB 1613	SSCG 3723	Biotechnology Gene expression	3	
SSCB 3633	Industrial Microorganisms*	0					
SSCB 3633 SSCB 3653	Food Microbiology Industrial Microbiology	3 3					
SSCG 3213	Biological Control and Environmental Conservation	3					
	17 credit				18 cred	it	
a ant Cana an	+	Note	: *Compulsory	Elective Cours	es		
hort Semes		Note		Elective Cours	es		
Code	Course	Note	Credit	Elective Cours	es		
Code	Course Industrial Training	Note		Elective Cours	es		
Code SSCU 3905	Course	Note	Credit	Elective Cours	es		
Code SSCU 3905 EAR 4	Course Industrial Training 5 credit	Note	Credit	Elective Cours			
Code SSCU 3905 EAR 4	Course Industrial Training 5 credit	Credit	Credit			Credit	Pre-req
Code SSCU 3905 EAR 4 SEMESTER Code	Course Industrial Training 5 credit		Credit 5 (HW)	SEMESTER	2	Credit 4	-
Code SSCU 3905 EAR 4 SEMESTER Code SSCB 4313	Course Industrial Training 5 credit .1 .1 .2 .2 .2 .2 .2	Credit	Credit 5 (HW) Pre-req	SEMESTER Code	2 Courses Undergraduate		-
Code SSCU 3905 EAR 4 SEMESTER Code SSCB 4313	Course Industrial Training 5 credit 5 credit Courses Application of Tissue Culture (+Lab) Undergraduate	Credit 3 2	Credit 5 (HW) Pre-req	SEMESTER Code	2 Courses Undergraduate	4	-
Code SSCU 3905 EAR 4 SEMESTER	Course Industrial Training 5 credit 5 credit 1 1 Courses Application of Tissue Culture (+Lab) Undergraduate Project I** <i>Elective (Choose 9 o</i> Protein Separation Techniques in	Credit 3 2	Credit 5 (HW) Pre-req	SEMESTER Code	2 Courses Undergraduate Project II	4 e 9 credits)	SSCU 490
Code SSCU 3905 EAR 4 SEMESTER Code SSCB 4313 SSCU 4902	Course Industrial Training 5 credit 5 credit 1 1 Courses Application of Tissue Culture (+Lab) Undergraduate Project I** <i>Elective (Choose 9 o</i> Protein Separation Techniques in Biotechnology	Credit 3 2 credits)	Credit 5 (HW) Pre-req SSCB 3313	SEMESTER Code SSCU 4904	2 Courses Undergraduate Project II <i>Elective (Choose</i> Biosensor Technolo	4 e 9 credits)	SSCU 490
Code SSCU 3905 EAR 4 SEMESTER Code SSCB 4313 SSCU 4902 SSCB 4813	Course Industrial Training 5 credit 5 credit .1 .1 Courses Application of Tissue Culture (+Lab) Undergraduate Project I** <i>Elective (Choose 9 d</i> Protein Separation Techniques in Biotechnology Applied Microbial Biochemistry and	Credit 3 2 credits) 3	Credit 5 (HW) Pre-req SSCB 3313 SSCB 2823	SEMESTER Code SSCU 4904 SSCB 4243	2 Courses Undergraduate Project II <i>Elective (Choose</i> Biosensor Technolo (+Lab)* Environmental	4 9 <b>9 credits)</b> 9gy 3 3	SSCU 490
Code SSCU 3905 EAR 4 SEMESTER Code SSCB 4313 SSCU 4902 SSCB 4813 SSCB 4113	Course Industrial Training 5 credit 5 credit 5 credit 1 Courses Application of Tissue Culture (+Lab) Undergraduate Project I** <i>Elective (Choose 9 d</i> Protein Separation Techniques in Biotechnology Applied Microbial Biochemistry and Biotransformation* Biorefinery Technology Industrial Waste	Credit 3 2 credits) 3 3	Credit 5 (HW) Pre-req SSCB 3313 SSCB 2823	SEMESTER Code SSCU 4904 SSCB 4243 SSCB 4203	2 Courses Undergraduate Project II <i>Elective (Choose</i> Biosensor Technolo (+Lab)* Environmental Biotechnology Bioremediation and	4 9 <b>9 credits)</b> 9gy 3 3	SSCU 490
Code SSCU 3905 EAR 4 SEMESTER Code SSCB 4313 SSCU 4902 SSCB 4813 SSCB 4813 SSCB 4113	Course Industrial Training 5 credit 5 credit .1 .1 Application of Tissue Culture (+Lab) Undergraduate Project I** <i>Elective (Choose 9 of Protein Separation</i> Techniques in Biotechnology Applied Microbial Biochemistry and Biotransformation*	Credit 3 2 credits) 3 3 3	Credit 5 (HW) Pre-req SSCB 3313 SSCB 2823	SEMESTER Code SSCU 4904 SSCB 4243 SSCB 4203 SSCB 4223	2 Courses Undergraduate Project II Elective (Choose Biosensor Technolo (+Lab)* Environmental Biotechnology Bioremediation and Biodegradation	4 9 <b>9 credits)</b> 9gy 3 3 4 3	SSCU 490
Code SSCU 3905 EAR 4 SEMESTER Code SSCB 4313 SSCU 4902 SSCB 4813 SSCB 4813 SSCB 4113 SSCB 4113 SSCB 4513 SSCB 4213	Course Industrial Training 5 credit 5 credit 5 credit 1 Courses Application of Tissue Culture (+Lab) Undergraduate Project I** <i>Elective (Choose 9 a</i> Protein Separation Techniques in Biotechnology Applied Microbial Biochemistry and Biotransformation* Biorefinery Technology Industrial Waste Management Pharmaceutical	Credit 3 2 2 2 2 2 2 2 3 3 3 3 3 3 3 3 3	Credit 5 (HW) Pre-req SSCB 3313 SSCB 2823	SEMESTER Code SSCU 4904 SSCB 4243 SSCB 4203 SSCB 4223	2 Courses Undergraduate Project II Elective (Choose Biosensor Technolo (+Lab)* Environmental Biotechnology Bioremediation and Biodegradation	4 9 <b>9 credits)</b> 1993 3 4 3 3	SSCU 490
Code SSCU 3905 EAR 4 SEMESTER Code SSCB 4313 SSCU 4902 SSCB 4813 SSCB 4813 SSCB 4113 SSCB 4113 SSCB 4113	Course Industrial Training 5 credit 5 credit 5 credit 1 Courses Application of Tissue Culture (+Lab) Undergraduate Project I** <i>Elective (Choose 9 d</i> Protein Separation Techniques in Biotechnology Applied Microbial Biochemistry and Biotransformation* Biorefinery Technology Industrial Waste Management Pharmaceutical Biotechnology	Credit 3 2 2 2 2 2 2 2 3 3 3 3 3 3 3	Credit 5 (HW) Pre-req SSCB 3313 SSCB 2823 SSCG 1123	SEMESTER Code SSCU 4904 SSCB 4243 SSCB 4203 SSCB 4223	2 Courses Undergraduate Project II <i>Elective (Choose</i> Biosensor Technolo (+Lab)* Environmental Biotechnology Bioremediation and Biodegradation Gene Therapy 13 cred	4 9 <b>9 credits)</b> 1993 3 4 3 3	Pre-req SSCU 490 SSCB 2824