



الجامعة الإسلامية العالمية ماليزيا

INTERNATIONAL ISLAMIC UNIVERSITY MALAYSIA KULLIYAH OF SCIENCE BACHELOR OF SCIENCE (APPLIED CHEMISTRY) (HONOURS)

PROGRAMME STRUCTURE (SEPTEMBER INTAKE)

In order to obtain the degree of Bachelor of Science (Applied Chemistry) from IIUM, a student must successfully complete **133 Credit Hours (CH)** of course work consisting of the University, Kulliyyah and Department requirements, as shown below:

	Malaysian and International Students	
	Credit	%
University Required Courses	20	15.04
Kulliyyah Required Courses	2	1.5
General Core Courses	58	43.61
Concentration Courses	12	9.02
Elective Courses	23	17.3
Industrial Training/Internship	12	9.02
Final Year Project	6	4.51
Total	133	100

UNIVERSITY REQUIRED COURSES

Students must complete all university required courses. The total university required courses are (20 CH) and consist of Islamic Fundamental Knowledge (11 CH), Leadership and Skill (5 CH), and Sustainable Development (4 CH). (**Table 1**)

KULLIYAH REQUIRED COURSES

The Kulliyyah requires students in the programme to complete 2 CH for Bahasa Melayu Kerjaya (Sains & Teknologi). (**Table 2**)

DEPARTMENTAL CORE COURSES

Students are required to complete 76 CH of core courses. (**Table 3**)

APPLIED CHEMISTRY ELECTIVE COURSES

Each student is also required to complete 23 CH of elective courses from any one of the subject offer that shown in **Table 4**.

APPLIED CHEMISTRY CONCENTRATION COURSES

Each student is also required to complete 12 CH of concentration courses from any one of the three specialization areas shown in **Table 5**.

INTERNSHIP

The compulsory Internship carries 12 CH. Each student must choose their place of internship, which could be in the areas of management, industry, research, education or specialized laboratory work. Students may also have their training in medical science laboratories in hospitals or other medical institutions.

TABLE 1: UNIVERSITY REQUIRED COURSES (20 CH)
(20th August 2020 – 468th Senate Meeting)

Course Code	Course Title	Credit Hours
Islamic Fundamental Knowledge		
UNGS 1301	Basic Philosophy and Islamic Worldview	3
UNGS 2290	Knowledge and Civilization in Islam	2
UNGS 2380	Ethics and <i>Fiqh</i> of Contemporary Issues	3
TQTD 1002	Tilawah Al-Quran 1	0.5
TQTD 2002	Tilawah Al-Quran 2	0.5
LQAD 1003	Introduction to Arabic for Quranic Understanding 1	0.5
LQAD 2003	Introduction to Arabic for Quranic Understanding 2	0.5
CCUB 1061*	Usrah 1 [#]	0.5
CCUB 1062*	Usrah 2 [#]	0.5
Leadership and Skill		
LEED 1301	English for Academic Writing	3
CCFM 2061*	Family Management	0.5
CCLM 2051	Leadership	0.5
CCSS	Skill 1	0.5
1010/2010/3010	Skill2	0.5
LMBD 1131	Bahasa Melayu 1*	1
LMBD 1132	Bahasa Melayu 2*	1
Sustainable Development		
UNGS 1201	Sustainable Development: Issues, Policies and Practices	2
CCUB 2163	Usrah in Action 1 (SD: Community Profilling)	1
CCUB 3164	Usrah in Action 2	1
TOTAL		20

[#]These two courses are for direct intake students

*These two courses are for non-malay speaking students

CREDITED CO-CURRICULAR ACTIVITY PACKAGES

First Year Package

Semester 1		
Course Code	Title	Credit Hours
UNGS 1201	Sustainable Development: Issues, Policies and Practices	2
UNGS 1301	Basic Philosophy and Islamic Worldview	3
LMBD 1131	Bahasa Melayu 1*	1
CCUB 1061	Usrah 1	0.5
Semester 2		
TQTD 1002	Tilawah Al-Quran 1	0.5
LQAD 1003	Introduction to Arabic for Quranic Understanding 1	0.5
UNGS 2290	Knowledge and Civilization in Islam**	2
LEED 1301	English for Academic Writing	3
CCUB 1062	Usrah 2	0.5

Second Year Package

Semester 1		
Course Code	Title	Credit Hours
LMBD 1132	Bahasa Melayu 2*	1
UNGS 2380	Ethic and Fiqh of Contemporary Issues**	3
Semester 2		
TQTD 2002	Tilawah Al-Quran 2	0.5
LQAD 2003	Introduction to Arabic for Quranic Understanding 2	0.5
CCUB 2163	Usrah in Action 1 (SD: Community Profiling)	1

