



**2022/2023**

**BUKUPANDUAN  
PROGRAM PENGAJIAN  
PRASISWAZAH**

*UNDERGRADUATE STUDY PROGRAMME HAND BOOK*

**FAKULTI KEMANUSIAAN, PENGURUSAN DAN SAINS  
FACULTY OF HUMANITIES, MANAGEMENT AND SCIENCE**

## **FAKULTI KEMANUSIAAN, PENGURUSAN DAN SAINS (BACELOR)**

### **Maklumat Am**

Sejarah UPMKB bermula dengan penubuhan kampus sementara di Semenggok, Kuching pada 10 Ogos 1974. Kampus tetap didirikan di Bintulu, Sarawak pada Jun 1987. Kawasan tetap bertapak di kawasan seluas 714 hektar. Penubuhan kampus ini adalah untuk mengorak langkah demi mencapai matlamat ketiga pelan strategik UPM 2001-2010 iaitu untuk meningkatkan keupayaan UPM sebagai pusat pengajian dan perkhidmatan pertanian serta biosumber terkemuka di peringkat antarabangsa. Menerusi proses penstrukturan semula UPMKB bermula tahun 2018, lima tujahan utama telah dikenalpasti iaitu pertanian, perhutanan, kimia industri, tenaga boleh diperbaharui dan kajian etnik. Pada 1 Julai 2020, dua fakulti telah ditubuhkan iaitu Fakulti Sains Pertanian dan Perhutanan (FSPH) dan Fakulti Kemanusiaan, Pengurusan dan Sains (FKPS).

Fakulti Kemanusiaan, Pengurusan dan Sains terdiri dari dua jabatan akademik iaitu Jabatan Sains Sosial dan Pengurusan dan Jabatan Sains dan Teknologi. Program yang ditawarkan oleh FKPS mempunyai kebolehpasaran graduan yang tinggi kerana program pengajian yang relevan dan bertepatan dengan keperluan industri tempatan. Pelajar akan memperolehi pengalaman pembelajaran di dalam dan luar kelas yang komprehensif sambil dibantu oleh pensyarah yang kebanyakannya berkelulusan ijazah PhD. Kini, fakulti ini menawarkan satu (1) program Persediaan Diploma Sains, dua (2) program Diploma, dua (2) program Bachelor, Master dengan tesis dan PhD. Umumnya, fakulti ini mampu menampung seramai 2000 orang pelajar menjelang tahun 2021.

## **FACULTY OF HUMANITIES, MANAGEMENT AND SCIENCE**

### **General Information**

The history of UPMKB began with the establishment of a temporary campus at Semenggok, Kuching on August 10, 1974. In June 1987, the permanent campus was established in Bintulu, Sarawak. The new campus sit on a 714-hectare site. The established of the permanent is in line achieving the third goal of UPM's 2001-2010 strategic plan and that is to enhance UPM's capabilities as an internationally recognized center of study and agricultural services and bioresource. Through the restructuring of UPMKB beginning in 2018, five main thrusts have been identified namely agriculture, forestry, industrial chemistry, renewable energy and ethnic study. On July 1, 2020, two faculties were established, namely the Faculty of Agricultural Science and Forestry and the Faculty of Humanities, Management and Science (FKPS).

The Faculty of Humanities, Management and Science consists of two academic departments namely the Department of Social Sciences and Management and the Department of Science and Technology. The programs offered by FKPS has high graduate employability due to the relevance of its programs that meet the needs of local industries. Students will gain comprehensive in-class and outdoor learning assisted by

lecturers who are mostly with a PhD degree holders. Currently, the faculty offers one (1) pre-diploma preparatory program, two (2) Diploma programs, two (2) Bachelor programs, and Master and PhD with thesis. Generally, this faculty is able to accommodate about 2000 students by 2021.

## **Pengurusan Fakulti/ Faculty Management Committee**

### **Dekan/ Dean**

Prof. Madya Dr. Mohamad Maulana Magiman

### **Timbalan Dekan Akademik dan Hal Ehwal Pelajar**

#### **Deputy Dean**

Dr. Neilson Anak Teruki

### **Timbalan Dekan Penyelidikan dan Pendanaan**

#### **Deputy Dean**

Prof. Madya Ts. Dr. Wong Tze Jin

### **Ketua Jabatan Sains dan Teknologi**

#### **Head, Department of Science and Technology**

Dr. Wan Nor Zanariah Zainol@Abdullah

### **Ketua Jabatan Sains Sosial dan Pengurusan**

#### **Head, Department of Social Science and Management**

Dr. Ismawati Sharkawi

### **Penolong Pendaftar**

#### **Assitant Registrar**

Cik Nurul Haziqah Hasan

## **Program Prasiswazah yang ditawarkan**

### **Program Bachelor**

1. Bachelor Sains Pembangunan Manusia dengan Pengurusan (Kepujian)  
[*Bachelor of Human Development Science with Management (Honours)*]
2. Bachelor Sains Kimia Perindustrian dengan Kepujian [*Bachelor of Science In Industrial Chemistry with Honours*]

**MAKLUMAT DAN SKEMA PENGAJIAN PAKEJ ELEX UNTUK PROGRAM 4 TAHUN/ INFORMATION AND STUDY SCHEME ELEX PACKAGE FOR 4 YEAR PROGRAM**

**(Berkuatkuasa Untuk Ambilan Oktober 2022 Dan Seterusnya/ Effective For intake October 2022 onwards)**

**ELEX Requirements for Graduation**

The required number of LPE courses, CEL courses and LAX points to be fulfilled is based on MUET Bands as shown in the table below:

CEFR Tahap	MUET Tahap		IELTS	TOEFL iBT	CIEP	Pearson Test of English (PTE) Academic	Cambridge English	Keperluan Bergraduat
	Tahap	Band (format lama)	Band (format Baharu)	Skor	Skor	Tahap	Skor	
C1 – C2	5 - 6	5.0 – 5+	7.0 – 9.0	95 – 120	N/A	76 - 90	180 – 230	2 LPE + 1 CEL + 24 mata LAX <i>atau</i> 1 LPE + 1 CEL + 24 mata LAX + 1 Bahasa global
B1 – B2	3 - 4	3.0 – 4.5	4.0 – 6.5	42 – 94	104 – 109	43 – 75	140 – 179	2 LPE + 2 CEL + 24 mata LAX
A1 - A2	1 - 2	1.0 - 2.5	2.5 – 3.5	N/A	101 - 103	24 - 42	100 - 139	3 LPE + 3 CEL + 24 mata LAX

Sem	SKEMA UNTUK PROGRAM 4 TAHUN		
	MUET 1.0 – 2.5 IELTS 2.5 – 3.5 CIEP 101 – 103 PTE 24 – 42 CE 100 – 139	MUET 3.0 – 4.5 TOEFL iBT 42 – 94 IELTS 4.0 – 6.5 CIEP 104 – 109 PTE 43 – 75 CE 140 – 179	MUET 5.0 – 5+ TOEFL iBT 95 – 120 IELTS 7.0 – 9.0 PTE 76 – 90 CE 180 – 230
Sem 1	LAX 12 mata	LAX 6 mata	LAX 6 mata
Sem 2	6 LAX points	CEL2102	LPE2403
Sem 3	LPE2302	LPE2503	Pilih satu: CEL2103/2104
Sem 4	LPE2403	LAX 6 mata	Pilih satu: LPE2303 / LPE5402 / Bahasa Global
Sem 5	LPE2503	Pilih satu: CEL2105/2106/2107	LAX 6 mata
Sem 6	Pilih satu: CEL 2105/ 2106/2107	LAX 6 mata	Pilih satu: LPE2504 / LPE2303 / Bahasa Global
Sem 7	Pilih satu: CEL 2105/ 2106/2107	LAX 6 mata	LAX 6 mata
Sem 8	6 LAX points	LAX 6 mata	-

Note:

**Students must follow the scheme of study provided based on MUET (or**

**equivalent) every semester.**

- Students MUET Band 5 and 6 have the option of taking either one or two LPE courses. Students who choose one LPE course, must also take a course in global language.
- Students who are on Industrial Training in a specific semester, do not need to register for English Language course or English Language skills activities for that semester but have to register and attend the course or activity in the preceding or prospective semester (subject to pre-requisite courses).

### **Information for ELEX (English Language Experience) package**

#### **I. LPE courses [credit (2+1)]**

- LPE2302 (*Reading for Academic Purposes*)
- LPE2403 (*Academic Interaction and Presentation*)
- LPE2503 (*Academic Writing*)
- LPE2303 - **ONLY** for MUET Band 5 & 6
- LPE2504 - **ONLY** for MUET Band 5 & 6

*Note: Students who failed the BBI course, must repeat the course until they pass before taking the next course.*

#### **II. CEL courses**

- CEL2102 (*Effective Listening and Speaking*)
- CEL2103 (*Writing Academic Texts*)
- CEL2105 (*Spoken Communication for the Workplace*)
- CEL2106 (*Communication for Professional Development*)
- CEL2107 (*Written Business Communication*)

*Note: Students who obtained Level 1 for CEL course, must repeat the course until pass (Level 2 and above).*

#### **III. LAX**

- LAX (6 points or 12 points); 1 point = 2 hours per week
- 6 points LAX = 6 weeks x 2 hours per week
- 12 points LAX = 12 weeks x 2 hours per week
- LAX activities offered each semester will be announced by CALC (Centre for the Advancement of Language Competence)

*Note: Students who obtained TM (Not Satisfactory), must take the same or different LAX activities to replace the failed activity points (TM). Students must ensure that the required number of LAX points is fulfilled before graduation.*

### **Note:**

Students must follow the prescribed scheme of study based on their MUET results (or equivalent) every semester.

- MUET Band 5 and 6 students can choose to enrol in either one or two BBI courses. If they choose to do one BBI course, they must also enrol in one global language.
- Students who are away on Industrial Training in any semester do have not to enrol in any course or LAX activity for that particular semester. However, they must enrol in a course or LAX activity in the prior or subsequent semester (subject to course pre-requisites).

### **ELEX Package Information**

#### I. BBI Courses [(2+1) credits]

- LPE2302 (Reading for Academic Purposes)
- LPE2403 (Academic Interaction and Presentation)
- LPE2503 (Academic Writing)
  - BBI2425 – for MUET Band 5 & 6 students only
  - BBI2426 – for MUET Band 5 & 6 students only

Note: If students fail in a BBI course, they must repeat and pass the course before they can enrol in a subsequent BBI course.

#### II. CEL Courses

- CEL2102 (Effective Listening and Speaking)
- CEL2103 (Writing Academic Texts)
- CEL2105 (Spoken Communication for the Workplace)
- CEL2106 (Communication for Professional Development)
- CEL2107 (Written Business Communication)

Note: If students obtain LEVEL 1, they must repeat and pass the course (LEVEL 2 and above).

#### III. LAX

- LAX (6 points or 12 points); 1 point = 2 hours per week
- 6-point LAX = 6 weeks x 2 hours per week
- 12-point LAX = 12 weeks x 2 hours per week

Note: If students obtain TM (*Tidak Memuaskan*/Unsatisfactory), they must enrol in the same or different LAX activity to replace the failed points. Students must ensure that they fulfil the required number of LAX points for graduation.

