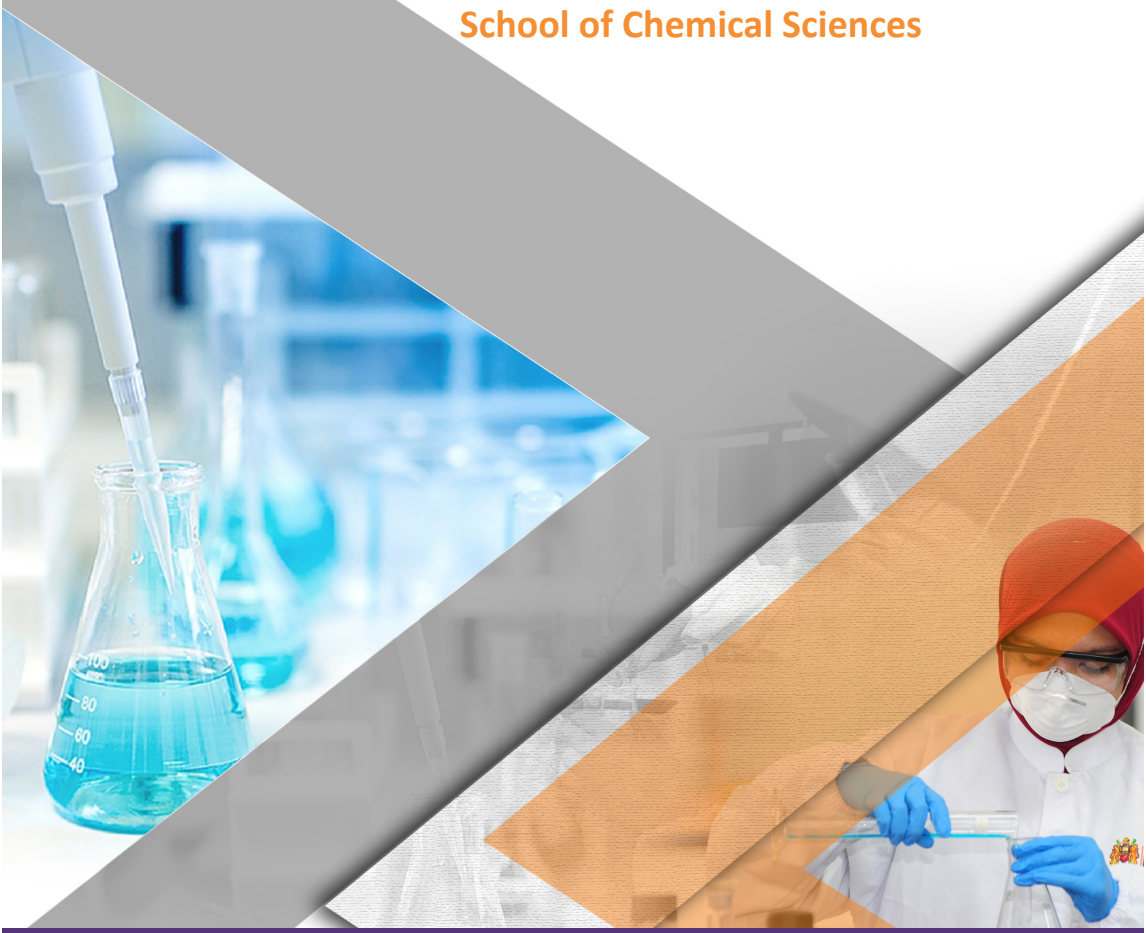
UNIVERSITI SAINS MALAYSIA

ROYAL SOCIETY OF CHEMISTRY

B.Sc. (Hons.)
(Chemistry)

School of Chemical Sciences



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MAIN ADMINISTRATIVE STAFF

DEAN

Prof. Dr. Rohana Adnan

DEPUTY DEANS

Assoc. Prof. Dr. Melati Khairuddean
(Academic, Career & International)

Assoc. Prof. Dr. Oo Chuan Wei
(Research, Innovation & Industry-Community Engagement)

PROGRAMME MANAGERS

Assoc. Prof. Dr. Ng Eng Poh
(Physical Chemistry)

Dr. Mohd Rizal Razali
(Organic & Inorganic Chemistry)

Dr. Faiz Bukhari Mohd. Suah
(Analytical Chemistry)