Third Year Package

Semester 1		
Course Code	Title	Credit Hours
CCSS 1010/2010/3010	Skill 1**	0.5
CCLM 2051	Leadership**	0.5
CCFM 2061	Family Management**	0.5
Semester 2		
CCSS 1010/2010/3010	Skill 2**	0.5
CCUB 3164	Usrah in Action 2	1

*These two courses are for non-malay speaking students

**May be taken in any semester during the student's study period

LIST OF CREDITED CO-CURRICULAR ACTIVITY COURSES OFFERED

Course Code	Title
Skill 1	
CCSS 1010/2010/3010	Archery Course 1 (Theory & Practical)
	Automotive Skills 1
	Badminton Course 1 (Theory & Practical)
	Canoe 1
	Basic Counseling Skill 1
	Cooking Skills 1
	Advanced Debating 1 (For English Debaters)
	Presentation Skills & Critical Thinking
	Advance Debating 1 (For Arabic Debaters)
	Entrepreneur 1
	First Aid Skills 1
	Football Course 1 (Theory & Practical)
	Gamelan Course 1
	Percussion Instruments Course 1
	Khat Skills Course 1
	Mosque Management 1
	Karate Skills 1 (Theory & Practical)
	Silat Olahraga (Theory & Practical)
	Tae Kwan Do 1 (Theory & Practical)
	Netball Course 1 (Theory & Practical)
	Photography Skills 1
	Recreation 1
	Swimming Skill 1
	Event Management Skills 1
	Sewing Skills 1
	Sepak Takraw Course 1 (Theory & Practical)
Tennis Course 1	
Special Tahfiz Class 1	
Horse Riding and Management 1	
Cricket 1	
Malaysian Sign Language 1	
Skills 2	
CCSS 1010/2010/3010	Archery Course (Rules for Tournament)
	Automotive Skills 2
	Badminton Course 2 (Rules for Tournament)
	Canoe 2
	Basic Counseling Skills 2
	Cooking Skills 2
	Advanced Debating 2 (For English Debaters)
	Advanced Debating 2 (For Arabic Debaters)
	Entrepreneur 2
	First Aid Skills 2
	Fotball Course 2 (Rules for Tournament)
	Gamelan Course 2
	Percussion Instruments Course 2
	Khat Skills Course 2
	Mosque Management 2

	Karate Skills 2 (Rules for Tournament)
	Silat Olahraga (Rules for Tournament)
	Tae Kwan Do 2 (Rules for Tournament)
	Netball Course 2 (Rules and Tournament)
	Photography Skills 2
	Recreation 2
	Swimming Skills 2
	Event Management Skills 2
	Sewing Skills 2
	Sepak Takraw Course 2 (Rules for Tournament)
	Tennis Course 2
	Special Tahfiz Class 2
	Volleyball Course 2
	Horse Riding and Management 2
	Cricket 2
	Malaysian Sign Language 2
Skills 3	
CCSS 1010/2010/3010	Advance Debating (Non Debaters)

TABLE 2: KULLIYAH REQUIRED COURSES (2 CH)

Course Code	Course Title	Credit Hours
LM 2026K	Bahasa Melayu Kerjaya (Sains & Teknologi)	2
	TOTAL	2

TABLE 3: DEPARTMENTAL CORE COURSES

Course Code	Course Title	Credit Hours	Pre-requisite
BSCH 1311	Organic Chemistry I	3 (3+0)	-
BSCH 1212	Introduction to Practical Organic Chemistry	2 (0+2)	-
BSCH 1313	Physical Chemistry I	3 (2+1)	-
BSCH 1214	Statistic	2 (2+0)	-
BSCH 1321	Inorganic Chemistry I	3 (3+0)	-
BSCH 1222	Practical Inorganic Chemistry	2 (0+2)	-
BSCH 1323	Analytical Chemistry I	3 (2+1)	-
BSCH 1324	Introduction to Biochemistry	3 (3+0)	-
BSCH 2411	Organic Chemistry II	4 (3+1)	BSCH 1311
BSCH 2312	Inorganic Chemistry II	3 (2+1)	BSCH 1321
BSCH 2313	Physical Chemistry II	3 (2+1)	BSCH 1313
BSCH 2314	Analytical Chemistry II	3 (2+1)	BSCH 1323
BSCH 2215	Computational Chemistry	2 (1+1)	-
BSCH 2321	Spectroscopy	3 (2+1)	BSCH 1311 BSCH 2411
BSCH 2322	Polymer Chemistry	3 (2+1)	BSCH 1311 BSCH 2312
BSCH 2223	Organometallic and Bioinorganic Chemistry	2 (2+0)	BSCH 1321
BSCH 2224	Organic Reaction Mechanisms	2 (2+0)	BSCH 1311

