

## **FAKULTI PERHUTANAN**

### **Maklumat Am**

Fakulti Perhutanan merupakan salah satu daripada fakulti asas semasa penubuhan Universiti Putra Malaysia (UPM) dalam tahun 1971. Misi fakulti adalah menjadi Pusat Pembelajaran dan Pendidikan yang unggul dalam bidang perhutanan tropika, yang menyumbangkan bukan sahaja kepada kemajuan manusia dan penerokaan ilmu tetapi juga kepada pembentukan kekayaan dan pembangunan negara.

Untuk mencapai tahap kecemerlangan dalam pengajaran dan penyelidikan, Fakulti telah menjalin kerjasama rapat dengan Fakulti lain di UPM dan juga dengan agensi dan institut perhutanan dalam negara dan juga di peringkat antarabangsa. Kerjasama ini dapat mempertingkatkan keupayaan Fakulti menyelia pelajar pada peringkat pengajian siswazah.

Sejak penubuhannya, Fakulti telah berkembang dengan pesat dalam aspek pendidikan dan penyelidikan serta pembangunan sumber. Bersandarkan kepada moto ingin terus maju, Fakulti bertekad untuk menjadi sebuah pusat kecemerlangan yang unggul dalam pendidikan dan penyelidikan Perhutanan Tropika. Dalam membangunkan sumber manusia serta kemudahan prasarana profesional yang cemerlang, Fakulti Perhutanan sentiasa berusaha meningkat dan memantapkan keupayaan pengajaran, penyelidikan dan perkhidmatan ke tahap yang terbaik.

### ***General Information***

The Faculty of Forestry is one of the founding faculties of Universiti Pertanian Malaysia (now Universiti Putra Malaysia (UPM)) in 1971. The mission of the faculty is to become a leading Center of Learning and Education in the field of tropical forestry, contributing not only to human advancement and knowledge discovery but also to the creation of wealth and nation building.

To achieve excellence in teaching and research, the Faculty works closely with other faculties in UPM as well as other forestry related agencies and institutions, local as well as international. These partnerships serve to enhance the ability of the Faculty to supervise students at the Graduate level.

Since its inception, the Faculty has grown rapidly in terms of education and research as well as resource development. Drawing on its motto of striving to continually progress further, the Faculty aims to be a premier Center of excellence in Tropical Forestry education and research. The Faculty of Forestry constantly strives to improve and enhance its abilities in teaching, research and services to the highest levels in pursuit of its goals of developing excellent human resources as well as state-of-the-art professional facilities.

## **Pengurusan Fakulti**

### **Dekan/Dean**

Prof. Dr. Mohamed Zakaria Hussin

### **Timbalan Dekan (Akademik & Antarabangsa)**

#### ***Deputy Dean (Academic and Internationalization)***

Prof. Madya Dr. Kamziah Abd. Kudus

### **Timbalan Dekan (Penyelidikan & Inovasi)**

#### ***Deputy Dean (Research and Innovation)***

Prof. Dr. Rozi Mohamed

### **Timbalan Dekan (Hal Ehwal Pelajar & Jaringan)**

#### ***Deputy Dean (Student Affairs and Linkages)***

Prof. Madya Dr. Mohd Zaki Hamzah

### **Ketua, Jabatan Pengurusan Hutan**

#### ***Head, Department of Forest Management***

Prof. Madya Dr. Mohd. Nazre Saleh

### **Ketua, Jabatan Pengeluaran Hutan**

#### ***Head, Department of Forest Production***

Prof. Madya Gs. Dr. Mohd Hasmadi Ismail

### **Ketua, Jabatan Rekreasi dan Ecopelancongan**

#### ***Head, Department of Recreation and Ecotourism***

Prof Madya Dr. Manohar Mariapan

## **Program Prasiswazah yang ditawarkan**

### **Bachelor/Bachelor**

1. Bacelor Sains Perhutanan/ *Bachelor of Forestry Science*
2. Bacelor Sains dan Teknologi Kayu/ *Bachelor of Wood Science and Technology*
3. Bacelor Sains Taman dan Rekreasi/ *Bachelor of Parks & Recreation Science*

**ELEx PACKAGE STUDY SCHEME FOR FOUR-YEAR PROGRAMMES (NEW)**  
 (Effective for September 2017 intake and above)

MUET Band	TOEFL/IELTS Score	CIEP Level	Graduation Requirements
1 & 2	-	107	3 BBI + 3 CEL + 24 LAX points
3 & 4	TOEFL 500 - 599 IELTS 5.5 - 6.5	108 – 109	2 BBI + 2 CEL + 24 LAX points
5 & 6	TOEFL 600 - 677 IELTS 7.0 – 9.0	-	2 LPE + 1 CEL + 24 LAX points <u>atau</u> 1 LPE + 1 CEL + 24 LAX points (+ 1 global language)