#### IV. Pre-requisites for courses

- LPE2302: MUET Band 1 – 2/equivalent
- LPE2403: CEL 2102 Level 2 or MUET Band 3 – 4/equivalent
- LPE2503: Passed LPE2403
- CEL2103: Passed LPE2503 or MUET Band 5 – 6/equivalent
- CEL2102, 2105, 2106, 2107: No pre-requisite required

**Bachelor Sains Pembangunan  
Manusia dengan Pengurusan  
(Kepujian)**

***Bachelor of Human Development  
Science with Management  
(Honours)***

## STRUKTUR KURIKULUM/ CURRICULUM STRUCTURE

- Nama Program** : **Bachelor Sains Pembangunan Manusia dengan Pengurusan (Kepujian)/ Bachelor of Human Development Science with Management (Honours)**
- Jumlah Kredit Bergraduat** : **124 Jam Kredit/ Credit Hours**
- Tempoh Pengajian** : **8 Semester/ Semesters ( 4 Tahun/ Years )**
- Matlamat Program** :
1. Menghasilkan graduan yang kompeten dalam bidang pekerjaan yang berkaitan dengan Sains Pembangunan Manusia dengan Pengurusan
  2. Menghasilkan graduan yang berkebolehan menjalankan penyelidikan dalam bidang Sains Pembangunan Manusia dengan Pengurusan.
  3. Menghasilkan graduan yang berupaya menjadi pegawai atau pengusaha yang beretika dan berintegriti dalam bidang berkaitan Sains Pembangunan Manusia dengan Pengurusan

## RINGKASAN HASIL PEMBELAJARAN PROGRAM

Program	Pengetahuan	Kemahiran Teknikal/ Praktikal/ Psikomotor	Pendekatan Kemahiran Berfikir dan Saintifik	Kemahiran Berkomunikasi	Kemahiran Sosial dan Bertanggungjawab	Professionalisme, Nilai, Sikap dan Etika	Pendidikan Sepanjang Hayat dan Pengurusan Informasi	Kemahiran Pengurusan dan Keusahawanan	Kemahiran Kepimpinan
	P1	P2	P3	P4	P5	P6	P7	P8	P9
Bachelor Sains Pembangunan Manusia dengan Pengurusan (Kepujian)	37	10	17	11	8	15	15	5	4

### 1. Kursus Universiti/ University Courses (25 Kredit/ Credits)

KOD KURSUS/ COURSE CODE	NAMA KURSUS/ COURSE NAME	Kr	K	A/T	PRASYARAT/ PREREQUISITE	(√) Jika lulus/ if passed
SKP2101*	Kenegaraan Malaysia/ Malaysian Nationhood	3	3	0	Tiada/None	
FEM2310**	Nilai, Budaya dan Masyarakat Malaysia/ Malaysian Values, Culture and Society	2	2	0		
SKP3112*	Falsafah dan Isu Semasa/ Philosophy and Current Issues	2	2	0	Tiada/ None	
SKP3113**	Falsafah dan Isu Semasa Masyarakat Sivil/ Philosophy and Current Issues in Civil Society	3	3	0	Tiada/ None	



atau/ or SKP3123**	atau/ or Penghayatan Etika dan Peradaban di Malaysia/ <i>Internalization of Ethics and Civilization in Malaysia</i>					
SKP3122*	Penghayatan Etika dan Peradaban/ <i>Internalization of Ethics and Civilization</i>	2	2	0	Tiada/ None	
LPM2100**	Bahasa Melayu Komunikasi/ <i>Malay Language Communication</i>	2	2	0	Tiada / None	
FCE3204	Kemahiran Berfikir/ <i>Thinking Skills</i>	2	2	0	Tiada/None	
MGM3101	Prinsip Pengurusan/ <i>Principles of Management</i>	3	3	0	Tiada/None	
MGM3180	Asas Keusahawanan/ <i>Basic Entrepreneurship</i>	3	2	1	Tiada/None	
*PRT2008	Pertanian dan Manusia / <i>Agriculture and Man</i>	2	2	0	Tiada/None	
LPE2403	<i>Academic Interaction and Presentation</i>	3	2	1	CEL2102	
LPE2503	<i>Academic Writing</i>	3	2	1	LPE2403	
***AFS2001	Program Buku Hijau/ <i>Green Book Programme</i>	2	0	2		
QKXxxxx	Kokurikulum/ <i>Cocurriculum</i>	1	0	1		
QKXxxxx	Kokurikulum/ <i>Cocurriculum</i>	1	0	1		

**Nota: \* pelajar tempatan/ local student \*\*pelajar antarabangsa/ international student**

\*\*\*Khusus untuk program duplikasi yang ditawarkan di UPM Kampus Bintulu

## 2. Kursus Major/ Major Courses (66 Kredit/ Credits)

KOD KURSUS/ COURSE CODE	NAMA KURSUS/ COURSE NAME	Kr	K	A/ T	PRASYARAT/ PREREQUISITE	(√) Jika lulus/ if passed
FEM3001	Pengantar Pembangunan Manusia/ <i>Introduction to Human Development</i>	3	3	0	Tiada/None	
FEM3003	Kaedah Penyelidikan/ <i>Research Methods</i>	3	3	0	Tiada/None	
FEM3004	Statistik Sains Sosial/ <i>Social Science Statistic</i>	3	2	1	Tiada/None	
FEM3101	Psikologi Perkembangan: Kanak-Kanak dan Remaja/ <i>Developmental Psychology: Children and Adolescents</i>	3	2	1	Tiada/None	
FEM3102	Psikologi Perkembangan: Dewasa dan Penuaan/ <i>Developmental Psychology: Adult and Ageing</i>	3	3	0	Tiada/None	
FEM3104	Ekologi Kerja dan Pembangunan Manusia/ <i>Work Ecology and Human Development</i>	3	3	0	Tiada/None	
FEM3106	Polisi Sosial dan Undang-Undang/ <i>Social Policy and Law</i>	3	3	0	Tiada/None	

FEM3107	Penasihatian dan Kaunseling Asas/ <i>Basic Advising and Counselling</i>	3	2	1	Tiada/None	
FEM3109	Ekologi Keluarga dan Keibubapaan/ <i>Family Ecology and Parenting</i>	3	3	0	Tiada/None	
FEM3202	Pemakanan, Kesihatan dan Persekitaran/ <i>Nutrition, Health and Environment</i>	3	2	1	Tiada/None	
FEM3301	Etika dan Nilai dalam Pembangunan/ <i>Ethics and Values in Development</i>	3	3	0	Tiada/None	
FEM3312	Demografi Sosial/ <i>Social Demography</i>	3	3	0	Tiada/None	
FEM3313	Sosiologi dan Antropologi Sosial/ <i>Sociology and Social Anthropology</i>	3	3	0	Tiada/None	
FEM3331	Pengantar Pembangunan Komuniti/ <i>Introduction to Community Development</i>	3	3	0	Tiada/None	
FEM3343	Kerja Sosial dan Perkhidmatan Manusia/ <i>Social Work and Human Services</i>	3	2	1	Tiada/None	
FEM4903	Latihan Industri/ <i>Industrial Training</i>	6	0	6	Tiada/None	
FEM4959	Disertasi Bachelo/ <i>Bachelor Dissertation</i>	6	0	6	Tiada/None	
PSP3000	Ekonomi Keluarga dan Pengguna/ <i>Family and Consumer Economics</i>	3	3	0	Tiada/None	
PSP3301	Pengurusan Kewangan Isi Rumah/ <i>Household Financial Management</i>	3	2	1	Tiada/None	
SKP3501	Psikologi Sosial/ <i>Social Psychology</i>	3	3	0	Tiada/None	

### 3. Kursus Elektif/ *Elective Courses* (33 Kredit/ *Credits*)

#### **Nota/ Note:**

Pelajar boleh memilih 21 kredit daripada mana-mana kursus dalam sub bidang yang disenaraikan. Manakala 12 kredit boleh diambil dari mana-mana kursus peringkat bachelo dari mana-mana universiti dalam atau luar negara dengan kebenaran fakulti/ Students can choose 21 credits from any courses in any sub area listed. Another 12 credits can be chosen from any degree level courses from any local or international university with faculty's permission

#### a. Sub Bidang Psikologi Perkembangan Keluarga dan Kanak-Kanak/ *Sub Area in Family and Child Developmental Psychology*

KOD KURSUS/ COURSE CODE	NAMA KURSUS/ COURSE NAME	Kr	K	A/T	PRASYARAT/ PREREQUISIT E	(√) Jika lulus/ if passed
FEM3105	Tekanan dan Daya Tindak/ <i>Stress and Coping</i>	3	3	0	Tiada/None	
FEM4101	Motivasi dan Pencapaian Manusia/ <i>Motivation and Human Achievement</i>	3	3	0	Tiada/None	
FEM4103	Psikologi Tingkah Laku Sosial dan Interpersonal/ <i>Psychology of Social and Interpersonal Behavior</i>	3	3	0	Tiada/None	
FEM4104	Psikopatologi Kanak-Kanak dan Keluarga/ <i>Psychopathology of Children and Family</i>	3	3	0	Tiada/None	

FEM4113	Bimbingan dan Penasihatn Kerjaya/ <i>Career Guidance and Advising</i>	3	3	0	Tiada/ <i>None</i>	
FEM4115	Penasihatn Perkahwinan dan Keluarga/ <i>Marriage and Family Advising</i>	3	3	0	Tiada/ <i>None</i>	
FEM4123	Advokasi Kanak-Kanak dan Keluarga/ <i>Child and Family Advocacy</i>	3	3	0	Tiada/ <i>None</i>	
FEM4130	Kurikulum Program Kanak-Kanak Peringkat Awal/ <i>Curriculum in Early Childhood Programme</i>	3	3	0	Tiada/ <i>None</i>	
FEM4132	Perancangan dan Pentadbiran Program Kanak-Kanak Peringkat Awal/ <i>Planning and Administration of Early Childhood Programmes</i>	3	3	0	Tiada/ <i>None</i>	
FEM4133	Penilaian Perkembangan Kanak-Kanak/ <i>Assessment of Children's Development</i>	3	3	0	Tiada/ <i>None</i>	
FEM4136	Undang-Undang Keluarga/ <i>Family Law</i>	3	3	0	Tiada/ <i>None</i>	
LP-XXX	Bahasa Global/ <i>Global Language</i>	3				

b. Sub Bidang Pengurusan Sumber/ Sub Area in Resource Management

KOD KURSUS/ COURSE CODE	NAMA KURSUS/ COURSE NAME	Kr	K	A/T	PRASYARAT/ PREREQUISITE	(√) Jika lulus/ if passed
FEM3201	Pengurusan dan Pembuatan Keputusan/ <i>Management and Decision Making</i>	3	3	0	Tiada/ <i>None</i>	
FEM4204	Modal Insan dan Ekonomi/ <i>Human Capital and Economy</i>	3	3	0	Tiada/ <i>None</i>	
FEM4205	Pengurusan Sumber dalam Persekitaran Berubah/ <i>Resource Management in Changing Environment</i>	3	3	0	Tiada/ <i>None</i>	
FEM4225	Undang-Undang Buruh dan Perlindungan Pekerja/ <i>Labour Law and Employees' Protection</i>	3	3	0	Tiada/ <i>None</i>	
PSP3101	Analisis Masalah Pengurusan dalam Masyarakat/ <i>Analysis of the Managerial Problems in the Community</i>	3	2	1	Tiada/ <i>None</i>	
PSP3205	Gelagat Organisasi dan Pembuatan Keputusan/ <i>Organisational Behaviour and Decision Making</i>	3	3	0	Tiada/ <i>None</i>	
PSP4204	Pengurusan Konflik/ <i>Conflict Management</i>	3	2	1	PSP3205	
MGM3113	Gelagat Organisasi/ <i>Organizational Behavior</i>	3	3	0	MGM3101	
MGM3123	Pengurusan Sumber Manusia/ <i>Human Resource Management</i>	3	3	0	MGM3113	
LP-XXX	Bahasa Global/ <i>Global Language</i>	3				

c. Sub Bidang Kerja Sosial dan Pembangunan Komuniti/ *Sub Area in Social Work and Community Development*