BSCH 3311	Natural Product Chemistry	3 (2+1)	BSCH 1311 BSCH 2411
BSCH 3312	Environmental Chemistry	3 (2+1)	-
BSCH 3213	Chemical Health & Safety Management	2 (2+0)	-
BSCH 3121	Generic Skills for Chemistry Students	1 (1+0)	-
BSCH 3222	Final Year Project I	2 (0+2)	-
BSCH 4411	Final Year Project II	4 (0+4)	-
BSCH 4312	Industrial Chemistry	3 (3+0)	-
BSCH 4122	Industrial Training	12 (0+12)	-
TOTAL		76	

STUDY PLAN

Schedule of Courses

The curriculum structure of the programme is shown in the following table.

YEAR 1

SEMESTER I		
Course Code	Title	Credit Hours
BSCH 1311	Organic Chemistry I	3 (3+0)
BSCH 1212	Introduction to Practical Organic Chemistry	2 (0+2)
BSCH 1313	Physical Chemistry I	3 (2+1)
BSCH 1214	Statistic	2 (2+0)
UNGS 1201	Sustainable Development: Issues, Policies and Practices	2
UNGS 1301	Basic Philosophy and Islamic Worldview	3
LMBD 1131	Bahasa Melayu 1(for non-malay speaking students)	1
CCUB 1061	Usrah 1(for direct intake students)	0.5
	TOTAL	15[#] 15.5[†] 16.5[∞]

#Student from CFS-IIUM

†Malay Speaking Direct Intake Students

∞Non-Malay Speaking Students

SEMESTER II		
Course Code	Title	Credit Hours
BSCH 1321	Inorganic Chemistry I	3 (3+0)
BSCH 1222	Practical Inorganic Chemistry	2 (0+2)
BSCH 1323	Analytical Chemistry I	3 (2+1)
BSCH 1324	Introduction to Biochemistry	3 (3+0)
TQTD 1002	Tilawah Al-Quran 1	0.5
LQAD 1003	Introduction to Arabic for Quranic Understanding 1	0.5
UNGS 2290	Knowledge and Civilization in Islam	2
LEED 1301	English for Academic Writing	3
CCUB 1062	Usrah 2 (for direct intake students)	0.5
	TOTAL	17[#] 17.5[†]

#Student from CFS-IIUM

†Direct Intake Students (Malaysian & International)

YEAR 2

SEMESTER III		
Course Code	Title	Credit Hours
BSCH 2411	Organic Chemistry II	4 (3+1)
BSCH 2312	Inorganic Chemistry II	3 (2+1)
BSCH 2313	Physical Chemistry II	3 (2+1)
BSCH 2314	Analytical Chemistry II	3 (2+1)
BSCH 2215	Computational Chemistry	2 (1+1)
LMBD 1132	Bahasa Melayu 2 (for non-malay speaking students)	1
UNGS 2380	Ethic and <i>Fiqh</i> of Contemporary Issues	3
	TOTAL	18
		19[#]

#Non-Malay Speaking Students

SEMESTER IV		
Course Code	Title	Credit Hours
BSCH 2321	Spectroscopy	3 (2+1)
BSCH 2322	Polymer Chemistry	3 (2+1)
BSCH 2223	Organometallic and Bioinorganic Chemistry	2 (2+0)
BSCH 2224	Organic Reaction Mechanisms	2 (2+0)
BSCH ****	Elective Opt.	4
TQTD 2002	Tilawah Al-Quran 2	0.5
LQAD 2003	Introduction to Arabic for Quranic Understanding 2	0.5
CCUB 2163	Usrah in Action 1 (SD: Community Profiling)	1
	TOTAL	16

YEAR 3

SEMESTER V		
Course Code	Title	Credit Hours
BSCH 3311	Natural Product Chemistry	3 (2+1)
BSCH 3312	Environmental Chemistry	3 (2+1)
BSCH 3213	Chemical Health & Safety Management	2 (2+0)
BSCH****	Concentration Courses (Package I)	6
BSCH****	Elective Opt.	2
LM 2026K	Bahasa Melayu Kerjaya (Sains & Teknologi)	2
CCSS 1010/2010/30 10	Skill 1	0.5
CCLM 2051	Leadership	0.5
CCFM 2061*	Family Management	0.5
	TOTAL	19.5

