

**Struktur Program Mikrobiologi (3 laluan) / Microbiology Programme Structure (3 tracks)**

TAHUN	SEM	TERAS			CITRA UNIVERSITI			LALUAN			JUMLAH		
		Wajib Fakulti (WF)	Wajib Program (WP)	Wajib Major (WM)	Citra Wajib (CW)	Citra Dalam (CD)	Citra Luar (CL)	Keusahawanan (U)	Industri (I)	Keserjanaan (S)	U	I	S
1	I	LMCE1042/ LMCE1062/ LMCE1072/ LMCE1082	STBP1023 STBP1043			STPD2013 (C1) C1-C6	LMCK1331(C2) LMCK1531(C4) (C1 – C6)				13 <sup>A</sup>		
	II	LMCE1052	STBP1013 STKK1243		LMCW 1022	STAB1003 (C5) (C1-C6)	LMCK1421(C3) LMCK1621(C1) (C1 – C6)				13/15 <sup>A</sup>		
2	I	LMCE1062/ LMCE2082/ LMCE2092/ LMCE2103	STBP2032	STBC2012 STBM2013 STBM2213	LMCW 2163	C1-C6	LMCK2711(C5) LMCK2811(C6)				17/18 <sup>A</sup>		
	II		STBP2013 STBP2023 STBP2033 STBP2203		LMCW 2173 LMCW 2022	C1-C6	C1-C6				17 <sup>A</sup>		
3	I	LMCE3051/ LMCE3061/ LMCE3071		STBM3012 STBM3033 STBM3112			C1-C6	CMIE2013	STAB2143 ✱STBT2132 ✱STKM2112 ✱STSN3062	STAB2143 STBP3012	11 <sup>A</sup>	8 <sup>A</sup>	13 <sup>A</sup>
	II			STBM3043 STBM3442 STBM3992				CMIE2023 ✱STBM3223	STBM3223	STBC3022 STBM3223 STBP2022	10 <sup>A</sup>	10 <sup>A</sup>	14 <sup>A</sup>
	III							CMIE3033			3 <sup>A</sup>	-	-
4	I			STBM4996				✱STBM4023 ✱STBK4213 ✱STBT4013 ✱STKM2112 ✱STKM3022	STBM4023 ✱STBK4213 ✱STBT4013 ✱STKM3022	STBM4023	6 <sup>A</sup>	9 <sup>A</sup>	9 <sup>A</sup>
	II			STBM4889 (12 kredit)							12 <sup>A</sup>		
		5 <sup>*</sup>	26	40	10	10	20	15	15	15	102 <sup>A</sup>	99 <sup>A</sup>	108 <sup>A</sup>
<b>JUMLAH PENUH</b>		71 <sup>*</sup>			40			15			126 <sup>*</sup>		

**Petunjuk:**

- \* Bagi pelajar MUET 2 mengambil 7 kredit (tambahan 2 kredit). Sila rujuk Senarai Kursus Wajib Fakulti.
- ^ Bilangan unit tidak termasuk jumlah kredit Citra C1-C6 yang tidak dinyatakan kod kursus dan unit Kursus pilihan mengikut modul (•)
- Kursus Pilihan Mengikut Modul

**Kursus Citra Universiti**

C1 – Minimum 4 kredit      C2 – Minimum 4 kredit      C3 – Minimum 2 kredit  
C4 – Minimum 2 kredit      C5 – Minimum 2 kredit      C6 – Minimum 2 kredit  
CD - Citra Dalam Fakulti – **MAKSIMUM 10 UNIT**  
CL - Citra Luar Fakulti – **MINIMUM 20 UNIT**