Dr. Noor Hana Hanif Abu Bakar
(Industrial Chemistry)

ASSISTANT REGISTRARS

Mr. Subramaniam A/L Govindan
Principal Assistant Registrar
(HR & Postgraduates)

Ms. Fauziah Rastam
Senior Assistant Registrar
(Academic)

COURSE STRUCTURE

(i) Structure of Study Programme

Course Component	Credit Unit Requirement B.Sc. (Hons.)
Core **(T)**	70
Elective **(E)** or Elective **(E)** & Minor **(M)**	32
University **(U)**	18
Total	**120**

(ii) Industrial Training

Students are encouraged to apply for Industrial Training (KIE361/4) after the 6th semester.

(iii) Final Year Project

Students are encouraged to register for Chemistry Project (KUE409/6) during their final year of studies. This involves conducting research work for 2 semesters and submitting a Final Year Project report.

Students who do not wish to register for the Chemistry Project (KUE409/6) may fulfill the 6 credits requirement by registering other theory courses offered by the School.

(iv) Assessment

Course assessment will be based on:

(i) Examination
(ii) Course Work

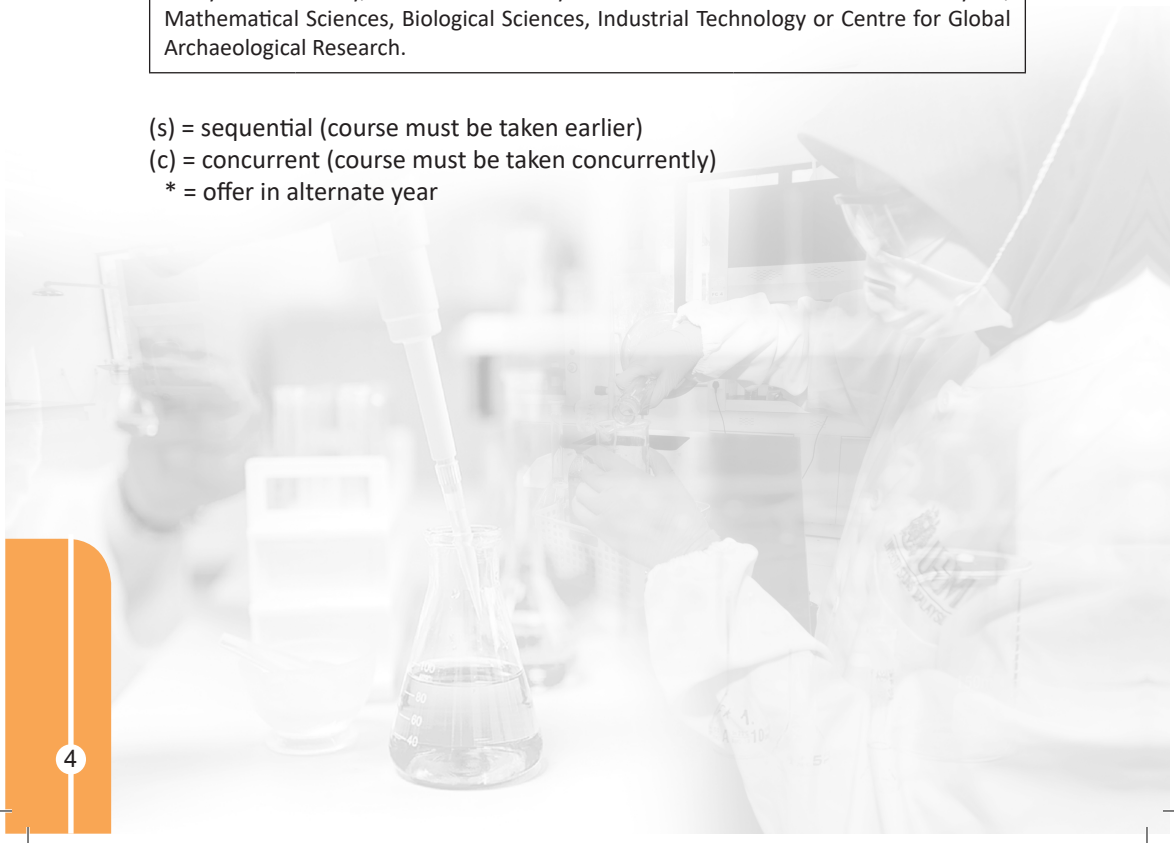
The assessment will cover knowledge, applications, analytical and writing skills. Skills will be assessed through the course work in the form of assignments, quizzes, tests, presentations or laboratory reports.

