

BACHELOR OF SCIENCE IN CHEMISTRY SESSION 2021/2022 (132 CREDITS)			
UNIVERSITY COURSES (14 CREDITS)			
Course Code	Course Name		Credit
GIG1012 / GLT1017*	Philosophy and Current Issues (local students) / Basic Malay Language (*only for international students)		2
GIG1013	Appreciation of Ethics and Civilisations		2
GIG1003	Basic Entrepreneurship Enculturation		2
GKA/GKI/GKK/ GKP/GKS/GKU	Co-Curriculum		4
GLTxxxx	English Course (subject to MUET bands)		4
CORE COURSES (77 CREDITS)			
Course Code	Course Name		Credit
LEVEL 1 (26 CREDITS)			
SIX1015	Science, Technology and Society		2
SIX1016	Statistics		3
SIC1001	Principle Chemistry		2
SIC1006	Computer Programming for the Sciences		3
SIC1007	Inorganic Chemistry I		3
SIC1008	Organic Chemistry I		3
SIC1009	Physical Chemistry I		3
SIC1010	Mathematics in Chemistry		2
SIC1011	Safety and Basic Laboratory Techniques***		3
Course Code	Course Name	Pre-Requisite(s)	Credit
SIC1012	Laboratory Skills**	SIC1011	2
LEVEL 2 (25 CREDITS)			
SIC2016	Inorganic Chemistry II	SIC1001 and SIC1007 Taken concurrently with SIC2017	3
SIC2017	Practical of Inorganic Chemistry II**	SIC1007 and SIC1012 Taken concurrently with SIC2016	2
SIC2018	Organic Chemistry II	SIC1001 and SIC1008 Taken concurrently with SIC2019	3

SIC2019	Practical of Organic Chemistry II**	<i>SIC1008 and SIC1012 Taken concurrently with SIC2018</i>	2
SIC2020	Physical Chemistry II	<i>SIC1001, SIC1009 and SIC1010 Taken concurrently with SIC2021</i>	3
SIC2021	Practical of Physical Chemistry II**	<i>SIC1009 and SIC1012 Taken concurrently with SIC2020</i>	2
SIC2022	Basic Analytical Chemistry***	<i>SIC1001, SIC1007 and SIC1012</i>	3
SIC2023	Molecular Spectroscopy	<i>SIC1001, SIC1009 and SIC1010</i>	3
SIC2024	Spectroscopic Methods in Organic Chemistry	<i>SIC1008 Taken concurrently with SIC2018</i>	2
SIC2025	Chemistry and Society	<i>SIC1001, SIC1007, SIC1008, SIC1009, and SIC1010</i>	2
<b>LEVEL 3 (26 CREDITS)</b>			
SIC3020	Inorganic Chemistry III	<i>SIC2016 Taken concurrently with SIC3021</i>	2
SIC3021	Practical of Inorganic Chemistry III**	<i>SIC2016 and SIC2017 Taken concurrently with SIC3020</i>	2
SIC3022	Organic Chemistry III	<i>SIC2018 Taken concurrently with SIC3023</i>	2
SIC3023	Practical of Organic Chemistry III**	<i>SIC2018 and SIC2019 Taken concurrently with SIC3022</i>	2
SIC3024	Physical Chemistry III	<i>SIC2020 Taken concurrently with SIC3025</i>	2
SIC3025	Practical of Physical Chemistry III**	<i>SIC2020 and SIC2021 Taken concurrently with SIC3024</i>	2
SIC3026	Industrial Training	<i>SIC2016, SIC2018, SIC2020 and SIC2022</i>	8
SIC3027	Research Project	<i>SIC2016, SIC2018, SIC2020 and SIC2022</i>	6