KOD KURSUS COURSE CODE	NAMA KURSUS COURSE NAME	Kr	K	A/T	PRASYARAT PREREQUISITE	(√) Jika lulus/ if passed
FEM3302	E-Komuniti dan Komuniti Lestari/ <i>E-Community and Sustainable Community</i>	3	3	0	Tiada/None	
FEM3303	Perancangan dan Penilaian Program/ <i>Programme Planning and Evaluation</i>	3	2	1	Tiada/None	
FEM3311	Masalah Sosial/ <i>Social Problems</i>	3	3	0	Tiada/None	
FEM3334	Kepimpinan Pembangunan Komuniti/ <i>Community Development Leadership</i>	3	3	0	Tiada/None	
FEM3335	Pembangunan dan Kelestarian/ <i>Development and Sustainability</i>	3	3	0	Tiada/None	
FEM3341	Teori dan Praktis Kerja Sosial/ <i>Social Work Theory and Practice</i>	3	3	0	Tiada/None	
FEM3342	Kerja Sosial dan Kebajikan Sosial/ <i>Social Work and Social Welfare</i>	3	3	0	Tiada/None	
FEM4311	Perubahan Sosial/ <i>Social Change</i>	3	3	0	Tiada/None	
FEM4312	Masyarakat, Pembangunan dan Persekitaran/ <i>Society, Development and Environment</i>	3	3	0	Tiada/None	
FEM4314	Dasar dan Perancangan Sosial/ <i>Social Policy and Planning</i>	3	3	0	Tiada/None	
FEM4331	Kerja Komuniti dan Kesukarelawanan/ <i>Community Work and Volunteerism</i>	3	2	1	Tiada/None	
FEM4341	Kerja Sosial dengan Individu dan Kumpulan/ <i>Social Work with Individual and Group</i>	3	3	0	Tiada/None	
FEM4342	Perkhidmatan Kerja Sosial/ <i>Social Work Services</i>	3	3	0	Tiada/None	
SKP3109	Pembangunan Bandar/ <i>Urban Development</i>	3	3	0	Tiada/None	
LP-XXX	Bahasa Global/ <i>Global Language</i>	3				

d. Sub Bidang Falsafah dan Politik/ *Sub Area in Philosophy and Politics*

KOD KURSUS COURSE CODE	NAMA KURSUS COURSE NAME	Kr	K	A/T	PRASYARAT PREREQUISITE	(√) Jika lulus/ if passed
FEM3401	Pengantar Politik/ <i>Introduction to Politics</i>	3	3	0	Tiada/None	
FEM3402	Pengantar Falsafah/ <i>Introduction to Philosophy</i>	3	3	0	Tiada/None	
FEM3403	Konflik Sosial dalam Masyarakat Majmuk/ <i>Social Conflict in Plural Society</i>	3	3	0	Tiada/None	
FEM3404	Berfikir dan Menaakul/ <i>Thinking and Reasoning</i>	3	3	0	Tiada/None	

FEM4401	Politik dan Pembangunan/ <i>Politics and Development</i>	3	3	0	Tiada/None	
FEM4402	Sosiologi Politik/ <i>Political Sociology</i>	3	3	0	Tiada/None	
FEM4403	Politik Asia Tenggara/ <i>Southeast Asian Politics</i>	3	3	0	Tiada/None	
LP-XXX	Bahasa Global/ <i>Global Language</i>	3				

Nota/ Notes : Kr = Jam Kredit/ *Credit Hour*, K = Kuliah/ *Lecture*, A = Amali/ *Laboratory*, T = Tutorial

**Nota Penting/ Important Notes :**

1. Pelajar diwajibkan memilih **2 kredit** daripada **kursus kokurikulum** yang ditawarkan oleh universiti/ *It is compulsory for students to take 2 credits of cocurriculum courses offered by the university*
2. Pelajar perlu melengkapkan pakej keperluan bahasa inggeris seperti jadual di bawah :  
(Butiran lanjut mengenai CEL dan LAX sila rujuk muka surat 3 dalam buku panduan ini)  
*Students need to complete the english package as the table below: For more details on CEL and LAX please refer page 3 in this book.*

**SKEMA PENGAJIAN/ STUDY SCHEME**TAHUN 1/ 1<sup>ST</sup> YEARSEMESTER 1/ 1<sup>ST</sup> SEMESTER

KOD KURSUS COURSE CODE	NAMA KURSUS COURSE NAME	Kr	K	A/T
FEM3001	Pengantar Pembangunan Manusia/ <i>Introduction to Human Development</i>	3	3	0
FEM3109	Ekologi Keluarga dan Keibubapaan/ <i>Family Ecology and Parenting</i>	3	3	0
FEM3312	Demografi Sosial/ <i>Social Demography</i>	3	3	0
FEM3313	Sosiologi dan Antropologi Sosial/ <i>Sociology and Social Anthropology</i>	3	3	0
SKP2101*	Kenegaraan Malaysia/ <i>Malaysian Nationhood</i>	3	3	0
FEM2401**	Politik Malaysia dan Masyarakat/ <i>Malaysian Politics and Society</i>	2	2	0
FCE3204	Kemahiran Berfikir/ <i>Thinking Skills</i>	2	2	0
QKXxxxx	Kokurikulum/ <i>Cocurriculum</i>	1	0	1
<b>JUMLAH/ TOTAL</b>		<b>18</b>	<b>17</b>	<b>1</b>

SEMESTER 2/ 2<sup>ND</sup> SEMESTER

KOD KURSUS COURSE CODE	NAMA KURSUS COURSE NAME	Kr	K	A/T
FEM3101	Psikologi Perkembangan: Kanak-Kanak dan Remaja/ <i>Developmental Psychology: Children and Adolescents</i>	3	2	1
FEM3106	Polisi Sosial dan Undang-Undang/ <i>Social Policy and Law</i>	3	3	0
FEM3331	Pengantar Pembangunan Komuniti/ <i>Introduction to Community Development</i>	3	3	0
SKP3122*	Penghayatan Etika dan Peradaban/ <i>Internalization of Ethics and Civilization</i>	2	2	0
LPM2100**	Bahasa Melayu Komunikasi/ <i>Malay Language Communication</i>	2	2	0
LPE2403	<i>Academic Interaction and Presentation</i>	3	3	0
MGM3101	Prinsip Pengurusan/ <i>Principles of Management</i>	3	3	0
AFS2001	Program buku Hijau/ Green Book Programme	2	0	2
QKXxxxx	Kokurikulum/ <i>Cocurriculum</i>	1	0	1
<b>JUMLAH/ TOTAL</b>		<b>20</b>	<b>16</b>	<b>3</b>

TAHUN 2/ 2<sup>ND</sup> YEARSEMESTER 1/ 1<sup>ST</sup> SEMESTER

KOD KURSUS COURSE CODE	NAMA KURSUS COURSE NAME	Kr	K	A/T
FEM3102	Psikologi Perkembangan: Dewasa dan Penuaan/ <i>Developmental Psychology: Adult and Ageing</i>	3	3	0
FEM3104	Ekologi Kerja dan Pembangunan Manusia/ <i>Work Ecology and Human Development</i>	3	3	0
FEM3202	Pemakanan, Kesehatan dan Persekitaran/ <i>Nutrition, Health and Environment</i>	3	2	1
PSP3301	Pengurusan Kewangan Isi Rumah/ <i>Household Financial Management</i>	3	2	1
SKP3501	Psikologi Sosial/ <i>Social Psychology</i>	3	3	0
LPE2503	<i>Academic Writing</i>	3	3	0
<b>JUMLAH/ TOTAL</b>		<b>18</b>	<b>16</b>	<b>2</b>

SEMESTER 2/ 2<sup>ND</sup> SEMESTER

KOD KURSUS COURSE CODE	NAMA KURSUS COURSE NAME	Kr	K	A/T
FEM3003	Kaedah Penyelidikan/ <i>Research Method</i>	3	3	0
FEM3107	Penasihat dan Kaunseling Asas/ <i>Basic Advising and Counselling</i>	3	2	1
FEM3301	Etika dan Nilai dalam Pembangunan/ <i>Ethics and Values in Development</i>	3	3	0
FEM3343	Kerja Sosial dan Perkhidmatan Manusia/ <i>Social Work and Human Services</i>	3	2	1
PSP3000	Ekonomi Keluarga dan Pengguna/ <i>Family and Consumer Economics</i>	3	3	0
*PRT2008	Pertanian dan Manusia/ <i>Agriculture and Man</i>	2	2	0
<b>JUMLAH/ TOTAL</b>		<b>17</b>	<b>14</b>	<b>3</b>

\*Khusus untuk program duplikasi yang ditawarkan di UPM Kampus Bintulu

TAHUN 3/ 3<sup>RD</sup> YEARSEMESTER 1/ 1<sup>ST</sup> SEMESTER

KOD KURSUS/ COURSE CODE	NAMA KURSUS/ COURSE NAME	Kr	K	A/T
FEM3004	Statistik Sains Sosial/ <i>Social Science Statistic</i>	3	2	1
MGM3180	Asas Keusahawanan/ <i>Basic Entrepreneurship</i>	3	2	1
SKP3112*	Falsafah dan Isu Semasa/ <i>Philosophy and Current Issues</i>	2	2	0

SKP3113**	Falsafah dan Isu Semasa Masyarakat Sipil/ <i>Philosophy and Current Issues in Civil Society</i>			
atau/ or	atau/ or	3	3	0
SKP3123**	Penghayatan Etika dan Peradaban di Malaysia/ <i>Internalization of Ethics and Civilization in Malaysia</i>			
3 Kursus Elektif/ <i>Elective Courses</i>		9		
<b>JUMLAH/ TOTAL</b>		<b>19</b>		

\* Khusus untuk program duplikasi yang ditawarkan di UPM Kampus Bintulu

SEMESTER 2/ 2<sup>ND</sup> SEMESTER

KOD KURSUS/ COURSE CODE	NAMA KURSUS/ COURSE NAME	Kr	K	A/T
FEM4959A	Disertasi Bacelor/ <i>Bachelor Dissertation</i>	3	0	3
4 Kursus Elektif/ <i>Elective Courses</i>		12		
<b>JUMLAH/ TOTAL</b>		<b>15</b>		

\* Khusus untuk program duplikasi yang ditawarkan di UPM Kampus Bintulu

TAHUN 4/ 4<sup>TH</sup> SEMESTER

SEMESTER 1/ 1<sup>ST</sup> SEMESTER

KOD KURSUS/ COURSE CODE	NAMA KURSUS/ COURSE NAME	Kr	K	A/T
FEM4959B	Disertasi Bacelor/ <i>Bachelor Dissertation</i>	3	0	3
4 Kursus Elektif/ <i>Elective Courses</i>		12		
<b>JUMLAH/ TOTAL</b>		<b>15</b>		

SEMESTER 2/ 2<sup>ND</sup> SEMESTER

KOD KURSUS/ COURSE CODE	NAMA KURSUS/ COURSE NAME	Kr	K	A/T
FEM4903	Latihan Industri/ <i>Industrial Training</i>	6	0	6
<b>JUMLAH/ TOTAL</b>		<b>6</b>	<b>0</b>	<b>6</b>



**Bachelor Sains Kimia Perindustrian  
dengan Kepujian**

***Bachelor Of Science In Industrial  
Chemistry with Honours***

## STRUKTUR KURIKULUM / CURRICULUM STRUCTURE

<b>Nama Program</b>	:	Bachelor Sains Kimia Perindustrian dengan Keahlian / <i>Bachelor Of Science In Industrial Chemistry with Honours</i>
<b>Jumlah Kredit Bergraduat</b>	:	126 Jam Kredit / <i>Credit Hours</i>
<b>Tempoh Pengajian</b>	:	8 Semester / <i>Semesters (4 Tahun / Years)</i>
<b>Matlamat Program</b>	:	<ol style="list-style-type: none"> <li>1. Melahirkan ahli kimia perindustrian yang kompeten dalam aspek teori dan praktikal bagi menerajui bidang kimia.</li> <li>2. Melahirkan penyelidik yang berpengetahuan dan berkemahiran penyelidikan bagi tujuan inovasi dan pengajian lanjutan.</li> <li>3. Melahirkan pegawai dalam bidang berkaitan yang beretika dan berintegriti di sesebuah organisasi.</li> </ol>