Sem	SCHEME FOR 4-YEAR PROGRAMMES		
	MUET 1 & 2 CIEP 107	MUET 3 & 4 CIEP 108-109 TOEFL 500 - 599 IELTS 5.5 - 6.5	MUET/ UTEIS 5 & 6 TOEFL 600 - 677 IELTS 7.0 – 9.0
1	BBI 2422	LAX 6 points	LAX 6 points
2	LAX 6 points CEL 2102	BBI 2423	CEL2103
3	BBI 2423	BBI 2424	BBI2424/LPE2502/LPE2402/ Global language
4	BBI 2424	LAX 6 points	LAX 6 points
5	LAX 12 points	CEL2103	BBI2424/LPE2502/LPE2402/ Global language
6	CEL 2103	Choose ONE: CEL 2102/2105/2106/2107	LAX 6 points
7	Choose ONE: CEL 2105/2106/2107	LAX 6 points	LAX 6 points
8	LAX 6 points	LAX 6 points	-

**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]

- BBI 2422 (Reading for Academic Purposes)
- BBI 2423 (Academic Interaction and Presentation)
- BBI 2424 (Academic Writing)
- LPE2402 – for MUET Band 5 & 6 students only
- LPE2502 – 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

- CEL 2102 (Effective Listening and Speaking)
- CEL 2103 (Writing Academic Texts)
- CEL 2105 (Spoken Communication for the Workplace)
- CEL 2106 (Communication for Professional Development)
- CEL 2107 (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

- BBI 2422: MUET Band 1 – 2/equivalent
- BBI 2423: CEL 2102 Level 2 or MUET Band 3 – 4/equivalent
- BBI 2424: Passed BBI 2423
- CEL 2103: Passed BBI 2424 or MUET Band 5 – 6/equivalent
- CEL 2102, 2105, 2106, 2107: No pre-requisite required

## STRUKTUR KURIKULUM/ CURRICULUM STRUCTURE

**Nama Program** : **Bachelor Sains Perhutanan/ Bachelor of Forestry Science**

**Jumlah Kredit Bergraduat** : **129 Jam Kredit/ Credit Hours**

**Tempoh Pengajian** : **8 Semester/ Semesters ( 4 Tahun/ Years )**

**Matlamat Program** :

1. Melahirkan graduan yang berpengetahuan tentang sains perhutanan dan bidang berkaitan perhutanan bagi menjamin kehidupan manusia yang lebih baik seimbang dengan pembangunan fizikal
2. Melahirkan graduan yang berkebolehan, profesional dan berkeupayaan dalam penyelidikan, merancang, mengurus, melaksana dan mengaplikasikan teknologi terkini berkaitan sektor perhutanan
3. Melahirkan graduan yang beretika dan bertanggungjawab ke atas masyarakat, budaya, sumber hutan dan alam semula jadi

## 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 Perhutanan	41	31	30	10	10	19	14	8	9

1. Kursus Universiti/ *University Courses* ( 25 Kredit/ *credits*)

KOD KURSUS/ COURSE CODE	NAMA KURSUS/COURSE NAME	Kr	K	A/T	PRASYARAT/ PREREQUISITE
BBI2423	<i>Academic Interaction and Presentation</i>	3	2	1	CEL2102
BBI2424	<i>Academic Writing</i>	3	2	1	BBI2423
FCE3204	Kemahiran Berfikir/ <i>Thinking Skills</i>	2	2	0	Tiada/ <i>None</i>
MGM3180	Asas Keusahawanan/ <i>Basic Entrepreneurship</i>	3	2	1	Tiada/ <i>None</i>
KOM3403	Pengucapan Awam/ <i>Public Oration</i>	3	3	0	Tiada/ <i>None</i>

PRT2008	Pertanian dan Manusia/ <i>Agriculture and Man</i>	2	2	0	Tiada/ <i>None</i>
SKP2101	Kenegaraan Malaysia/ <i>Malaysian Nationhood</i>	3	3	0	Tiada/ <i>None</i>
SKP2203	Tamadun Islam dan Tamadun Asia/ <i>Asian and Islamic Civilization</i>	2	2	0	Tiada/ <i>None</i>
SKP2204	Hubungan Etnik / <i>Ethnic Relation</i>	2	2	0	Tiada/ <i>None</i>
QKK2101	Bakti Siswa	1	0	1	
QKX	Kokurikulum 2/Co-curriculum 2	1	0	1	

