

PROGRAMME STRUCTURE: BACHELOR OF CHEMICAL ENGINEERING

CURRICULUM STRUCTURE SESSION 2020/2021 (SEPTEMBER INTAKE)

Course	Content	Credit Hours
University Courses	<ul style="list-style-type: none"> • Information Literacy 	2
	<ul style="list-style-type: none"> • Philosophy & Current Issues (PIS)* / 	2
	<ul style="list-style-type: none"> • Basic Malay Language** 	
	<ul style="list-style-type: none"> • Ethics Appreciation & Civilization (PEP) 	2
	<ul style="list-style-type: none"> • Basic Entrepreneurship Culture 	2
	<ul style="list-style-type: none"> • Social Engagement 	2
	<ul style="list-style-type: none"> • English for Communication Programme 	6
	Elective Course from Other Faculties	4
	Co-Curriculum	2
	Sub-Total Credit Hours	22
Faculty Courses	<ul style="list-style-type: none"> • Faculty Core Courses 	22
	<ul style="list-style-type: none"> • Faculty Elective Course 	2
		Sub-Total Credit Hours
Programme Courses	<ul style="list-style-type: none"> • Programme Core Courses 	82
	<ul style="list-style-type: none"> • Programme Elective Courses 	15
		Sub-Total Credit Hours
TOTAL CREDIT HOURS		143

Notes:

*Compulsory for Local students.

** Compulsory for International students.

Students are required to take a minimum of 6 credits of English course based on English Proficiency qualification (MUET/IELTS/TOEFL).

ACADEMIC PLANNER

BACHELOR OF CHEMICAL ENGINEERING SESSION 2020/2021

YEAR 1						
CODE	COURSE	S1	S2	SS	TOTAL	PRE-REQUISITE
UNIVERSITY COURSES						
GIG1012*/ /GLT1017**	Philosophy and Current Issues, FIS*/ Basic Malay Language**	2				
GIG1013	Appreciation of Ethics and Civilizations, PEP		2			
GIG1004	Information Literacy		2			
GLT10XX	English Communication Programme	3				
	SUB TOTAL	5	4		9	
FACULTY CORE COURSES						
KIX1001	Engineering Mathematics I	3				
KIX1002	Engineering Mathematics II		3			
	SUB TOTAL	3	3		6	
FACULTY ELECTIVE COURSE						
PROGRAMME CORE COURSES						
KIL1002	Chemical Process Principles I	3				
KIL1003	Physical and Analytical Chemistry I	2				
KIL1004	Engineering Drawing	2				
KIL1007	Physical Chemistry Laboratory	1				
KIL1001	Chemical Engineering Thermodynamics I		3			
KIL1005	Numerical Methods For Engineering		3			
KIL1006	Fluid Mechanics I		3			
KIL1008	Physical and Analytical Chemistry II		2			
	SUB TOTAL	8	11		19	
	TOTAL	16	18		34	

**BACHELOR OF CHEMICAL ENGINEERING
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YEAR 2						
CODE	COURSE	S1	S2	SS	TOTAL	PRE-REQUISITE
UNIVERSITY COURSES						
GIG1003	Basic Entrepreneurship Culture	2				
GIG1005	Social Engagement		2			
GLT10XX	English Communication Programme	3				
	SUB TOTAL	5	2		7	
FACULTY CORE COURSES						
KIX1003	Thinking and Communication Skills	2				
KIX2004	Engineering Project Management		3			
	SUB TOTAL	2	3		5	
FACULTY ELECTIVE COURSE						
PROGRAMME CORE COURSES						
KIL2001	Chemical Process Principles II	2				KIL1002
KIL2003	Applied Statistics	2				KIL1005
KIL2005	Chemical Engineering Thermodynamics II	3				KIL1001
KIL2006	Heat Transfer	3				
KIL2007	Mass Transfer	2				KIL1006
KIL2002	Organic Chemistry		2			
KIL2004	Laboratory and Communication I		2			
KIL2008	Separation Processes I		3			KIL1002, KIL2005
KIL2009	Reaction Engineering I		3			KIL1002
KIL2010	Biochemistry		3			
	SUB TOTAL	12	13		25	
	TOTAL	19	18		37	

**BACHELOR OF CHEMICAL ENGINEERING
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YEAR 3						
CODE	COURSE	S1	S2	SS	TOTAL	PRE-REQUISITE
UNIVERSITY COURSES						
FACULTY CORE COURSES						
KIX2001	Integrated Design I	2				
KIX2002	Engineering Economic Analysis	3				
KIX2003	Law and Ethics in Engineering	2				
KIX3001	Integrated Design II		4			KIX2001
	SUB TOTAL	7	4		11	
FACULTY ELECTIVE COURSE						
PROGRAMME CORE COURSES						
KIL3002	Fluid Mechanics II	2				KIL1006
KIL3003	Modelling of Chemical Engineering	2				KIL2005
KIL3006	Process Synthesis and Simulation	3				KIL2005, KIL2006, KIL2008, KIL2009
KIL3007	Separation Processes II	3				KIL2001
KIL3009	Laboratory and Communication II	2				KIL2004
KIL3001	Material Science for Chemical Engineering		3			
KIL3004	Process Control		3			KIL3003, KIL3006
KIL3005	Particle Technology		3			
KIL3008	Process Safety		3			
KIL3011	Reaction Engineering II		2			KIL2009
KIL3010	Industrial Training			5		
	SUB TOTAL	12	14	5	31	
	TOTAL	19	18	5	42	