## RINGKASAN HASIL PEMBELAJARAN PROGRAM

Program	Pengetahuan dan Kefahaman	Kemahiran Praktikal	Kemahiran Kognitif (CTPS)	Kemahiran Komunikasi (CS)	Kemahiran Interpersonal (TS)	Etika dan profesionalisme (EM)	Kemahiran Digital dan Pendidikan Sepanjang Hayat (LL)	Kemahiran Personal dan Keusahawanan (KK)	Kepimpinan, Autonomi dan Tanggungjawab (LS)	Kemahiran Numerasi (NS)
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
Bachelor Sains Kimia Perindustrian dengan Keahlian	36	18	26	8	8	9	11	5	5	6

### 1. Kursus Universiti / *University Courses (20 Kredit/ Credits)*

KOD KURSUS/ COURSE CODE	NAMA KURSUS/ COURSE NAME	Kr	K	A/T	PRASYARAT/ PREREQUISITE	(√) Jika lulus/ if passed
LPE2403	<i>Academic Interaction and Presentation</i>	3	3	0	LPE2302 atau/or MUET Band 3 atau/or 4	
LPE2503	<i>Academic Writing</i>	3	3	0	LPE2403	
MGM3180	<i>Asas Keusahawanan/ Basic Entrepreneurship</i>	3	2	1	Tiada/ None	
***PRT2008	<i>Pertanian Dan Manusia / Agriculture and Man</i>	2	2	0	Tiada / None	
***AFS2001	<i>Program Buku Hijau/ Green Book Programme</i>	2	0	2	Tiada / None	
SKP2101*	<i>Kenegaraan Malaysia/</i>	3	3	0	Tiada/ None	

<i>Malaysian Nationhood</i>					
FEM2401**	Politik Malaysia dan Masyarakat/ <i>Malaysian Politics and Society</i>	2	2	0	Tiada/ None
SKP3112*	Falsafah dan Isu Semasa/ <i>Philosophy and Current Issues</i>	2	2	0	Tiada/ None
SKP3113**	Falsafah dan Isu Semasa Masyarakat Sivil/ <i>Philosophy and Current Issues in Civil Society</i>	3	3	0	Tiada/ None
atau/ or	atau/ or				
SKP3123**	Penghayatan Etika dan Peradaban di Malaysia/ <i>Internalization of Ethics and Civilization in Malaysia</i>	3	3	0	Tiada/ None
SKP3122*	Penghayatan Etika dan Peradaban/ <i>Internalization of Ethics and Civilization</i>	2	2	0	Tiada/ None
LPM2100**	Bahasa Melayu Komunikasi/ <i>Malay Language Communication</i>	2	2	0	Tiada/ None
QKXxxxx	Ko-kurikulum/ <i>Co-curriculum</i>	1	0	1	Tiada/ None
QKXxxxx	Ko-kurikulum/ <i>Co-curriculum</i>	1	0	1	Tiada/ None

**Nota: \* pelajar tempatan/ local student \*\*pelajar antarabangsa/ international student**

\*\*\* Khusus untuk program duplikasi yang ditawarkan di UPM Kampus Bintulu

2. Kursus Teras / Core Courses (75 Kredit / Credits)

KOD KURSUS/ COURSE CODE	NAMA KURSUS/ COURSE NAME	Kr	K	A/T	PRASYARAT/ PREREQUISITE	(√) Jika lulus/ if passed
CHY3003	Asas Keselamatan Makmal/ <i>Basic Laboratory Safety</i>	2	2	0	Tiada/ None	
CHY3101	Kimia Fizik I/ <i>Physical Chemistry I</i>	4	3	1	Tiada/ None	
CHY3102	Kimia Fizik II/ <i>Physical Chemistry II</i>	4	3	1	CHY3101	
CHY3103	Kimia Polimer/ <i>Polymer Chemistry</i>	4	3	1	CHY3101	
CHY3201	Kimia Organik I/ <i>Organic Chemistry I</i>	4	3	1	CHY2001 atau/or setara/ equivalent	
CHY3202	Kimia Organik II/ <i>Organic Chemistry II</i>	4	3	1	CHY3201	
CHY3301	Keberkalaan dan Ikatan Kimia/ <i>Periodicity and Chemical Bonding</i>	4	3	1	CHY2001 atau/or setara/ equivalent	

CHY3304	Struktur Pepejal & Kimia Koordinatan/ <i>Solid Structure and Coordination Chemistry</i>	4	3	1	CHY3301	
CHY3401	Kimia Analisis/ <i>Analytical Chemistry</i>	3	2	1	CHY3101 atau/ or CHY3002	
CHY3402	Spektroskopi Kimia/ <i>Chemical Spectroscopy</i>	4	3	1	CHY3101 dan/ and CHY3201	
CHY3502	Kimia Organik Perindustrian/ <i>Industrial Organic Chemistry</i>	3	3	0	CHY3201	
CHY3503	Kimia Tak Organik Perindustrian/ <i>Industrial Inorganic Chemistry</i>	3	3	0	CHY3304	
CHY3504	Prinsip Teknologi Kimia/ <i>Chemical Technology Principles</i>	4	4	0	CHY3102	
CHY3505	Plastik dan Komposit/ <i>Plastics and Composites</i>	3	3	0	CHY3103	
CHY3506	Oleokimia/ <i>Oleochemistry</i>	3	2	1	CHY3202	
CHY3507	Kimia dan Teknologi Getah/ <i>Rubber Chemistry and Technology</i>	2	2	0	CHY3103	
CHY4501	Keusahawanan Kimia/ <i>Chempreneurship</i>	3	3	0	CHY3501 atau/ or CHY3504	
CHY4903	Latihan Industri/ <i>Industrial Training</i>	8	0	8	Kebenaran Jabatan/ <i>Department Approval</i>	
CHY4959	Disertasi Bachelo/ <i>Bachelor Dissertation</i>	6	0	6	Kebenaran Jabatan/ <i>Department Approval</i>	
MTS3100	Kalkulus/ <i>Calculus</i>	3	3	0	Tiada/ <i>None</i>	

### 3. Kursus Elektif / *Elective Course* (31 Jam Kredit / *Credit Hours* )

Pelajar dikehendaki mengambil 16 kredit dari kursus yang tersenarai dalam Elektif Bidang, 9 kredit dari Elektif Opsyen dan 6 kredit dari Elektif Umum dengan persetujuan Ketua Jabatan/ *Students are required to take 16 credits of courses listed in Major Electives, 9 credits from Optional Electives and 6 credits from General Electives with the approval of the Head of Department.*

#### i. Elektif Bidang/ *Major Electives* (16 Kredit/ *Credits*)

KOD KURSUS/ COURSE CODE	NAMA KURSUS/ COURSE NAME	Kr	K	A/T	PRASYARAT/ PREREQUISITE	(√) Jika lulus/ if passed
CHY3203	Sintesis Organik/ <i>Organic Synthesis</i>	4	3	1	CHY3202 dan/ and CHY3402	
CHY3204	Kimia Hasil Semula Jadi/ <i>Natural Products Chemistry</i>	4	3	1	CHY3202 dan/ and CHY3402	
CHY3205	Kimia Protein/ <i>Protein Chemistry</i>	3	3	0	CHY3202 dan/ and CHY3402	

CHY3508	Kimia Hijau/ <i>Green Chemistry</i>	3	2	1	CHY3402	
CHY3602	Proses Penapisan Petroleum/ <i>Petroleum Refining Processes</i>	3	3	0	CHY3202	
CHY4101	Kinetik Kimia/ <i>Chemical Kinetics</i>	3	2	1	CHY3102	
CHY4102	Termodinamik Kimia/ <i>Chemical Thermodynamics</i>	3	2	1	CHY3102	
CHY4103	Kimia Pengkomputeran/ <i>Computational Chemistry</i>	4	3	1	CHY3102	
CHY4301	Kimia Keadaan Pepejal/ <i>Solid State Chemistry</i>	3	3	0	CHY3302 atau/ or CHY3304	
CHY4401	Elektrokimia/ <i>Electrochemistry</i>	3	3	0	CHY3101 dan/ and CHY3401	
CHY4402	Teknik Pemisahan/ <i>Separation Techniques</i>	3	3	0	CHY3401	
CHY4403	Kimia Forensik/ <i>Forensic Chemistry</i>	3	3	0	CHY3402	
CHY4601	Pemangkinan Heterogen/ <i>Heterogeneous Catalysis</i>	3	2	1	CHY3102	

ii. Elektif Opsyen/ *Optional Electives* (9 Kredit/ *Credits*)

KOD KURSUS/ <i>COURSE CODE</i>	NAMA KURSUS/ <i>COURSE NAME</i>	Kr	K	A/T	PRASYARAT/ <i>PREREQUISITE</i>	(√) Jika lulus/ if passed
FSA4001	Sistem Pengurusan Kualiti dalam Sains/ <i>Quality Management System in Science</i>	3	3	0	Tiada/ <i>None</i>	
FSA4002	Pengurusan Inovasi dan Teknologi untuk Saintis/ <i>Innovation and Technology Management for Scientist</i>	3	3	0	Tiada/ <i>None</i>	
FST3302	Asas Pemprosesan dan Pengawetan Makanan/ <i>Fundamentals of Food Processing and Preservation</i>	3	3	0	Tiada/ <i>None</i>	
ECH4410	Pemprosesan Bahan Nano/ <i>Nanomaterials Processing</i>	3	3	0	Tiada/ <i>None</i>	
EPF4611	Teknologi Nutrasedutikal/ <i>Nutraceutical Technology</i>	3	3	0	Tiada/ <i>None</i>	
ESC3012	Teknologi Rawatan Sisa Pepejal/ <i>Solid Waste Treatment Technology</i>	3	3	0	Tiada/ <i>None</i>	
ESC3204	Rawatan Air Sisa/ <i>Wastewater Treatment</i>	3	2	1	Tiada/ <i>None</i>	
ESC4404	Teknologi Rawatan Sisa Berbahaya/ <i>Hazardous Waste Treatment Technology</i>	3	3	0	Tiada/ <i>None</i>	
BTC3001	Pengenalan Kepada Bioteknologi/ <i>Introduction to Biotechnology</i>	2	2	0	Tiada/ <i>None</i>	

iii. Elektif Umum/ *General Electives* (6 Kredit/ *Credits*)

KOD KURSUS/ <i>COURSE CODE</i>	NAMA KURSUS/ <i>COURSE NAME</i>	Kr	K	A/T	PRASYARAT/ <i>PREREQUISITE</i>	(√) Jika lulus/ if passed
LP_2101	Bahasa Global Asas/ <i>Basic Global Language</i>	3	3	0	Tiada/ <i>None</i>	
	Elektif 1/ <i>Elective 1</i>	3			Tiada/ <i>None</i>	

Nota/ Notes : Kr = Jam Kredit/ Credit Hour, K = Kuliah/ Lecture, A = Amali/ Laboratory, T = Tutorial

**Nota Penting/ Notes :**

1. Pelajar perlu melengkapkan pakej keperluan Bahasa Inggeris seperti jadual di bawah. Butiran lanjut mengenai CEL dan LAX sila rujuk di muka surat 3.  
*Students need to complete the english package as shown in the table below. For more details on CEL and LAX please refer to page 3.*

## SKEMA PENGAJIAN/ STUDY SCHEME

### TAHUN 1 / 1<sup>ST</sup> YEAR

#### SEMESTER 1 / 1<sup>ST</sup> SEMESTER

KOD KURSUS/ COURSE CODE	NAMA KURSUS/ COURSE NAME	Kr	K	A/T
CHY3003	Asas Keselamatan Makmal/ <i>Basic Laboratory Safety</i>	2	2	0
CHY3101	Kimia Fizik I/ <i>Physical Chemistry I</i>	4	3	1
CHY3201	Kimia Organik I/ <i>Organic Chemistry I</i>	4	3	1
MTS3100	Kalkulus/ <i>Calculus</i>	3	3	0
PRT2008***				
SKP3112*	Falsafah dan Isu Semasa/ <i>Philosophy and Current Issues</i>	2	2	0
SKP3113**	Falsafah dan Isu Semasa Masyarakat Sivil/ <i>Philosophy and Current Issues in Civil Society</i>	3	3	0
atau/or	atau/or			
SKP3123**	Penghayatan Etika dan Peradaban di Malaysia/ <i>Internalization of Ethics and Civilization in Malaysia</i>	3	3	0
<b>JUMLAH/ TOTAL</b>		<b>17/18</b>	<b>14/15</b>	<b>3</b>

