

## Tempoh Pengajian

Kurikulum program ini mengambil masa minima selama 3 semester panjang. Perinciannya adalah seperti berikut:

Mod pengajian	Tempoh minimum pengajian	Tempoh maksimum pengajian
Sepenuh masa	3 semester panjang	6 semester panjang
Sepuluh masa	6 semester panjang	12 semester panjang

## Struktur Kurikulum yang baru.

Pihak jabatan mewujudkan 3 pengkhususan yang boleh dipilih oleh pelajar melalui kursus yang telah dimodulkan.

### Modul 1 (Kejuruteraan Biokimia)

Semester	Kod Kursus	Tajuk Kursus	Taraf Kursus	Jumlah kredit
Semester I	KKKK6112	Kaedah Penyelidikan dan Inovasi	W	2
	KKKK6023	Pengurusan Projek	W	3
	KKKK6133	Analisis Risiko Kuantitatif	W	3
	KKKK6143	Kaedah Perkomputeran Untuk Kejuruteraan Kimia	W	3
	KKKK6153	Rekabentuk Sistem	W	3
	KKKK6163	Dinamik dan Kawalan Proses Lanjutan	W	3
	CMIEXXX3	Elektif keusahawanan	W	3
Jumlah Kredit Semester				20
Semester II	KKKK6004	Projek I	W	4
	KKKK6233	Kejuruteraan Bioproses	WM	3
	KKKK6243	Proses Hilir Biologi	WM	3
	KKKK6253	Teknologi Biofarmaseutikal	WM	3
	KKKK6263	Kejuruteraan Biobahan Lanjutan	WM	3
Jumlah Kredit Semester				16
Semester III	KKKK6009	Projek II	W	9
	Jumlah Kredit Semester			
Jumlah Keseluruhan kredit				45

Nota: W = Wajib; WM = Wajib Modular

### Modul 2 (Kelestarian Teknologi Proses)

Semester	Kod Kursus	Tajuk Kursus	Taraf Kursus	Jumlah kredit
Semester I	KKKK6112	Kaedah Penyelidikan dan Inovasi	W	2
	KKKK6023	Pengurusan Projek	W	3
	KKKK6133	Analisis Risiko Kuantitatif	W	3
	KKKK6143	Kaedah Perkomputeran Untuk Kejuruteraan Kimia	W	3
	KKKK6153	Rekabentuk Sistem	W	3
	KKKK6163	Dinamik dan Kawalan Proses Lanjutan	W	3
	CMIEXXX3	Elektif keusahawanan	W	3
Kredit Jumlah Kredit Semester				20
Semester II	KKKK6004	Projek I	W	4
	KKKK6333	Penukaran Biojisim Berlignoselulosa dan Biorefineri	WM	3

	KKKK6343	Teknologi Pemisahan Hijau	WM	3
	KKKK6353	Pengurusan Sisa Buangan Industri	WM	3
	KKKK6363	Eko-Komuniti Simbiosis	WM	3
	<b>Kredit Jumlah Kredit Semester</b>			<b>16</b>
<b>Semester III</b>	KKKK6009	Projek II	W	9
	<b>Jumlah Kredit Semester</b>			<b>9</b>
	<b>Jumlah Keseluruhan Kredit</b>			<b>45</b>