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YEAR 4						
CODE	COURSE	S1	S2	SS	TOTAL	PRE-REQUISITE
UNIVERSITY COURSES						
GLXXX	University Elective Course	2	2			
	Co-curriculum		2			
	SUB TOTAL	2	4		6	
FACULTY CORE COURSES						
FACULTY ELECTIVE COURSE***						
KIX3002	Engineering Entrepreneurship		2			
	SUB TOTAL		2		2	
PROGRAMME CORE COURSES						
KIL3012	Process Equipment Design	2				KIL2008, KIL2009, KIL3005, KIL3007, KIL3011
KIL4001	Sustainable Development In Engineering	2				
KIL4002	Design Project	3	3			KIL3004, KIL3011
KIL4003	Research Project	3	3			KIL3009
	SUB TOTAL	10	6		16	
PROGRAMME ELECTIVE COURSES						
KIL40XX	Elective Course I	2				
KIL40XX	Elective Course II		2			
KIL40XX	Elective Course III		2			
	SUB TOTAL	2	4		6	
	TOTAL	14	16		30	

PROGRAMME ELECTIVE COURSES***		
CODE	COURSE	PRE-REQUISITE
KIL4004	Air Pollution Fundamental	-
KIL4005	Process Integration	-
KIL4006	Advanced Process Control	KIL3004
KIL4007	Solid Waste Management	-
KIL4008	Waste water Treatment	-
KIL4009	Adsorption in Porous Solid	-
KIL4010	Petroleum Engineering	-
KIL4011	Advanced Process Safety and Loss Prevention	KIL3008
KIL4012	Finite Element Method for Chemical Engineers	KIL1005, KIL2006, KIL2007, KIL3004
KIL4013	Membrane Technology and Processes	-
KIL4014	Application of Molecular Techniques in Activated Sludge Processes	KIL2010
KIL4015	Quantum Chemical and Molecular Modeling	KIL1001, KIL2005, KIL2002
KIL4016	Reaction Engineering for Bioreactors	KIL2010
KIL4017	Field Processing and Treatment of Natural Gas	-

***Courses offered are subject to change

GRADUATION REQUIREMENT CHART

MARKING SCHEME

CODE	COURSE	CREDIT	PASSING GRADE	MARKING SCHEME			
UNIVERSITY COURSES							
GIG 1012	Philosophy & Current Issues (PIS)*	2	C	90-100	A+	4.00	HIGH DISTINCTION
GLT 1017	Basic Malay Language**						
GIG 1013	Ethics Appreciation & Civilization (PEP)*	2	C	80-89	A	4.00	DISTINCTION
GIG 1006	Introduction to Malaysia**			75-79	A-	3.70	DISTINCTION
GIG1003	Basic of Entrepreneurship Culture	2	C	70-74	B+	3.30	GOOD
GIG 1004	Information Literacy	2	C	65-69	B	3.00	GOOD
GIG1005	Social Engagement	2	C	60-64	B-	2.70	GOOD
GLT 10XX	English for Communication Programme	6	C	55-59	C+	2.30	PASS
	Elective Course from Other Faculties	4	C	50-54	C	2.00	PASS
	Co-Curriculum	2	C	45-49	C-	1.70	FAIL
				40-44	D+	1.30	FAIL
	Sub-total Credit Hours	22		35-39	D	1.00	FAIL
				0-34	F	0.00	FAIL
FACULTY CORE COURSES							
KIX 1001	Engineering Mathematics I	3	C	GRADE	REMARKS		
KIX 1002	Engineering Mathematics II	3	C	P	Progressive		
KIX 1003	Thinking and Communication Skills	2	C	K	Transfer of credit without grade		
KIX 2001	Integrated Design I	2	C	K1	Exemption of course		
KIX 2002	Engineering Economic Analysis	3	C	I	May be given when a student has not: a) taken the final examination for any course in any semester due to medical reasons/compassionate grounds and/or; b) fulfilled one part of the course requirement in a semester due to medical/compassionate grounds or by reasons beyond the control of the student which is acceptable to the Committee of Examiners concerned.		
KIX 2003	Law and Ethics in Engineering	2	C				
KIX 2004	Engineering Project Management	3	C				
KIX 3001	Integrated Design II	4	C				
	Sub-total Credit Hours	22					
FACULTY ELECTIVE COURSES							

	List of Faculty Elective Courses#: <ul style="list-style-type: none"> • KIX3002 – Engineering Entrepreneurship • KIX3003 – Sustainable Engineering <i>#subject to changes.</i>	2	C	R	Given for a course which is audited that fulfils the minimum 80% attendance requirement. No credit is given for this grade.
				UR	Given for a course which is audited but does not fulfil the minimum 80% attendance requirement. No credit is given for this grade.
	Sub-total Credit Hours	2		W	Given for a course from which a student has withdrawn officially during a particular semester.
PROGRAMME CORE COURSES					
KIL1002	Chemical Process Principles I	3	C	W1	Given for all courses where a student has officially withdrawn.
KIL1003	Physical and Analytical Chemistry I	2	C		
KIL1007	Physical Chemistry Laboratory	1	C		
KIL1001	Chemical Engineering Thermodynamics I	3	C		
KIL1004	Engineering Drawing	2	C		
KIL1005	Numerical Methods For Engineering	3	C		
KIL1006	Fluid Mechanics 1	3	C		
KIL1008	Physical and Analytical Chemistry II	2	C		
KIL2001	Chemical Process Principles II	2	C		