LIST OF COURSES OFFERED

B.Sc. (Hons.) (Chemistry)		
(i) Core Courses (T) - 70 credits		
Selection of 3 or 4 credits		**Pre-requisites**
ZCT103/3	Physics III (Vibrations, Waves and Optics)	
BOM114/4	Fundamental Genetics	
Compulsory - 61 credits		**Pre-requisites**
MAA101/4	Calculus for Science Student 1	
MAA102/4	Calculus for Science Student 2	
KUT101/2	General Chemistry Practical I	
KUT102/2	General Chemistry Practical II	
KTT112/4	Inorganic Chemistry I	
KOT122/4	Organic Chemistry I	
KUT203/2	Inorganic Chemistry Practical	KUT101 (s)
KUT206/2	Organic Chemistry Practical	KUT102 (s), KOT122 (s)
KTT212/3	Inorganic Chemistry II	KTT112 (s)
KOT222/3	Organic Chemistry II	KOT122 (s)
KFT233/4	Physical Chemistry I	KTT112 (s) or KOT122 (s)
KAT245/4	Analytical Chemistry I	KTT112 (s) or KOT122 (s)
KUT304/2	Physical Chemistry Practical	KUT102 (s), KFT332 (c)
KUT305/2	Analytical Chemistry Practical I	KUT101 (s), KAT349 (c)
KTT313/3	Inorganic Chemistry III	KTT212 (s)
KFT332/3	Physical Chemistry II	KFT233 (s), KUT304 (c)
KAT349/3	Analytical Chemistry II	KAT245 (s), KUT305 (c)
KUT407/2	Inorganic and Analytical Chemistry Practical	KUT203 (s), KUT305 (s)
KUT408/2	Physical and Organic Chemistry Practical	KUT206 (s), KUT304 (s)
KOT423/3	Organic Chemistry III	KOT222 (s)
KFT431/3	Physical Chemistry III	KFT332 (s)
Selection of 6 credits		
KUE409/6 or 6 credits	Chemistry Project or Other theory courses from Analytical Chemistry, Industrial Chemistry and Pure Chemistry.	

(ii) Elective Courses (E) - 32 credits		
(a) Selection of 5 credits or more		
ZCT104/3	Physics IV (Modern Physics)	
BOM111/4	Biodiversity	
BOM112/4	Basic Ecology	
KUE306/2	Research Methodology in Chemistry - *(Compulsory)*	
(b) Selection of 9 credits		**Pre-requisites**
KOE322/3	Natural Products*	KOT222 (s)
KTE411/3	Selected Topics in Inorganic Chemistry	KTT212 (s)
KOE423/3	Selected Topics in Organic Chemistry*	KOT222 (s), KUT408 (s)
KFE432/3	Special Topics in Physical Chemistry	KFT332 (s)
(c) Selection of 18 credits or more		
KIE361/4	**Industrial Training**	
Additional of 14 or 18 credits to fulfill the elective component must be taken from Analytical Chemistry, Industrial Chemistry and other courses from the School of Physics, Mathematical Sciences, Biological Sciences, Industrial Technology or Centre for Global Archaeological Research.		

(s) = sequential (course must be taken earlier)
(c) = concurrent (course must be taken concurrently)
* = offer in alternate year



(iii) Minor (M) & Elective (E) Programmes – 32 credits		
Elective (E) Components		
(a) Selection of 12 credits		**Pre-requisite**
ZCT104/3	Physics IV (Modern Physics)	
BOM111/4	Biodiversity	
BOM112/4	Basic Ecology	
KIT257/3	Materials Chemistry	
KUE306/2	Research Methodology in Chemistry – *(Compulsory)*	
KOE322/3	Natural Products*	KOT222 (s)
KAT345/4	Spectroscopic Methods	KAT245 (s)
KIT358/3	Polymer Chemistry	KOT122 (s)
KIE361/4	Industrial Training	
KTE411/3	Selected Topics in Inorganic Chemistry	KTT212 (s)
KOE423/3	Selected Topics in Organic Chemistry*	KOT222 (s), KUT408 (s)
KFE432/3	Selected Topics in Physical Chemistry	KFT332 (s)
KAE445/3	Bioanalysis	KAT344 (s) or KAT349 (s)
KIE456/3	Food and Palm Oil Chemistry	
KIE458/3	Current Topics in Industrial Chemistry	
KIT458/3	Chemical Processing	KTT112 (s), KOT122 (s)
Minor (M) Components		
(c) Selection of 20 credits		
Select from any minor programme. Please refer to the book of Minor Programme Guideline.		