**Nota:** W = Wajib; WM = Wajib Modular

### **Modul 3 (Kejuruteraan Tenaga)**

<b>Semester</b>	<b>Kod Kursus</b>	<b>Tajuk Kursus</b>	<b>Taraf Kursus</b>	<b>Jumlah kredit</b>
<b>Semester I</b>	KKKK6112	Kaedah Penyelidikan dan Inovasi	W	2
	KKKK6023	Pengurusan Projek	W	3
	KKKK6133	Analisis Risiko Kuantitatif	W	3
	KKKK6143	Keadah Perkomputeran Untuk Kejuruteraan Kimia	W	3
	KKKK6153	Rekabentuk Sistem	W	3
	KKKK6163	Dinamik dan Kawalan Proses Lanjutan	W	3
	CMIEXXX3	Elektif keusahawanan	W	3
	<b>Kredit Jumlah Kredit Semester</b>			<b>20</b>
<b>Semester II</b>	KKKK6004	Projek I	W	4
	KKKK6433	Teknologi Tenaga Keterbaharuan dan Alternatif	WM	3
	KKKK6443	Tenaga Suria	WM	3
	KKKK6453	Teknologi Selfuel dan Aplikasi	WM	3
	KKKK6463	Teknologi Hidrogen	WM	3
	<b>Kredit Jumlah Kredit Semester</b>			<b>16</b>
<b>Semester III</b>	KKKK6009	Projek II	W	9
	<b>Kredit Jumlah Kredit Semester</b>			<b>9</b>
	<b>Jumlah keseluruhan kredit</b>			<b>45</b>

**Nota:** W = Wajib; WM = Wajib Modular

**Module 1 (Biochemical Engineering)**

Semester	Course code	Course name	Course status	Total credit
Semester I	KKKK6112	Research Methodology and Innovation	C	2
	KKKK6023	Project Management	C	3
	KKKK6133	Quantitative Risk Analysis	C	3
	KKKK6143	Computational Methods for Chemical Engineering	C	3
	KKKK6153	System Engineering Design	C	3
	KKKK6163	Dynamic and Advanced Process Control	C	3
	CMIEXX3	Elektif keusahawanan	C	3
<b>Total semester credit</b>				<b>20</b>
Semester II	KKKK6004	Project I	C	4
	KKKK6233	Bioprocess Engineering	CM	3
	KKKK6243	Biological Downstream Processes	CM	3
	KKKK6253	Biopharmaceutical Technology	CM	3
	KKKK6263	Advanced Biomaterial Engineering	CM	3
<b>Total semester credit</b>				<b>16</b>
Semester III	KKKK6009	Project II	C	9
	<b>Total semester credit</b>			
<b>Total overall semester credit</b>				<b>45</b>

**Module 2 (Process Sustainability Technology)**

Semester	Course code	Course name	Course status	Total credit
Semester I	KKKK6112	Research Methodology and Innovation	C	2
	KKKK6023	Project Management	C	3
	KKKK6133	Quantitative Risk Analysis	C	3
	KKKK6143	Computational Methods for Chemical Engineering	C	3
	KKKK6153	System Engineering Design	C	3
	KKKK6163	Dynamic and Advanced Process Control	C	3
	CMIEXX3	Elektif keusahawanan	C	3
<b>Total semester credit</b>				<b>20</b>
Semester II	KKKK6004	Project I	C	4
	KKKK6333	Biomass Utilization and conversion technology	CM	3
	KKKK6343	Green Separation Technology	CM	3
	KKKK6353	Industrial Wastewater Management	CM	3
	KKKK6363	Symbiotic Eco-Community	CM	3
<b>Total semester credit</b>				<b>16</b>
Semester III	KKKK6009	Project II	C	9
	<b>Total semester credit</b>			
<b>Total overall semester credit</b>				<b>45</b>

**Module 3 (Energy Engineering)**

Semester	Course code	Course name	Course status	Total credit
Semester I	KKKK6112	Research Methodology and Innovation	C	2
	KKKK6023	Project Management	C	3
	KKKK6133	Quantitative Risk Analysis	C	3
	KKKK6143	Computational Methods for Chemical Engineering	C	3
	KKKK6153	System Engineering Design	C	3
	KKKK6163	Dynamic and Advanced Process Control	C	3
	CMIEXXX3	Elektif keusahawanan	C	3
<b>Total semester credit</b>				<b>20</b>
Semester II	KKKK6004	Project I	C	4
	KKKK6433	Renewable and Alternative Energy Technology	CM	3
	KKKK6443	Solar Energy	CM	3
	KKKK6453	Fuel Cell Technology and Application	CM	3
	KKKK6463	Hydrogen Technology	CM	3
<b>Total semester credit</b>				<b>16</b>
Semester III	KKKK6009	Project II	C	9
	<b>Total semester credit</b>			
<b>Total overall semester credit</b>				<b>45</b>

**Note:** C= compulsory; CM = Compulsory Modular