



SCHOOL OF INDUSTRIAL TECHNOLOGY

INSTRUCTIONAL PLAN (IP)

Course: IBK412 ENVIRONMENTAL BIOPROCESS TECHNOLOGY
Semester: SEMESTER I, ACADEMIC SESSION 2020/2021 (COVID-19)

Note: Due to the Conditional Movement Control Order in 2020 issued by the Malaysian Government, teaching and learning have been moved online, and the final examination ("Peperiksaan Akhir" or PA) has been replaced with coursework assessment.

Lecture time	Monday (1 – 5 pm)
Laboratory time	
Tutorial time	-

No.	Lecturer	Email address	Teaching load
1	DR MUAZ MOHD ZAINI MAKHTAR	muazzaini@usm.my	1
2	Dr. Siti Balqis Zulfigar	mervynliew@usm.my	1
3	Dr. Mervyn Liew Wing On	balqiszulfigar@usm.my	1

No.	Course Learning Outcomes (CLO)	* PO	¹ LT	² SS	Assessment Method
1	Mempamerkan kebolehan untuk mengendalikan pelbagai teknik dalam proses hiliran <i>To demonstrate the ability to handle different techniques of downstream processings</i>	PLO2	P3		42
2	Mengaplikasi prinsip dan jenis untuk setiap teknik dalam proses hiliran yang bersesuaian dengan produk yang dihasilkan <i>To apply various downstream principles and techniques with the related products</i>	PLO3	C3	CTPS3	42
3	Melaporkan secara lisan dan bertulis dengan berkeyakinan dan berkesan untuk pelbagai teknik proses hiliran. <i>To report in oral and verbal methods confidently for various downstream processing techniques.</i>	PLO4	A3	CS3	11,53

* Programme Outcome

¹ Learning Taxonomy

² Soft Skill

Week	Date	Lecturer	Topics	Delivery	Assessments	CLO
1	12/10	MZ	Kuliah: Pengenalan kepada sistem proses hiliran	online		
2	19/10	Dr. Mervyn	Kuliah: Proses pemisahan pepejal tidak terlarut dan pengasingan produk/Proses penulenan	Online		
3	26/10	Dr. Mervyn	Pembentangan: Proses penulenan dalam bioproses	Online	53	PO4
4	2/11	MZ	Amali 1: Sistem penapisan dan jenis penapisan	Online	11, 42	PO4
5	9/11	MZ	• Amali 2: Pemecahan sel	Online	11, 42	PO4
6	16/11	MZ	Amali 3: Rekabentuk proses pengelompokan dan endapan	Online	11, 42	PO4
7	23/11	MZ	Amali 4: Rekabentuk proses pengemparan dan pengasingan	online	11,42	PO4
8	30/11/2020 – 6/12/2020	MID-SEMESTER BREAK				
9	7/12	SB	Amali 5: Rekabentuk proses pengekstrakan cecair-cecair	online	11,42,13	PO2
10	14/12	SB	Amali 6: Rekabentuk proses pemendakan	online	11,42	PO4
11	21/12	SB	Amali 7: Rekabentuk proses penjerapan	online	11,42	PO2
12	28/12	Dr. Mervyn	Amali 8: Rekabentuk proses teknik kromatografi I	Online		PO2
16	25/1/2021 – 31/1/2021	REVISION WEEK				
17	1/2/2021 – 7/2/2021	EXAM WEEK 1				
18	8/2/2021 – 14/2/2021	EXAM WEEK 2				
19	15/06/2020 – 21/06/2020	EXAM WEEK 3				
20-23	22/2/2021 – 28/2/2021	INTER-SEMESTER BREAK				

Final Examination (0%)



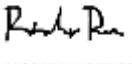
Question No.	Topics	CLO	Lecturer
1	Not applicable		
2	Not applicable		
3	Not applicable		
4	Not applicable		
5	Not applicable		
6	Not applicable		

Coursework Assessment (100%)

Note: The final examination has been replaced by coursework assessment only

	Jenis	Kod	%
(i)	Laporan amali	11	30
(ii)	Ujian	13	20

	Jenis	Kod	%
(iii)	Latiahn amali	42	30
	Pembentangan	53	20

Prepared by:	Endorsed by:	Approved by:	Archived by:
Course Coordinator	Program Chairman	Dean	Asst. Registrar
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Dr MUAZ MOHD ZAINI MAKHTAR	Assoc Prof Dr Husnul Azan Tajaruddin	Prof Dr Norli Ismail	Pn Rasslene Rass Rasalingam
Date: 15/1/2020	Date: 17/9/2020	Date: 18/1/2021	Date: 17/09/2020