SEMESTER VI		
Course Code	Title	Credit Hours
BSCH 3121	Generic Skills for Chemistry Students	1 (1+0)
BSCH 3222	Final Year Project I	2 (0+2)
BSCH****	Concentration Courses (Package II)	6
BSCH****	Elective Opt.	8
CCSS 1010/2010/3010	Skill 2	0.5
CCUB 3164	Usrah in Action 2	1
	TOTAL	18.5

YEAR 4

SEMESTER VII		
Course Code	Title	Credit Hours
BSCH 4411	Final Year Project II	4 (0+4)
BSCH 4312	Industrial Chemistry	3 (3+0)
BSCH****	Elective Opt.	9
	TOTAL	16

SEMESTER VIII		
Course Code	Title	Credit Hours
BSCH 4122	Industrial Training	12 (0+12)
	TOTAL	12

TABLE 4: ELECTIVE COURSES

All of the elective courses listed are offered subject to the availability of staff. The student should consult the department to determine the elective courses suitable to their needs. Students are recommended to take two subjects in Year 2, four subjects in Year 3 and three subjects in Year 4.

YEAR 2

SEMESTER IV (4 CH)*			
Course Code	Title	Credit Hours	Pre-Requisite
BSCH 2225	Colloid Chemistry	2 (2+0)	BSCH 2313 BSCH 2314
BSCH 2226	Catalysis	2 (2+0)	-
BSCH 2227	Cosmetic Science & Technology	2 (2+0)	-

***Select 2 subjects for the total of 4 CH**

YEAR 3

SEMESTER V (2 CH)*			
Course Code	Title	Credit Hours	Pre-Requisite
BSCH 3214	Material Chemistry	2 (2+0)	BSCH 2322
BSCH 3215	Organic Synthesis	2 (2+0)	BSCH 1311 BSCH 2411

***Select 1 subject for the total of 2 CH**

SEMESTER VI (8 CH)*			
Course Code	Title	Credit Hours	Pre-Requisite
BSCH 3323	Special Topics in Applied Chemistry	3 (3+0)	-
BSCH 3324	Advanced Materials	3 (3+0)	BSCH 3214
BSCH 3225	Ethic in Science	2 (2+0)	-
SBT 2325	Biodiversity and Conservation	3 (2+1)	-
SBT 2222	Bioentrepreneurship	2 (2+0)	-

***Select the subjects for the total of 8 CH**

YEAR 4

SEMESTER VII (9 CH)*			
Course Code	Title	Credit Hours	Pre-Requisite
BSCH 4313	Quality Control & Assurance	3 (3+0)	-
BSCH 4314	Flavour and Fragrances	3 (3+0)	-
BSCH 4315	Halal Food and Related Products	3 (3+0)	-
BSCH 4316	Cosmetic Ingredient and Formulation	3 (2+1)	-
BSCH 4317	Occupational, Safety, Health Legislation & Management	3 (3+0)	-

***Select the subjects for the total of 9 CH**

TABEL 5: CONCENTRATION COURSES

This is a proposed schedule only. Student should choose one of the concentration courses offered in Year 3 and is compulsory to take all subjects under Package I and II.

1. Chemistry in Halal Industry

Package I (6 CH): Compulsory		
Course Code	Title	Credit Hours
BSCH 3331	Food Chemistry and Safety	3(3+0)
BSCH 3332	Chemistry of Fats, Oils and Emulsifiers	3(2+1)

Package II (6 CH): Compulsory		
Course Code	Title	Credit Hours
BSCH 3333	Halal Food Processing & Regulation	3(3+0)
BSCH 3334	Halal Food Authentication & Traceability Techniques	3(2+1)

2. Medicinal Chemistry

Package I (6 CH): Compulsory		
Course Code	Title	Credit Hours
BSCH 3341	Medicinal Chemistry	3(2+1)
BSCH 3342	Drug Dosage Form	3(3+0)

Package II (6 CH): Compulsory		
Course Code	Title	Credit Hours
BSCH 3343	Drug Delivery and Application	3(3+0)
BSCH 3345	Separation Techniques for Medicinal Chemistry	3(2+1)

3. Occupational Safety and Health Management

Package I (6 CH): Compulsory		
Course Code	Title	Credit Hours
BSCH 3351	Occupational Safety and Health Management	3(3+0)
BSCH 3352	Industrial Chemical Hygiene	3(2+1)

Package II (6 CH): Compulsory		
Course Code	Title	Credit Hours
BSCH 3353	Analytical Techniques in Environmental Health	3(2+1)
BSCH 3354	Environmental and Industrial Toxicology	3(3+0)