\*\*\* Khusus untuk program duplikasi yang ditawarkan di UPM Kampus Bintulu

#### SEMESTER 2 / 2<sup>ND</sup> SEMESTER

KOD KURSUS/ COURSE CODE	NAMA KURSUS/ COURSE NAME	Kr	K	A/T
CHY3301	Keberkalaan dan Ikatan Kimia/ <i>Periodicity and Chemical Bonding</i>	4	3	1
CHY3401	Kimia Analisis/ <i>Analytical Chemistry</i>	3	2	1
MGM3180	Asas Keusahawanan/ <i>Basic Entrepreneurship</i>	3	2	1
AFS2001***	Program Buku Hijau/ <i>Green Book Programme</i>	2	0	2
SKP2101*	Kenegaraan Malaysia/ <i>Malaysian Nationhood</i>	3	3	0
FEM2401**	Politik Malaysia dan Masyarakat/ <i>Malaysian Politics and Society</i>	2	2	0
SKP3122*	Penghayatan Etika dan Peradaban/ <i>Internalization of Ethics and Civilization</i>	2	2	0
LPM2100**	Bahasa Melayu Komunikasi/ <i>Malay Language Communication</i>	2	2	0

LPE2403	<i>Academic Interaction and Presentation</i>	3	3	0
<b>JUMLAH/ TOTAL</b>		<b>17/18</b>	<b>14/15</b>	<b>3</b>

\*\*\*\* Khusus untuk program duplikasi yang ditawarkan di UPM Kampus Bintulu

## TAHUN 2 / 2<sup>ND</sup> YEAR

### SEMESTER 1 / 1<sup>ST</sup> SEMESTER

KOD KURSUS/ COURSE CODE	NAMA KURSUS/ COURSE NAME	Kr	K	A/T
CHY3102	Kimia Fizik II/ <i>Physical Chemistry II</i>	4	3	1
CHY3103	Kimia Polimer/ <i>Polymer Chemistry</i>	4	3	1
CHY3402	Spektroskopi Kimia/ <i>Chemical Spectroscopy</i>	4	3	1
LPE2503	<i>Academic Writing</i>	3	3	0
QKXxxxx	Kokurikulum/ <i>Co-curriculum</i>	1	0	1
<b>JUMLAH/ TOTAL</b>		<b>16</b>	<b>12</b>	<b>4</b>

### SEMESTER 2 / 2<sup>ND</sup> SEMESTER

KOD KURSUS/ COURSE CODE	NAMA KURSUS/ COURSE NAME	Kr	K	A/T
CHY3202	Kimia Organik II/ <i>Organic Chemistry II</i>	4	3	1
CHY3304	Struktur Pepejal & Kimia Koordinatan/ <i>Solid Structure and Coordination Chemistry</i>	4	3	1
CHY3504	Prinsip Teknologi Kimia/ <i>Chemical Technology Principles</i>	4	4	0
QKXxxxx	Kokurikulum/ <i>Co-curriculum</i>	1	0	1
LP_2101	Bahasa Global Asas/ <i>Basic Global Language</i>	3	3	0
	Elektif/ <i>Elective</i>	2		
<b>JUMLAH/ TOTAL</b>		<b>18</b>		

## TAHUN 3 / 3<sup>RD</sup> YEAR

### SEMESTER 1 / 1<sup>ST</sup> SEMESTER

KOD KURSUS/ COURSE CODE	NAMA KURSUS/ COURSE NAME	Kr	K	A/T
CHY3502	Kimia Organik Perindustrian/ <i>Industrial Organic Chemistry</i>	3	3	0
CHY3503	Kimia Tak Organik Perindustrian/ <i>Industrial Inorganic Chemistry</i>	3	3	0



CHY3505	Plastik dan Komposit/ <i>Plastics and Composites</i>	3	3	0
	Elektif/ <i>Electives</i>	9		
	<b>JUMLAH/ TOTAL</b>	<b>18</b>		

#### SEMESTER 2 / 2<sup>ND</sup> SEMESTER

KOD KURSUS/ COURSE CODE	NAMA KURSUS/ COURSE NAME	Kr	K	A/T
CHY3506	Oleokimia/ <i>Oleochemistry</i>	3	2	1
CHY3507	Kimia dan Teknologi Getah/ <i>Rubber Chemistry and Technology</i>	2	2	0
CHY4959A	Disertasi Bachelor/ <i>Bachelor Dissertation</i>	3	0	3
	Elektif/ <i>Elective</i>	9		
	<b>JUMLAH/ TOTAL</b>	<b>17</b>		

#### TAHUN 4 / 4<sup>TH</sup> YEAR

##### SEMESTER 1 / 1<sup>ST</sup> SEMESTER

KOD KURSUS/ COURSE CODE	NAMA KURSUS/ COURSE NAME	Kr	K	A/T
CHY4501	Keusahawanan Kimia/ <i>Chempreneurship</i>	3	3	0
CHY4959B	Disertasi Bachelor/ <i>Bachelor Dissertation</i>	3	0	3
	Elektif/ <i>Elective</i>	8		
	<b>JUMLAH/ TOTAL</b>	<b>14</b>		

##### SEMESTER 2 / 2<sup>ND</sup> SEMESTER

KOD KURSUS/ COURSE CODE	NAMA KURSUS/ COURSE NAME	Kr	K	A/T
CHY4903	Latihan Industri/ <i>Industrial Training</i>	8	0	8
	<b>JUMLAH/ TOTAL</b>	<b>8</b>	<b>0</b>	<b>8</b>

## **SINOPSIS KURSUS / COURSE SYNOPSIS**

### **Jabatan Sains Sosial dan Pengurusan / Department Of Social Science and Management**

#### **AFS2001 Program Buku Hijau/ Green Book Programme 2(0+2)**

Prasyarat : Tiada

Kursus ini meliputi teknik penggunaan peralatan serta teknologi dalam amalan pertanian dan mengenal pasti kaedah yang sesuai dalam pengurusan aktiviti pertanian. Latihan dan kerja lapangan dilaksanakan dengan amalan pertanian yang baik.

*This course covers techniques for using equipment and technology in agricultural practices and identifying appropriate methods in managing agricultural activities. Training and fieldwork are carried out with good farming practices.*

#### **FEM3001 Pengantar Pembangunan Manusia/ Introduction to Human Development 3(3+0)**

Prasyarat / Pre-Requisite : Tiada/ None

Kursus ini merangkum perkembangan sepanjang hayat individu sebagai insan ciptaan Tuhan termasuk nilai murni, fitrah, potensi dan resiliensi individu. Konteks ekologi individu, keluarga dan komuniti dalam menangani isu dan cabaran semasa dan masa depan turut dibincangkan.

*This course encompasses the life-span development of an individual as God-created being which includes moral values, nature, potential and individual resiliency. The ecological contexts of individuals, family, and community in handling current and future issues and challenges are also discussed.*

#### **FEM3003 Kaedah Penyelidikan/ Research Method 3(3+0)**

Prasyarat / Pre-Requisite : Tiada/ None

Kursus ini merangkum falsafah penyelidikan, konsep asas penyelidikan, tujuan dan kepentingan penyelidikan, serta aplikasi teknik kuantitatif dan teknik kualitatif dalam cadangan penyelidikan. Kursus ini memfokus kepada langkah penyediaan cadangan penyelidikan dan kepentingan etika dalam penyediaan laporan penyelidikan

*This course covers the fundamental philosophy of research, basic concepts of research, its purposes and importance, and application of quantitative and qualitative techniques in research proposal. This course focuses on steps in research proposals preparation and the importance of ethics in the preparation of research report.*

#### **FEM3004 Statistik Sains Sosial/ Social Science Statistic 3(2+1)**

Prasyarat / Pre-Requisite : Tiada/ None

Kursus ini merangkum pemerihalan data sains sosial, pembolehubah rawak, taburan persampelan, penganggar titik, penganggar selang dan ujian hipotesis. Turut dibincangkan ialah analisis parametrik dan bukan parametrik

*This course covers social science data descriptive, random variables, sampling distributions, point estimations, confidence intervals and hypothesis testing. The analysis of parametric and non parametric are also discussed*

**FEM3101      Psikologi Perkembangan: Kanak-Kanak dan Remaja/ 3(2+1)**  
***Developmental Psychology: Children and Adolescents***

Prasyarat / *Pre-Requisite* : Tiada/ *None*

Kursus ini merangkum proses pertumbuhan dan perkembangan fizikal, kognitif, sosial dan emosi dari persenyawaan sehingga remaja. Aspek utama setiap peringkat perkembangan termasuk proses dan kesan interaksi kanak-kanak dan remaja dengan persekitaran juga diberi penekanan.

*This course covers the processes of physical, cognitive, social and emotional growth and development from conception through adolescence. Major aspects of each stage of development including the processes and outcomes of interaction between the child and adolescent and the environment are also emphasized.*

**FEM3102      Psikologi Perkembangan: Dewasa dan Penuaan/ *Developmental* 3(3+0)**  
***Psychology: Adult and Ageing***

Prasyarat / *Pre-Requisite* : Tiada/ *None*

Kursus ini merangkum analisis perkembangan dewasa dan penuaan melalui perspektif jangka hayat. Proses perkembangan asas, interaksi dan transaksi proses perkembangan asas dalam konteks sosio-budaya turut dibincangkan.

*This course covers the analysis of adult development and ageing from a life span perspective. Basic developmental processes, interaction and transaction of the basic processes in socio-cultural contexts are also discussed.*

**FEM3104      Ekologi Kerja dan Pembangunan Manusia/ *Work Ecology and* 3(3+0)**  
***Human Development***

Prasyarat / *Pre-Requisite* : Tiada/ *None*

Kursus ini merangkum aspek sosial dan psikologikal kerja termasuklah sikap kerja, tingkah laku, emosi, motivasi, semangat kerja, kesihatan dan keselamatan, kesejahteraan pekerja dan kepimpinan dalam organisasi. Tumpuan juga diberikan kepada faktor penentu kepuasan, prestasi dan produktiviti kerja

*This course covers social and psychological aspects of works including work attitude, behaviour, emotions, motivation, work morale, health and safety, worker's wellbeing and leadership in the organisation. Emphasis is also given to determinant of job satisfaction, job performance and productivity.*

**FEM3106      Polisi Sosial dan Undang-Undang/ *Social Policy and Law* 3(3+0)**

Prasyarat / *Pre-Requisite* : Tiada/ *None*

Kursus ini merangkum pembentukan dan pelaksanaan polisi sosial dalam konteks kebajikan dan keadilan sosial di Malaysia. Respon sistem perundangan dan kehakiman terhadap isu-isu berkaitan polisi sosial turut diberi penekanan

*This course covers the formation and implementation of social policy in Malaysian context of social welfare and justice. The legal and judiciary's systems responses are also emphasized.*

**FEM3107      Penasihat dan Kaunseling Asas/ *Basic Advising and Counselling* 3(2+1)**

Prasyarat / *Pre-Requisite* : Tiada/ *None*

Kursus ini merangkum aplikasi teori, kemahiran dan teknik dalam menjalankan kaunseling individu dan kelompok. Tumpuan diberikan kepada falsafah, prinsip, etika serta kemahiran kaunseling dengan pelbagai fasa kehidupan individu dan populasi berlainan. Kemahiran komunikasi, mengenal pasti masalah, membina matlamat dan strategi penyelesaian masalah turut dibincangkan.