2. Kursus Teras/ *Core Courses* ( 68 kredit/ *credits*)

KOD KURSUS/ COURSE CODE	NAMA KURSUS/COURSE NAME	Kr	K	A/T	PRASYARAT/ PREREQUISITE
FHH3101	Sains Kayu/ <i>Wood Science</i>	3	2	1	Tiada/ <i>None</i>
FHM3112	Kaedah Kuantitatif Dalam Perhutanan/ <i>Quantitative Methods in Forestry</i>	4	3	1	Tiada/ <i>None</i>
FHM3201	Survei Hutan/ <i>Forest Survey</i>	3	2	1	Tiada/ <i>None</i>
FHM3206	Sistem Maklumat Geografi Dalam Perhutanan/ <i>Geographic Information System in Forestry</i>	3	2	1	Tiada/ <i>None</i>
FHM3303	Pengurusan Hidupan Liar/ <i>Wildlife Management</i>	3	2	1	Tiada/ <i>None</i>
FHM3108	Entomologi Hutan/ <i>Forest Entomology</i>	2	1	1	Tiada/ <i>None</i>
FHM3109	Patologi Hutan/ <i>Forest Pathology</i>	2	1	1	Tiada/ <i>None</i>
FHM3203	Sivikultur Hutan/ <i>Forest Silviculture</i>	4	3	1	Tiada/ <i>None</i>
FHM3107	Tanah Hutan/ <i>Forest Soil</i>	3	2	1	Tiada/ <i>None</i>
FHM3103	Dendrologi Dipterokarpa/ <i>Dendrology of Dipterocarps</i>	2	1	1	Tiada/ <i>None</i>
FHM3104	Dendrologi Bukan Dipterokarpa/ <i>Dendrology of Non-Dipterocarps</i>	2	1	1	Tiada/ <i>None</i>
FHM3105	Fisiologi Pokok/ <i>Tree Physiology</i>	3	2	1	Tiada/ <i>None</i>
FHM3106	Ekologi Hutan/ <i>Forest Ecology</i>	3	2	1	Tiada/ <i>None</i>
FHS4959	Disertasi Bachelo/ <i>Bachelor Dissertation</i>	6	0	6	Tiada/ <i>None</i>
FHS4903	Latihan Industri/ <i>Industrial Training</i>	8	0	8	Tiada/ <i>None</i>
FHS4904	Kem Perhutanan/ <i>Forestry Camp</i>	2	0	2	Tiada/ <i>None</i>
FHM3202	Sukatatan Hutan/ <i>Forest Mensuration</i>	3	2	1	Tiada/ <i>None</i>
FHM3301	Pengurusan Hutan / <i>Forest Management</i>	3	2	1	Tiada/ <i>None</i>
FHM3306	Undang-Undang Dalam Perhutanan/	3	3	0	Tiada/ <i>None</i>

<i>Laws in Forestry</i>					
FHM3110	Ekonomi Perhutanan/ <i>Forestry Economics</i>	3	3	0	Tiada/ <i>None</i>
FHM3305	Pengurusan Kawasan Legeh/ <i>Watershed Management</i>	3	2	1	Tiada/ <i>None</i>

### 3. Kursus Elektif (36 kredit /credits)

Pelajar perlu mengambil sebanyak 30 kredit (9 kredit dari kursus generik dan 21 kredit dari pakej) daripada senarai kursus yang dipakejkan dan 6 kredit elektif bebas.