**PURE CHEMISTRY PACKAGE****ELECTIVE COURSES (41 CREDITS)****(I) PROGRAMME ELECTIVE (33 Credit)**

<b>Course Code</b>	<b>Course Name</b>	<b>Pre-Requisite(s)</b>	<b>Credit</b>
SIC3028	Advanced Analytical Chemistry***	SIC2022	3
SIC3029	Polymer Chemistry***	SIC2020 and SIC2021	3
SIC3030	Heterocyclic and Medicinal Chemistry	SIC2018	3
SIC3031	Electrochemistry	SIC2016	3
SIC3032	Environmental Chemistry***	SIC2022	3
SIC3033	Natural Products and Biosynthesis	SIC2018	3
SIC3034	Organic Synthesis	SIC2018	2
SIC3035	Mechanistic Organic Chemistry	SIC2018	3
SIC3036	Physical Organic Chemistry	SIC2018	3
SIC3037	Bioinorganic Chemistry	SIC2016	2
SIC3038	Nuclear Chemistry	SIC2016	2
SIC3039	Materials Chemistry	SIC2016 and SIC2020	3
SIC3040	Chemometrics***	SIC2020	3
SIC3041	Computational Chemistry***	SIC2020	3
SIC3042	Colloid Chemistry***	SIC2020 and SIC2021	3

**(II) ELECTIVE UNIVERSITY COURSES (8 CREDITS)****Student Holistic Empowerment [SHE]**

Choose one course from each cluster

<b>Cluster</b>	<b>Cluster Title</b>	<b>Credits</b>
Cluster 1	Thinking Matters: Mind and Intellect	2
Cluster 2	Emotional, Physical and Spiritual Intelligence: Heart, Body and Soul	2
Cluster 3	Technology/Artificial Intelligence and Data Analytics: I-Techie	2
Cluster 4	Global Issues and Community Sustainability: Making The World a Better Place	2

**APPLIED CHEMISTRY PACKAGE****ELECTIVE COURSES (41 CREDITS)****(I) PROGRAMME ELECTIVE COURSES (33 Credits)**

Course Code	Course Name	Pre-Requisite(s)	Credit
SIC3040	Chemometrics***	SIC2020	3
SIC3041	Computational Chemistry***	SIC2020	3
SIC3042	Colloid Chemistry***	SIC2020 and SIC2021	3
SIC3043	Analytical Chemistry and Instrumentation***	SIC2022	3
SIC3044	Industrial Chemistry	SIC2016	3
SIC3045	Industrial Polymer Chemistry***	SIC2020 and SIC2021	3
SIC3046	Oleochemistry	SIC2018	3
SIC3047	Petrochemistry	SIC2016 and SIC2018	3
SIC3048	Process Chemistry	SIC3044	3
SIC3049	Food Chemistry	SIC2018	2
SIC3050	Natural Products and Biotechnological Processes	SIC2018	2
SIC3051	Applied Electrochemistry	SIC2020	3
SIC3052	Catalysis	SIC2016	2
SIC3053	Quality Assurance in Chemical Laboratory	SIC2022	2
SIC3054	Environmental Pollution and Waste Management***	SIC2022	3
SIC3055	Liquid Crystals	SIC2020	2

**(II) ELECTIVE UNIVERSITY COURSES (8 CREDITS)****Student Holistic Empowerment [SHE]**

Choose one course from each cluster

Cluster	Cluster Title	Credits
Cluster 1	Thinking Matters: Mind and Intellect	2
Cluster 2	Emotional, Physical and Spiritual Intelligence: Heart, Body and Soul	2
Cluster 3	Technology/Artificial Intelligence and Data Analytics: I-Techie	2
Cluster 4	Global Issues and Community Sustainability: Making The World a Better Place	2

\* For non-Malaysian

\*\*\* With practical component

\*\* Practical course

**LIST OF COURSES ACCORDING TO SEMESTER  
(Programme Planning)  
BACHELOR OF SCIENCE IN CHEMISTRY**

Year	Component	Semester I			Semester II			
		Code	Course	Credit	Code	Course	Credit	
1	University courses	GIG1012/ GLT1017	Philosophy and Current Issues/ Basic Malay Language*	2	GIG1013	Appreciation of Ethics and Civilisations	2	
		GLTXXXX	English	2	GLTXXXX	English	2	
					GIG1003	Basic Entrepreneurship Enculturation	2	
					GKA/GKI/ GKK/ GKP/ GKS/GKU 1001	Co-Curriculum	2	
	Core courses	SIX1015	Science, Technology and Society	2	SIX1016	Statistics	3	
		SIC1001	Principles of Chemistry	2	SIC1009	Physical Chemistry I	3	
		SIC1007	Inorganic Chemistry I	3	SIC1010	Mathematics in Chemistry	2	
		SIC1008	Organic Chemistry I	3	SIC1012	Laboratory Skills	2	
		SIC1011	Safety and Basic Laboratory Techniques	3				
	Elective courses		Student Holistic Empowerment (SHE) Cluster 1: Thinking Matters: Mind & Intellect	2		Student Holistic Empowerment (SHE) Cluster 2: Emotional & Spiritual Intelligence: Heart & Soul	2	
	Total Credit				19			20