*This course covers the applications of theories, skills and techniques on individual and group counselling. Emphasis is given on counselling philosophy, principles and ethics as well as skills to work on different facets of individual's life and various populations. Communication skills, problem identification, goals development and problem solving strategy are also discussed.*

**FEM3109      Ekologi Keluarga dan Keibubapaan/ *Family Ecology and Parenting*      3(3+0)**

Prasyarat / *Pre-Requisite* : Tiada/ *None*

Kursus ini merangkum kepada keluarga sebagai satu sistem, kitaran hidup keluarga, dinamik dalaman keluarga dan keibubapaan. Cabaran dan isu kehidupan keluarga dan keibubapaan mengikut peringkat perkembangan manusia dibincangkan.

*This course covers the family as a system, family life course, internal dynamic family and parenting. Challenges and issues according to developmental stages will be discussed.*

**FEM3202      Pemakanan, Kesihatan dan Persekitaran/ *Nutrition, Health and Environment*      3(2+1)**

Prasyarat / *Pre-Requisite* : Tiada/ *None*

Kursus ini merangkum prinsip pemakanan dan perkaitannya dengan kesihatan dan persekitaran dalam pelbagai konteks termasuk gaya hidup sihat, impak pembangunan, faktor sosiobudaya, persekitaran fizikal, penyakit dan kaedah untuk mengelakkan faktor risiko penyakit. Kepentingan pembangunan lestari dalam pencegahan dan pengawalan masalah pemakanan, kesihatan dan persekitaran juga diberi penekanan.

*This course covers the principles of nutrition and their interrelationship of health and environment in the context of healthy lifestyle, development impact, socio-culture factor, physical environment, diseases and ways to avoid disease. The importance of sustainable development in the prevention and control of nutritional problem, health and environment is also emphasized.*

**FEM3301      Etika dan Nilai dalam Pembangunan/ *Ethics and Values in Development*      3(3+0)**

Prasyarat / *Pre-Requisite* : Tiada/ *None*

Kursus ini merangkum pengenalan konsep dan falsafah etika, moral dan pembangunan, perbandingan teori pembangunan, kedudukan dan peranan etika dan moral, pembangunan seimbang dan bersepadu fizikal, kemanusiaan, sosial dan kerohanian.

*This course covers the introduction of concept and philosophy of ethics, moral and development, comparison of theories of development, positions and roles of moral and ethics, balanced and intergrated physical, human, social and spiritual development.*

**FEM3312      Demografi Sosial/ *Social Demography*      3(3+0)**

Prasyarat / *Pre-Requisite* : Tiada/ *None*

Kursus ini merangkum elemen utama demografi seperti saiz, komposisi dan distribusi penduduk. Kursus ini juga memfokuskan kepada kepentingan peranan faktor perubahan dalam mempengaruhi dinamik elemen utama demografi dan kesan faktor demografi ke atas kesejahteraan manusia.

*This course covers the main elements of demography such as size, composition and distribution of population. The course also focuses on the importance of changing factors in influencing the dynamic of the main elements of demography and the effects of the demographic factors on people's well being*

**FEM3313      Sosiologi dan Antropologi Sosial/ Sociology and Social Anthropology      3(3+0)**

Prasyarat / Pre-Requisite : Tiada/ None

Kursus ini merangkum perspektif sosiologi dan antropologi untuk memahami dialektik antara diri (individu) dan masyarakat. Memberi tumpuan kepada sejarah paradigma dan sarjana utama serta konsep mereka dalam bidang sosiologi dan antropologi; aplikasinya dalam mentafsir fenomena sosial, isu metodologi, dan kepentingan perspektif sosiologi dan antropologi dalam memahami masyarakat dan budaya.

*This course covers sociological and anthropological perspectives in understanding the dialectic between self (individual) and society. Focus on the history of the major paradigms and prominent scholars with their concepts in sociology and anthropology, their applications in interpreting social phenomena, methodological issues, and the significance of sociological and anthropological perspectives in understanding society and culture.*

**FEM3331      Pengantar Pembangunan Komuniti/ Introduction to Community Development      3(3+0)**

Prasyarat / Pre-Requisite : Tiada/ None

Kursus ini merangkum konsep-konsep asas pembangunan komuniti, prinsip, nilai, falsafah, matlamat pembangunan komuniti, pendekatan dan jenis pembangunan komuniti. Ia juga merangkum peranan pekerja komuniti serta agensi pelaksana pembangunan komuniti.

*This course covers the basic concepts of community development, principles, values, philosophy, community development goals, approaches and types of community development. It also covers role of community workers and community development implementing agencies.*

**FEM3343      Kerja Sosial dan Perkhidmatan Manusia/ Social Work and Human Services      3(2+1)**

Prasyarat / Pre-Requisite : Tiada/ None

Kursus ini merangkum konsep profesional dalam kerja sosial dan perkhidmatan manusia. Peranan dan praktis kerja sosial sebagai respons kepada isu sosial dan kepentingan pengetahuan, kemahiran dan nilai dalam profesion kerja sosial turut dibincangkan

*This course covers professional concept in social work and human services. Social work roles and practices as a response to social issues and the importance of knowledge, skills and values in social work profession are also discussed.*

**FEM4903      Latihan Industri/ Industrial Training      6(0+6)**

Prasyarat / Pre-Requisite : Persetujuan Pensyarah/ Lecturer's Approval

Melalui kursus ini, pelajar didedahkan kepada persekitaran kerja yang sebenar di industri/organisasi. Latihan merangkumi aplikasi aspek teori dan praktikal yang telah dipelajari dengan amalan semasa di tempat kerja. Kemahiran menyelesaikan masalah dan komunikasi turut diberi penekanan

*In this course, students will be exposed to real working environment in industries/organizations. Training includes application of the theoretical and practical aspects that have been studied with current practices in the workplace. Problem solving and communication skills are also emphasized.*

**FEM4959      Disertasi Bacelor/ Bachelor Dissertation**

**6(0+6)**

Prasyarat / *Pre-Requisite* : Tiada/ None

Kursus ini merangkum penyediaan cadangan, pelaksanaan dan penulisan saintifik untuk sesuatu projek penyelidikan. Pendekatan saintifik bagi menjana data secara sistematik melalui rekabentuk, pengumpulan dan analisis data yang sesuai diberi penekanan.

*This course covers the preparation of proposal, implementation and scientific writing of research project. Scientific approach to generate data systematically through appropriate design, data collection and analysis are emphasized.*

**PSP3000      Ekonomi Keluarga dan Pengguna/ Family and Consumer Economics      3(3+0)**

Prasyarat / *Pre-Requisite* : Tiada/ None

Kursus ini merangkum prinsip dan teori ekonomi yang relevan serta aplikasinya ke atas individu/keluarga sebagai pengguna dan pengeluar. Impak faktor ekonomi, psiko-sosial, politik, persekitaran, dasar ekonomi kerajaan dan amalan pasaran ke atas kesejahteraan keluarga dan pengguna juga dibincangkan.

*This course covers the relevant economic principle and theory and its application to individuals/family as consumers and producers. The impact of economic, psycho-social, political, environmental factors, government economics policy and marketing practices on the wellbeing of the family and consumer are also discussed.*

**PSP3301      Pengurusan Kewangan Isi Rumah/ Household Financial Management      3(2+1)**

Prasyarat / *Pre-Requisite* : Tiada/ None

Kursus ini merangkum topik tentang kepentingan perancangan kewangan, pengurusan pendapatan dan perbelanjaan isi rumah. Tumpuan juga diberi kepada analisis masalah kewangan isi rumah dan kemahiran dalam pilihan penggunaan kredit, simpanan, pelaburan, cukai dan pengurusan risiko isi rumah berdasarkan sistem kewangan konvensional dan Islam

*The course covers the topic on the importance of household financial planning, managing income and expenditure. Focus is also given on the analysis of household financial problems and skills in consumption credits choices, savings, investments and household risks management based on conventional and Islamic systems.*

**SKP3501      Psikologi Sosial/ Social Psychology**

**3(3+0)**

Prasyarat / *Pre-Requisite* : Tiada/ None

Kursus ini merangkum cara manusia mempengaruhi dan dipengaruhi oleh pemikiran, perasaan, dan tingkah laku oleh manusia lain. Kursus ini juga memfokus kepada interaksi sosial antara individu, antara individu dengan kelompok dan antara kelompok dengan kelompok.

*This course covers ways human being influence and being influenced by other's people thinking, feelings, and behaviour. This course focuses on the interaction between individuals, between individuals and groups, and between groups.*

**Jabatan Sains Dan Teknologi / Department Of Science And Technologi**

MTS3100 Kalkulus / *Calculus* 3(3+0)

Prasyarat : Tiada

Kursus ini merangkum pembinaan konsep dalam kalkulus satu pembolehubah, konsep set dan fungsi untuk memahami idea mengenai had, keselanjaran dan terbitan. Pembezaan dan teorem yang berkaitan kamiran sebagai proses anti-terbitan serta teknik kamiran ditekankan.

*This course covers the building up of the concepts in calculus of one variable, the concept of sets and functions to understand the idea of limits, continuity and derivatives. Differentiations and theorems related to integration as a process of anti-derivatives together with the integration techniques are emphasized.*

CHY3003 Asas Keselamatan Makmal/ *Basic Laboratory Safety* 2(2+0)

Prasyarat : Tiada/ *None*

Kursus ini merangkumi aspek pengurusan keselamatan dan amalan kerja yang baik semasa di dalam makmal serta peraturan yang berkaitan. Pengendalian bahan kimia dan sisa bahan kimia serta bahaya (hazard) makmal juga dibincangkan

*This course covers aspects of safety management and good work practices while in the laboratory and related regulations. Handling of chemicals and chemical waste as well as laboratory hazards are also discussed.*

CHY3101 Kimia Fizik I/ *Physical Chemistry I* 4(3+1)

Prasyarat : Tiada/ *None*

Kursus ini merangkumi konsep-konsep penting bidang kimia fizik seperti teori dan aplikasi termodinamik, kinetik, elektrokimia, dan teori kuantum. Keseimbangan kimia dan pengiraan asas mekanisme tindak balas juga dibincangkan.

*This course covers the important concepts in physical chemistry such as the theory and application of thermodynamics, kinetics, electrochemistry, and quantum theory. Chemical equilibrium and basic calculation of reaction mechanism are also discussed.*

CHY3102 Kimia Fizik II/ *Physical Chemistry II* 4(3+1)

Prasyarat : CHY3101

Kursus ini merangkumi aspek kimia fizik berkaitan dengan teori kinetik, mekanisme tindak balas dan tindak balas kompleks. Hukum termodinamik, larutan, keseimbangan fasa, elektrolit dan elektrokimia, koloid dan kuantum kimia turut dibincangkan.

*This course covers aspects of physical chemistry related to kinetic theory, reaction mechanism and complex reactions. Thermodynamic laws, solutions, phase equilibria, electrolytes, electrochemistry, colloids and quantum chemistry are also discussed.*

CHY3103 Kimia Polimer/ *Polymer Chemistry* 4(3+1)

Prasyarat : CHY3101

Kursus ini merangkumi aspek kimia polimer berkaitan dengan jenis, ciri dan sifat polimer serta mekanisme tindak balas dan kinetik pempolimeran. Eksperimen melibatkan sintesis dan pencirian polimer dilaksanakan.

*This course covers aspects of polymer chemistry related to types, characteristics and properties of polymers as well as mechanism of reactions and kinetics of polymerization. Experiments involving*

*synthesis and characterization of polymers are performed.*

CHY3201      Kimia Organik I/ *Organic Chemistry I*      4(3+1)

Prasyarat : CHY2001 atau/or setara/ *equivalent*

Kursus ini merangkumi topik asas dalam kimia organik seperti struktur, ikatan, tatanama, keisomeran geometri dan optik, sifat, tindak balas, dan sintesis pelbagai kelas sebatian organik. Eksperimen ke atas kumpulan berfungsi utama sebatian organik dijalankan.