**SENARAI KURSUS/ LIST OF COURSES**

<b>Taraf</b>	<b>Kursus</b>	<b>Tajuk</b>	<b>Title</b>
Wajib Fakulti (WF)	LMCE1012	<i>Academic Communication I</i>	
	LMCE1022	<i>Academic Communication II</i>	
	LMCE2012	<i>Workplace Communication I</i>	
	LMCE2022	<i>Workplace Communication II</i>	
	LMCE3041	<i>Effective Job Search and Application</i>	
Wajib Program (WP)	STBP1013	Asas Biologi Molekul	<i>Fundamentals of Molecular Biology</i>
	STBP1023	Biologi Sel	<i>Cell Biology</i>
	STBP1043	Mikrobiologi Asas	<i>Fundamental Microbiology</i>
	STBP2013	Biokimia	<i>Biochemistry</i>
	STBP2023	Teknologi DNA Rekombinan I	<i>Recombinant DNA Technology I</i>
	STBP2032	Genetik Mikrob	<i>Microbial Genetics</i>
	STBP2033	Teknologi DNA Rekombinan II	<i>Recombinant DNA Technology II</i>
	STBP2203	Amali Biokimia I	<i>Biochemistry Practicals I</i>
STKK1243	Kimia Am	<i>General Chemistry</i>	
Wajib Major (WM)	STBC2012	Biologi Molekul Pengkomputeran	<i>Computational Molecular Biology</i>
	STBM2013	Imunologi	<i>Immunology</i>
	STBM2213	Taksonomi dan Kepelbagaian Mikrob	<i>Microbial Taxonomy and Diversity</i>
	STBM3012	Metabolisme Mikrob	<i>Microbial Metabolism</i>
	STBM3033	Mikrobiologi Persekitaran	<i>Environmental Microbiology</i>
	STBM3043	Mikrobiologi Patogen dan Diagnosis	<i>Diagnosis and Pathogenic Microbiology</i>
	STBM3112	Virologi	<i>Virology</i>
	STBM3442	Komunikasi Saintifik	<i>Scientific Communication</i>
	STBM3992	Latihan Ilmiah I	<i>Research Project I</i>
STBM4889	Latihan Industri	<i>Industrial Training</i>	
STBM4996	Latihan Ilmiah II	<i>Research Project II</i>	
Citra Wajib (CW)	LMCW1022	Asas Keusahawanan dan Inovasi	<i>Fundamentals of Entrepreneurship and Innovation</i>
	LMCW2022	Pengurusan dan Analitik Data	<i>Data Analysis and Management</i>
	LMCW2163	Tamadun Islam dan Tamadun Asia	<i>Islamic and Asian Civilization</i>
	LMCW2173	Hubungan Etnik	<i>Ethnic Relationships</i>
Citra Dalam (CD)	STPD2013	Sejarah dan Falsafah Sains (C1)	<i>History and Philosophy of Science (C1)</i>
	STAB1003	Genetik dan Masyarakat (C5)	<i>Genetic and Society(C5)</i>

Citra Luar (CL)	LMCK1331	Komunikasi Efektif (C2)	<i>Effective Communication (C2)</i>
	LMCK1421	Pemikiran Kritis dan Penyelesaian Masalah (C3)	<i>Critical Thinking and Problem Solving (C3)</i>
	LMCK1531	Kepimpinan dan Kreativiti (C4)	<i>Leadership and Creativity (C4)</i>
	LMCK1621	Etika dan Profesional (C1)	<i>Ethics and Professionals(C1)</i>
	LMCK2711	Tanggungjawab Alam Sekitar (C5)	<i>Environmental Responsibility (C5)</i>
	LMCK2811	Sosial dan Kebertanggungjawaban (C6)	<i>Social and Responsibility (C6)</i>
Keusahawanan (U)	CMIE2013	Usahaniaga Asas I	<i>Junior Startup I</i>
	CMIE2023	Usahaniaga Asas II	<i>Junior Startup II</i>
	CMIE3033	Kajian Kes Keusahawanan	<i>Entrepreneurship Case Study</i>
	STBK4213 ✎	Biokimia dan Industri	<i>Biochemistry and Industry</i>
	STKM2112 ✎	Mikrobiologi Makanan	<i>Food Microbiology</i>
	STKM3022 ✎	Kualiti, Keselamatan dan Perundangan Makanan	<i>Quality, Safety and Food Legislation</i>
	STBM4023 ✎	Fermentasi Industri	<i>Industrial Fermentation</i>
	STBT4013 ✎	Lawatan Industri Bioteknologi	<i>Biotechnology Industrial Visits</i>
Industri (I)	STAB2143	Analisis Statistik Biologi	<i>Biological Statistics Analysis</i>
	STBM3223	Interaksi Mikrob-Tumbuhan	<i>Microbe-Plant Interactions</i>
	STBM4023	Fermentasi Industri	<i>Industrial Fermentation</i>
	STBK4213 ✎	Biokimia dan Industri	<i>Biochemistry and Industry</i>
	STKM2112 ✎	Mikrobiologi Makanan	<i>Food Microbiology</i>
	STKM3022 ✎	Kualiti, Keselamatan dan Perundangan Makanan	<i>Quality, Safety and Food Legislation</i>
	STBT2132 ✎	Pengurusan Bioteknologi	<i>Biotechnology Management</i>
	STBT4013 ✎	Lawatan Industri Bioteknologi	<i>Biotechnology Industrial Visits</i>
	STSN3062 ✎	Keselamatan Industri	<i>Industrial Safety</i>
Kesarja naan (S)	STAB2143	Analisis Statistik Biologi	<i>Biological Statistics Analysis</i>
	STBC3022	Genomik	<i>Genomics</i>
	STBM3223	Interaksi Mikrob-Tumbuhan	<i>Microbe-Plant Interactions</i>
	STBM4023	Fermentasi Industri	<i>Industrial Fermentation</i>
	STBP2022	Pengekspresan Gen	<i>Gene Expression</i>
	STBP3012	Biologi Molekul	<i>Molecular Biology</i>

✎ Kursus Pilihan Mengikut Modul