Year	Component	Semester I			Semester II		
		Code	Course	Credit	Code	Course	Credit
2	University courses				GKA/GKG KK/GKP/ GKS/GKU 1001	Co-Curriculum	2
	Core courses	SIC2016	Inorganic Chemistry II	3	SIC1006	Computer Programming for the Sciences	3
		SIC2017	Practical of Inorganic Chemistry II	2	SIC2023	Molecular Spectroscopy	3
		SIC2018	Organic Chemistry II	3	SIC2020	Physical Chemistry II	3
		SIC2019	Practical of Organic Chemistry II	2	SIC2021	Practical of Physical Chemistry II	2
		SIC2022	Basic Analytical Chemistry	3	SIC2025	Chemistry and Society	2
		SIC2024	Spectroscopic Methods in Organic Chemistry	2			
	Elective courses		Student Holistic Empowerment (SHE) Cluster 3: Technology/ Artificial Intelligence and Data Analytics: I- Technie	2		Student Holistic Empowerment (SHE) Cluster 4: Global Issue and Community Sustainability: Making the World a Better Place	2
	<b>Total Credit</b>			17			17

Year	Component	Semester I			Semester II		
		Code	Course	Credit	Code	Course	Credit
3	University courses						
	Core courses	SIC3022	Organic Chemistry III	2	SIC3020	Inorganic Chemistry III	2
		SIC3023	Practical of Organic Chemistry III	2	SIC3021	Practical of Inorganic Chemistry III	2
		SIC3024	Physical Chemistry III	2	SIC3027	Research Project ( <i>Progressive</i> )	3
		SIC3025	Practical of Physical Chemistry III	2			
	Elective courses		Programme Elective**	8		Programme Elective**	10
	<b>Total Credit</b>	16			17		

Year	Component	Semester I			Semester II		
		Code	Course	Credit	Code	Course	Credit
4	University courses						
	Core courses	SIC3027	Research Project ( <i>Progressive</i> )	3	SIC3026	Industrial Training	8
	Elective courses		Programme Elective**	15			
	Total Credit				18		
Overall Total Credit		132					

\*For non-Malaysian

\*\*Elective courses should be selected according to the packages below.

**Programme Elective Courses follow the packages below.**

Pure Chemistry Package		
<b>**Programme Elective Courses (33 Credits)</b>		
Course Code	Course Name	Credit
SIC3028	Advanced Analytical Chemistry	3
SIC3029	Polymer Chemistry	3
SIC3030	Heterocyclic and Medicinal Chemistry	3
SIC3031	Electrochemistry	3
SIC3032	Environmental Chemistry	3
SIC3033	Natural Products and Biosynthesis	3
SIC3034	Organic Synthesis	2
SIC3035	Mechanistic Organic Chemistry	3
SIC3036	Physical Organic Chemistry	3
SIC3037	Bioinorganic Chemistry	2
SIC3038	Nuclear Chemistry	2
SIC3039	Materials Chemistry	3
SIC3040	Chemometrics	3
SIC3041	Computational Chemistry	3
SIC3042	Colloid Chemistry	3

OR

Applied Chemistry Package		
<b>** Programme Elective Courses (33 Credits)</b>		
Course Code	Course Name	Credit
SIC3040	Chemometrics	3
SIC3041	Computational Chemistry	3
SIC3042	Colloid Chemistry	3
SIC3043	Analytical Chemistry and Instrumentation	3
SIC3044	Industrial Chemistry	3
SIC3045	Industrial Polymer Chemistry	3
SIC3046	Oleochemistry	3
SIC3047	Petrochemistry	3
SIC3048	Process Chemistry	3
SIC3049	Food Chemistry	2
SIC3050	Natural Products and Biotechnological Processes	2
SIC3051	Applied Electrochemistry	3
SIC3052	Catalysis	2
SIC3053	Quality Assurance in Chemical Laboratory	2
SIC3054	Environmental Pollution and Waste Management	3
SIC3055	Liquid Crystals	2