*This course covers basic topics in organic chemistry such as structure, bonding, nomenclature, geometrical and optical isomerism, properties, reactions, and synthesis of various classes of organic compounds. Experiments on the main functional groups of organic compounds are carried out.*

CHY3202      Kimia Organik II/ *Organic Chemistry II*      4(3+1)

Prasyarat : CHY3201

Kursus ini merangkumi kimia sebatian aromatik dan heterosiklik, tindakbalas enolat, kawalan stereokimia dalam tindak balas penukargantian dan penyediaan alkena, prinsip asas kimia hijau dan kimia biomolekul. Penyediaan sebatian kimia menggunakan kaedah sintesis organik terpilih dijalankan.

*This course covers the chemistry of aromatic and heterocyclic compounds, reactions of enolates, stereochemical control during substitution reactions and preparation of alkenes, basic principle of green chemistry and chemistry of biomolecules. Preparation of chemical compounds using selected synthetic organic methods are carried out.*

CHY3203      Sintesis Organik / *Organic Synthesis*      4(3+1)

Prasyarat : CHY3202 dan/ *and* CHY3402

Kursus ini merangkumi topik yang berkaitan dengan strategi sintetik dalam kimia organik, sintesis tak simetri serta tindak balas pengoksidaan, penurunan, perisiklik, radikal, fotokimia dan organologam termasuk pengenalan ringkas kepada kimia perubatan. Sintesis pelbagai langkah sebatian kimia turut dijalankan.

*This course covers topics related to synthetic strategies in organic chemistry, asymmetric synthesis oxidation as well as reduction, pericyclic, radical, photochemical, and organometallic reactions including brief introduction on medicinal chemistry. Multi-step syntheses of organic compounds are conducted.*

CHY3204      Kimia Hasil Semula Jadi/ *Natural Products Chemistry*      4(3+1)

Prasyarat : CHY3202 dan/ *and* CHY3402

Kursus ini memberikan gambaran menyeluruh metabolit primer dan kelas utama metabolit sekunder, biosintesis, pemencilan menggunakan teknik kromatografi dan analisis struktur hasil semula jadi dengan kaedah spektroskopi maju. Aplikasi hasil semula jadi disertakan bagi memberi penghargaan mengenai kepentingannya kepada manusia.

*This course presents an overview of the primary metabolites and the major classes of secondary metabolites, biosynthesis, isolation using chromatographic techniques and structural analysis by advanced spectroscopic methods. The applications of natural products are included to give appreciation of their importance to humankind.*



- CHY3205      Kimia Protein/ *Protein Chemistry*      3(3+0)  
 Prasyarat : CHY3202 dan/ *and* CHY3402  
 Kursus ini merangkumi aspek kimia bagi protein, peptida dan nukleotida. Ia meliputi pengenalan kepada asid amino dan nukleotida, struktur, sintesis dan pencirian biofizikal protein dan peptida, protein termodinamik, tindak balas berenzim, ubatan berasaskan protein serta topik khas dalam kejuruteraan protein.  
*This course covers the chemistry aspects of protein, peptide and nucleotides. It includes an introduction to amino acids and nucleotides, structures, synthesis and biophysical characterization of protein and peptide, protein thermodynamics, enzymatic reactions, protein-based drug, and special topics in protein engineering.*
- CHY3301      Keberkalaan dan Ikatan Kimia/ *Periodicity and Chemical Bonding*      4(3+1)  
 Prasyarat : CHY2001 atau/or setara/ *equivalent*  
 Kursus ini membincangkan beberapa aspek asas kimia tak organik yang merangkumi jadual berkala dan sifatnya. Unsur kumpulan utama, unsur peralihan, struktur molekul, ikatan, dan interaksi antara molekul juga dibincangkan.  
*This course discusses several basic aspects of inorganic chemistry which covers periodic table and its properties. The main group elements, transition elements, molecular structure, bonding, and intermolecular interactions are also discussed.*
- CHY3304      Struktur Pepejal & Kimia Koordinatan/ *Solid Structure and Coordination Chemistry*      4(3+1)  
 Prasyarat : CHY3301  
 Kursus ini merangkumi, simetri molekul, teori kumpulan, struktur hablur dan kecacatan hablur dalam pepejal tak organik. Ia juga berkaitan dengan kimia koordinatan logam peralihan yang merangkumi struktur, teori ikatan, spektrum elektron, kemagnetan, jenis tindak balas serta kimia organologam.  
*This course covers molecular symmetry, group theory, crystal structure and crystal defects of inorganic solids. It also covers transition metals coordination chemistry which includes structure, bonding theories, electronic spectrum, magnetism, type of reactions as well as organometallic chemistry.*
- CHY3401      Kimia Analisis/ *Analytical Chemistry*      3(2+1)  
 Prasyarat : CHY3101 atau/ *or* CHY3002  
 Kursus ini merangkumi kaedah asas dan amali dalam kimia analisis. Titrimetri, gravimetri, pengekstrakan pelarut, kromatografi, elektrokimia dan analisis terma turut dibincangkan.  
*This course covers the basic methods and practical in analytical chemistry. Titrimetry, gravimetry, solvent extraction, chromatography, electrochemistry and thermal analysis are also discussed.*
- CHY3402      Spektroskopi Kimia/ *Chemical Spectroscopy*      4(3+1)  
 Prasyarat : CHY3101 dan/ *and* CHY3201  
 Kursus ini merangkumi pengenalan kepada kaedah spektroskopi dalam bidang analisis kimia. Data spektroskopi ditafsirkan secara kuantitatif dan kualitatif. Pendedahan potensi perniagaan dijalankan secara kajian kes.  
*This course covers the introduction to spectroscopic methods in chemical analysis. Spectroscopic data is interpreted quantitatively and qualitatively. Exposure to business potential is conducted through case studies.*

- CHY3502 Kimia Organik Perindustrian/ *Industrial Organic Chemistry* 3(3+0)  
 Prasyarat : CHY3201  
 Kursus ini merangkumi aspek perindustrian berasaskan bahan kimia organik. Proses penghasilan, penggunaan dan kepentingan bahan kimia organik dibincangkan.  
*This course covers aspects of industrial organic chemistry. The manufacturing processes, applications and importance of organic chemical products are discussed.*
- CHY3503 Kimia Tak Organik Perindustrian/ *Industrial Inorganic Chemistry* 3(3+0)  
 Prasyarat : CHY3304  
 Kursus ini merangkumi aspek perindustrian yang berkaitan dengan kimia tak organik. Proses penghasilan dan kegunaan produk serta bahan termaju dalam industri kimia tak organik dibincangkan.  
*This course covers industrial aspects related to inorganic chemistry. The manufacturing processes and product applications, as well as advanced materials in the inorganic-based industries are discussed..*
- CHY3504 Prinsip Teknologi Kimia/ *Chemical Technology Principles* 4(4+0)  
 Prasyarat : CHY3102  
 Kursus ini merangkumi proses dan operasi unit dalam industri kimia. Faktor yang terlibat dalam kejuruteraan kimia serta kawalan proses ditekankan melalui pendekatan kimia. Masalah dan kawalan berkaitan proses dan teknologi kimia juga dibincangkan.  
*This course covers processes and unit operations in chemical industry. Factors that are involved in chemical engineering and process controls are highlighted through chemistry approach. Problems and controls that are related to processes and chemical technology are discussed.*
- CHY3505 Plastik dan Komposit/ *Plastics and Composites* 3(3+0)  
 Prasyarat : CHY3103  
 Kursus ini merangkumi teknologi pemprosesan dan pengeluaran produk berasaskan plastik dan komposit dalam industri dan juga kegunaannya dalam teknologi termaju termasuk bioperubatan dan elektronik. Pembangunan bahan boleh diperbaharui iaitu bioplastik dan biokomposit juga dibincangkan.  
*This course covers the technology of processing and production of plastic and composite-based products in the industry as well as the applications in advanced technologies including biomedical and electronics. The development of renewable materials which are bioplastics and biocomposites is discussed.*
- CHY3506 Oleokimia/ *Oleochemistry* 3(2+1)  
 Prasyarat : CHY3202  
 Kursus ini merangkumi pelbagai aspek minyak dan lemak termasuk terbitan oleokimia. Penggunaan teknologi terkini termasuk mikroemulsi dan bioteknologi juga dibincangkan. Pendedahan potensi perniagaan dijalankan secara kajian kes.  
*This course covers various aspects of oils and fats, including oleochemical derivatives. The use of the latest technology including microemulsion and biotechnology is also discussed. Exposure to business potential is conducted through case studies.*

CHY3507 Kimia dan Teknologi Getah/ *Rubber Chemistry and Technology* 2(2+0)

Prasyarat : CHY3103

Kursus ini merangkumi teknologi dan kimia getah asli dan sintetik. Bidang tumpuan adalah asas kimia getah asli dan sintetik, pemprosesan dan sistem pemvulkanan serta analisis getah dan produk getah. Teknologi dan kegunaan getah dalam industri dan komuniti serta masalah dalam industri getah dan penyelesaiannya dibincangkan.

*This course covers the technology and chemistry of natural and synthetic rubbers. Areas of focus are the foundation of the chemistry of natural and synthetic rubbers, the processing and vulcanization systems as well as the analysis of rubber and rubber products. The technology and application of rubbers in industries and communities, as well as problems in the rubber industry and their solutions are discussed.*

CHY3508 Kimia Hijau/ *Green Chemistry* 3(2+1)

Prasyarat : CHY3402

Kursus ini merangkumi pelbagai teknik dan teknologi kimia hijau yang digunakan dalam penyelidikan dan pembangunan sektor industri. Eksperimen menggunakan kaedah kimia hijau turut dijalankan

*This course covers various techniques and technologies in green chemistry that are used in research and development in the industrial sector. Experiments using green chemistry techniques are also conducted.*

CHY3602 Proses Penapisan Petroleum/ *Petroleum Refining Processes* 3(3+0)

Prasyarat : CHY3202

Kursus ini merangkumi pengenalan kepada proses penyulingan petroleum dan bahan hasil penapisan. Kaedah penyulingan minyak mentah, proses pengkokan tertunda dan proses penapisan turut dibincangkan.

*This course covers an introduction to the petroleum refining process and refinery products. Crude distillation method, delayed coking and refinery process are also discussed*

CHY4101 Kinetik Kimia/ *Chemical Kinetics* 3(2+1)

Prasyarat : CHY3102

Kursus ini merangkumi tajuk berkaitan dengan kinetik kimia dalam fasa gas dan cecair, tindak balas bermangkin asid bes dan enzim, jerapan, tindak balas permukaan dan cepat. Terdapat juga penekanan pada aplikasi kimia kinetik dan pemangkinan melalui eksperimen.

*This course covers topics related to chemical kinetics in the gases and liquid phases, acid-base catalysis and enzymatic reactions, adsorption, surface and fast reactions. There is also emphasis on applications of chemical kinetics and catalysis through experiments.*

CHY4102 Termodinamik Kimia/ *Chemical Thermodynamics* 3(2+1)

Prasyarat : CHY3102

Kursus ini meliputi perbincangan tentang tenaga, kespontanan tindak balas, tenaga bebas dan keupayaan kimia serta hubungannya dengan kestabilan fizikal bahan dan larutan. Fasa campuran kompleks dan termodinamik berkaitan penjanaaan dan storan tenaga diperbaharui juga dibincangkan.

*This course includes the discussion on energy, reaction spontaneity, free energy and chemical potentials in relation to phase stability of compounds and solutions. Complex phase mixtures and thermodynamics in relation to renewable energy and storage are also included in the discussion.*

CHY4103 Kimia Pengkomputeran/ *Computational Chemistry* 4(3+1)

Prasyarat : CHY3102

Kursus ini meliputi aspek ringkas teori dan praktikal pemodelan molekul. Teori asas kepada kimia pengkomputeran, mekanik klasik dan mekanik molekul, mekanik kuantum, dinamik molekul, kaedah ab initio, kaedah semi-empirik, reka bentuk ubatan dengan bantuan komputer, hubungan struktur-aktiviti kuantitatif dan tajuk khas dalam kimia pengkomputeran turut dibincangkan.