All Minor Programmes offered by other Schools can be taken by the Chemistry Students subject to the requirements imposed by the School which offers the Minor Programmes such as Management, Computer, Communication, Psychology, English or other Sciences.

All the courses offered are subjected to changes when the need arises.
(s) = sequential (Course must be taken earlier)
(c) = concurrent (Course must be taken concurrent
* = offer in alternate year

Proposed Schedule by Semester

B.Sc. (Hons.) (Chemistry)

YEAR 1					
COMPONENT	SEMESTER 1		SEMESTER 2		UNIT
	CODE	CREDIT HOURS	CODE	CREDIT HOURS	
University Courses (U)	Refer to page 31 - 43	3	Refer to page 31 - 43	3	
	WUS101	2	HTU223	2	
Core Courses (T)	KTT112	4	KOT122	4	
	KUT101	2	KUT102	2	
	MAA101	4	MAA102	4	
TOTAL CREDIT HOURS		15		15	30

YEAR 2					
COMPONENT	SEMESTER 3		SEMESTER 4		UNIT
	CODE	CREDIT HOURS	CODE	CREDIT HOURS	
University Courses (U)	SHE101	2	LSP300	2	
Core Courses (T)	KOT222	3	KTT212	3	
	KAT245	4	KFT233	4	
	KUT203	2	KUT206	2	
	ZCT103 (option)	3	BOM114 (option)	4	
Elective (E) or Minor (M) Courses	Elective / Minor	3	Elective / Minor	4	
TOTAL CREDIT HOURS		14/17		15/19	32/33

YEAR 3					
COMPONENT	SEMESTER 5		SEMESTER 6		UNIT
	CODE	CREDIT HOURS	CODE	CREDIT HOURS	
University Courses (U)	LKM400	2	LSP402	2	
Core Courses (T)	KTT313	3	KFT332	3	
	KAT349	3	KUT304	2	
	KUT305	2			
Elective (E) or Minor (M) Courses	KUE306	2	Elective / Minor	9	
	BOM111 / BOM112 (option)	4	ZCT104 (option)	3	
TOTAL CREDIT HOURS		12/16		16/19	31/32

YEAR 4					
COMPONENT	SEMESTER 7		SEMESTER 8		UNIT
	CODE	CREDIT HOURS	CODE	CREDIT HOURS	
University Courses (U)					
Core Courses (T)	KUE409	3	KUE409	3	
	KFT431	3	KOT423	3	
	KUT408 / KUT407	2	KUT407 / KUT408	2	
Elective (E) or Minor (M) Courses	Elective / Minor	3	Elective / Minor	4	
	KIE361 / Elective / Minor	4			
TOTAL CREDIT HOURS		15		12	27
GRAND TOTAL CREDIT HOURS					120/122

Program Learning Outcomes: Upon completion of this programme, students will be able to:

PLO1	**Knowledge (of the discipline)**	• Apply fundamental knowledge of chemistry to chemistry related practices.
PLO2	**Practical Skills (of the discipline)**	• Perform safe handling of chemicals and proficient manipulation of laboratory apparatus and analytical instruments.
PLO3	**Social Skills and Responsibilities**	• Demonstrate social skills and responsibility for the well-being of society.
PLO4	**Values, Attitudes and Professionalism**	• Balance and uphold positive values, ethics and accountability in societal and professional engagement.
PLO5	**Communication, Leadership and Teamwork Skills**	• Lead and collaborate with diverse team members and demonstrate effective communication.
PLO6	**Problem Solving and Scientific Skills**	• Provide practical solutions to chemistry related issues by employing appropriate and relevant chemistry knowledge and skills.
PLO7	**Information Management and Life-long Learning Skills**	• Manage information and seek new knowledge and skills independently.
PLO8	**Managerial & Entrepreneurial Skills**	• Display relevant and appropriate managerial and entrepreneurial skills.

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SCAN ME

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