*This course covers a brief theoretical and practical aspect of molecular modeling. Basic theories for computational chemistry, classical and molecular mechanics, quantum mechanics, molecular dynamics, ab initio methods, semi-empirical methods, computer-aided drug design, quantitative structure-activity relationship and special topics in computational chemistry are discussed.*

CHY4301 Kimia Keadaan Pepejal/ *Solid State Chemistry* 3(3+0)

Prasyarat : CHY3302 atau/ or CHY3304

Kursus ini meliputi kaedah sintesis, komposisi dan struktur bagi pepejal yang memberi pemahaman lanjutan terhadap korelasi pada sifat elektrik, magnet dan optik.

*Kursus ini meliputi kaedah sintesis, komposisi dan struktur bagi pepejal yang memberi pemahaman lanjutan terhadap korelasi pada sifat elektrik, magnet dan optik.*

CHY4401 Elektrokimia/ *Electrochemistry* 3(3+0)

Prasyarat : CHY3101 dan/ and CHY3401

Kursus ini merangkumi prinsip elektrokimia seperti aktiviti ion, kekonduksian, lapisan berganda elektrik, proses elektrod, voltametri, potensiometri dan pengelektroenanapan. Kaedah penyelesaian masalah elektrokimia turut dibincang.

*This course covers the principles of electrochemistry such as ion activity, ionic mobility, electrical double layer, electrode processes, voltammetry, potentiometry and electrodeposition). The solutions of electrochemical problems also will be discussed.*

CHY4402 Teknik Pemisahan/ *Separation Techniques* 3(3+0)

Prasyarat : CHY3401

Kursus ini merangkumi pengenalan kepada prinsip asas kaedah pemisahan, kaedah pemisahan klasik dan terkini. Penganalisaan data daripada kaedah pemisahan dalam pelbagai aplikasi dijalankan.

*This course covers the introduction to the basic principle of separation methods, the classical and advance separation methods. Analysis of data from separation methods in various applications is performed.*

CHY4403 Kimia Forensik/ *Forensic Chemistry* 3(3+0)

Prasyarat : CHY3402

Kursus ini merangkumi kimia analisis sains forensik seperti jaminan kualiti/kawalan kualiti, dadah, toksikologi, analisis jejak dan pembakaran, dan serologi. Beberapa kaedah analisis forensik dirangkumi termasuk teknik kromatografi dan spektroskopi.

*This course covers the analytical chemistry of forensic science such as quality assurance/quality control, drug, toxicology, trace and arson analysis, and serology. Several methods of forensic analysis are covered including chromatography and spectroscopy techniques.*

CHY4501	Keusahawanan Kimia/ <i>Chempreneurship</i>	3(3+0)
Prasyarat : CHY3501 atau/ or CHY3504		
<p>Kursus ini merangkumi aspek perniagaan dalam kimia bermula dengan penemuan dalam makmal, langkah pengeluaran penemuan dalam industri kepada tata tertib bidang kimia. Kajian kes meliputi pembentangan cadangan perniagaan dalam bidang kimia dan produk pengguna.</p> <p><i>This course covers aspects of business in chemistry, commencing from creation in the lab, steps for introducing invention in the industry to regulations in the field of chemistry. The case study comprises pitching business proposals in the field of chemistry and consumer products.</i></p>		
CHY4601	Pemangkinan heterogen/ <i>Heterogeneous Catalysis</i>	3(2+1)
Prasyarat : CHY3102		
<p>Kursus ini merangkumi pengenalan kepada pemangkinan heterogen dan pengkelasannya, teknik penyediaan dan pencirian mangkin serta tindak balas bermangkin. Aplikasi mangkin dalam industri dan pengawalan pencemaran alam sekitar juga turut dibincangkan.</p> <p><i>This course covers introduction to the heterogeneous catalyst and its classification, catalyst preparation and characterization techniques and catalytic reaction. The application of catalysts in industries and environmental pollution control also also discussed.</i></p>		
CHY4903	Latihan Industri/ <i>Industrial Training</i>	8(0+8)
Prasyarat : Dengan Kebenaran Jabatan/ <i>With Departmental Approval</i>		
<p>Kursus ini merangkumi pendedahan kepada persekitaran kerja yang sebenar di industri/organisasi. Aplikasi teori, praktikal, kemahiran komunikasi dan penyelesaian masalah turut ditekankan.</p> <p><i>This course covers the exposure to real working environment in industries/organizations. Application of the theoretical, practical, communication and problem-solving skills are also emphasized.</i></p>		
CHY4959	Disertasi Bachelo/ <i>Bachelor Dissertation</i>	6(0+6)
Prasyarat : Dengan Kebenaran Jabatan/ <i>With Departmental Approval</i>		
<p>Kursus ini merangkumi sorotan bahan rujukan, penggunaan teknik penyelidikan yang sesuai, pengumpulan dan analisis data, penafsiran keputusan, perbincangan dan kesimpulan kajian saintifik dalam projek penyelidikan.</p> <p><i>This course covers literature reviews, use of appropriate research techniques, data collections and analyses, interpretation of results, discussions and conclusions of scientific studies in research projects.</i></p>		
FSA4001	Sistem Pengurusan Kualiti dalam Sains/ <i>Quality Management System in Science</i>	3(3+0)
Prasyarat : Tiada		
<p>Kursus ini merangkumi sistem pengurusan kualiti dalam organisasi dan industri. Standard ISO 9001, ISO 14001, ISO/IEC 17025 dan ISO 45001 akan dibincang dan diaplikasikan.</p> <p><i>This course covers the quality management systems in organisation and industry. The standard ISO 9001, ISO 14001, ISO/IEC 17025 and ISO 45001 are discussed and applied.</i></p>		
FSA4002	Pengurusan Inovasi dan Teknologi Untuk Saintis/ <i>Inovation and Technology Management for Scientist</i>	3(3+0)
Prasyarat : Tiada		

Kursus ini bermatlamat untuk menyediakan pelajar dengan pemahaman terhadap proses inovasi teknologi. Pelajar didedahkan kepada kepentingan inovasi berasaskan teknologi, polisi dan peluang bagi pertumbuhan ekonomi.

*This course aims to equip students with understanding of the technological innovation processes. Students are exposed to the importance of technological innovation, policies and potential for economic growth.*

## **KURSUS TAWARAN FAKULTI LAIN**

***(Sila rujuk sinopsis pada fakulti berkenaan)***

### **1. FAKULTI PERTANIAN**

1.1	PRT2008	Pertanian dan Manusia/ <i>Agriculture and Man</i>	2(2+0)
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### **2. FAKULTI EKOLOGI MANUSIA**

2.1	SKP2101	Kenegaraan Malaysia / <i>Malaysian Nationhood</i>	3(3+0)
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2.2	SKP3112	Falsafah dan Isu Semasa/ <i>Philosophy and Current Issues</i>	2(2+0)
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2.3	SKP3122	Penghayatan Etika dan Peradaban/ <i>Internalization of Ethics and Civilization</i>	2(2+0)
3. FAKULTI EKONOMI PENGURUSAN			
3.1	MGM3180	Asas Keusahawanan / <i>Basic Entrepreneurship</i>	3(3+0)
3.2	MGM3101	Prinsip Pengurusan/ <i>Principles of Management</i>	3(3+0)
3.3	ACT2111	Pengantar Perancangan dan Penggunaan Maklumat Kewangan/ <i>Introduction to Planning and Use of Financial Information</i>	3(3+0)
3.4	ACT2112	Perakaunan Pengenalan/ <i>Introductory Accounting</i>	4(3+1)
3.5	ACT3211	Pengurusan Kewangan/ <i>Financial Management</i>	3(3+0)
3.6	MGM3111	Komunikasi Pentadbiran dan Perniagaan/ <i>Business And Administrative Communications</i>	3(3+0)
3.7	MGM3113	Gelagat Organisasi/ <i>Organizational Behaviour</i>	3(3+0)
3.8	MGM3123	Pengurusan Sumber Manusia/ <i>Human Resource Management</i>	3(3+0)
3.9	MGM3211	Prinsip Pemasaran/ <i>Principles of Marketing</i>	3(3+0)
3.10	ACT2131	Perakaunan Kos dan Pengurusan/ <i>Cost And Management Accounting</i>	3(3+0)
3.11	ECN3010	Prinsip Ekonomi/ <i>Principles of Economics</i>	3(3+0)
3.12	ECN3103	Mikroekonomi/ <i>Microeconomics</i>	3(3+0)
3.13	ECN3104	Makroekonomi/ <i>Macroeconomics</i>	3(3+0)
3.14	MGM3163	Teknik Kuantitatif untuk Perniagaan/ <i>Quantitative Techniques for Business</i>	4(3+1)
3.15	MGM3351	Undang-Undang Komersil/ <i>Commercial Law</i>	3(3+0)
3.16	MGM4136	Isu Semasa Pengurusan/ <i>Current Issues In Management</i>	3(3+0)
3.17	MGM4137	Dasar Sosial Korporat/ <i>Corporate Social Policy</i>	3(3+0)
3.18	MGM4139	Pengurusan Strategi/ <i>Strategic Management</i>	3(3+0)
3.19	MGM4148	Pengurusan Operasi dan Pengeluaran/ <i>Production and Operations Management</i>	3(3+0)
3.20	MGM4154	Pengurusan Perniagaan Antarabangsa/ <i>International Business Management</i>	3(3+0)
4. PUSAT PEMAJUAN KOMPETENSI BAHASA			
4.1	LPE2403	Academic Interaction and Presentation	3 (2+1)
4.2	LPE2503	Academic Writing	3 (2+1)

5.	FAKULTI BAHASA MODEN DAN KOMUNIKASI		
5.1	KOM3403	Pengucapan Awam / <i>Public Oration</i>	3 (3+0)
6.	FAKULTI PENGAJIAN PENDIDIKAN		
6.1	FCE3204	Kemahiran Berfikir / <i>Thinking Skills</i>	2 (2+0)
7.	FAKULTI KEJURUTERAAN		
7.1	ECH4410	Pemprosesan Bahan Nano / <i>Nanomaterials Processing</i>	3(3+0)
7.2	EPF4611	Teknologi Nutrasetikal / <i>Nutraceutical Technology</i>	3(3+0)
8.	FAKULTI PERUBATAN DAN SAINS KESIHATAN		
8.1	EOH3206	Keselamatan Industri Dan Tindakan Kecemasan / <i>Industrial Safety and Emergency Response</i>	4(4+0)
9.	FAKULTI SAINS & TEKNOLOGI MAKANAN		
9.1	FST3302	Asas Pemprosesan dan Pengawetan / <i>Fundamentals of Food Processing and Preservation</i>	3(3+0)
10.	FAKULTI PERHUTANAN DAN ALAM SEKITAR		
10.1	ESC3012	Teknologi Rawatan Sisa Pepejal / <i>Solid Waste Treatment Technology</i>	3(3+0)
10.2	ESC3204	Rawatan Air Sisa / <i>Wastewater Treatment</i>	3(2+1)
10.3	ESC4404	Teknologi Rawatan Sisa Berbahaya / <i>Hazardous Waste Treatment Technology</i>	3(3+0)
11.	FAKULTI BIOTEKNOLOGI DAN SAINS BIOMOLEKUL		
11.1	BTC3001	Pengenalan Kepada Bioteknologi / <i>Introduction to Biotechnology</i>	2(2+0)





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UNIVERSITI PUTRA MALAYSIA  
BERILMU BERAKTI

**BAHAGIAN KEMASUKAN DAN  
BAHAGIAN URUS TADBIR AKADEMIK**  
DIVISION OF ADMISSION AND DIVISION OF ACADEMIC GOVERNANCE

بہاگین کما سوقن دان بہاگین اوروس تادبیر اکاڈمیک

43400 UPM SERDANG  
SELANGOR DARUL EHSAN  
MALAYSIA

Tel: +603 9769 6050 / 6060 / 7822

Faks/Fax : +603 8942 6469

[akademik.upm.edu.my](http://akademik.upm.edu.my)

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