KOD KURSUS/ COURSE CODE	NAMA KURSUS/COURSE NAME	Kr	K	A/T	PRASYARAT/ PREREQUISITE
<b>KURSUS ELEKTIF GENERIK / <i>GENERIC ELECTIVE COURSES</i></b> (Pilih/Choose 9 kredit/credits)					
FHM3204	Kejuruteraan Hutan/ <i>Forest Engineering</i>	3	2	1	Tiada/ <i>None</i>
FHH3201	Hasil Hutan Bukan Kayu/ <i>Non-Wood Forest Products</i>	3	2	1	Tiada/ <i>None</i>
FHM4206	Pengukuran Dan Pemantauan Karbon/ <i>Carbon Measurement and Monitoring</i>	3	2	1	Tiada/ <i>None</i>
FHM4101	Biodiversiti dan Pemuliharaan/ <i>Biodiversity and Conservation</i>	3	2	1	Tiada/ <i>None</i>
FHM4202	Penilaian Ekonomi Sumber Hutan Dan Biodiversiti/ <i>Economic Valuation of Forest Resource and Biodiversity</i>	3	2	1	Tiada/ <i>None</i>
<b>PAKEJ ELEKTIF PENGURUSAN HUTAN/ <i>FOREST MANAGEMENT ELECTIVE PACKAGE</i></b> (Pilih/Choose 21 kredit/credits)					
FHM3205	Penuaian Hutan/ <i>Forest Harvesting</i>	3	2	1	FHK3403
FHM4201	Penderiaan Jauh Dalam Perhutanan/ <i>Remote Sensing in Forestry</i>	3	2	1	Tiada/ <i>None</i>
FHM3111	Kebakaran Hutan/ <i>Forest Fire</i>	2	1	1	Tiada/ <i>None</i>
FHM3208	Pembaikbiak Pokok/ <i>Tree Improvement</i>	3	2	1	Tiada/ <i>None</i>
FHM4301	Pengurusan Hutan Lanjutan/ <i>Advance Forest Management</i>	2	1	1	Tiada/ <i>None</i>
FHM4203	Perhutanan Antarabangsa/ <i>International Forestry</i>	2	2	0	Tiada/ <i>None</i>
FHM3211	Pemulihan Ekosistem/ <i>Ecosystem Restoration</i>	3	2	1	Tiada/ <i>None</i>
FHM3213	Perhutanan Tani/ <i>Agroforestry</i>	3	2	1	Tiada/ <i>None</i>
FHM3210	Etnobotani/ <i>Ethnobotany</i>	3	2	1	Tiada/ <i>None</i>

FHM4204	Aplikasi Bioteknologi Dalam Perhutanan/ <i>Biotechnology Application in Forestry</i>	3	2	1	Tiada/ None
FHM4205	Teknik Hidrologi Hutan/ <i>Forest Hydrology Technique</i>	2	1	1	Tiada/ None
FHM3304	Pengurusan Hutan Ladang/ <i>Forest Plantation Management</i>	3	2	1	Tiada/ None
FHM3214	Teknologi Biji Benih/ <i>Seed Technology</i>	2	1	1	Tiada/ None
<b>PAKEJ ELEKTIF EKOLOGI DAN KENSERVASI HIDUPAN LIAR/ ELECTIVE PACKAGE</b> (Pilih/Choose 21 kredit/credits)					
FHM3212	Kaedah Pensampelan Hidupan Liar/ <i>Wildlife Sampling Methods</i>	3	2	1	Tiada/ None
FHM4102	Ekologi Komuniti Hidupan Liar/ <i>Wildlife Community Ecology</i>	3	3	0	Tiada/ None
FHM4103	Ekologi Perilaku Hidupan Liar/ <i>Wildlife Behavioural Ecology</i>	3	2	1	Tiada/ None
FHM4302	Konflik Manusia dan Hidupan Liar/ <i>Human and Wildlife Conflicts</i>	3	3	0	Tiada/ None
FHR3625	Pengurusan Hidupan Liar Dalam Rekreasi/ <i>Wildlife Management in Recreation</i>	3	2	1	Tiada/ None
FHR4608	Pengurusan Kawasan Perlindungan/ <i>Protected Areas Management</i>	3	2	1	Tiada/ None
FHM3210	Etnobotani/ <i>Ethnobotany</i>	3	2	1	Tiada/ None
FHM3211	Pemulihan Ekosistem/ <i>Ecosystem Restoration</i>	3	2	1	Tiada/ None
FHR4501	Pendidikan Alam Semulajadi/ <i>Environmental Education</i>	3	2	1	Tiada/ None
FHR4503	Pengurusan Ekopelancongan/ <i>Ecotourism Management</i>	3	2	1	Tiada/ None
FHM3213	Perhutanan Tani/ <i>Agroforestry</i>	3	2	1	Tiada/ None
FHR3205	Operasi dan Senggaraan Taman/ <i>Parks Maintenance and Operation</i>	2	1	1	Tiada/ None
FHM4201	Penderiaan Jauh dalam Perhutanan/ <i>Remote Sensing in Forestry</i>	3	2	1	Tiada/ None
<b>PAKEJ ELEKTIF PERHUTANAN BANDAR/ FOREST MANAGEMENT ELECTIVE PACKAGE</b> (Pilih/Choose 21 kredit/credits)					
FHM3302	Pengurusan Hutan Bandar/ <i>Urban Forest Management</i>	3	2	1	Tiada/ None
FHM3209	Arborikultur/ <i>Arboriculture</i>	3	2	1	Tiada/ None
FHM3307	Penyelenggaraan Dan Pengurusan	2	1	1	Tiada/ None



	Tapak Semaian/ <i>Nursery Management and Maintainance</i>				
FHM3310	Pengurusan Bersepadu Perosak Hutan Bandar/ <i>Integrated Pest Management of Urban Forests</i>	3	2	1	Tiada/ <i>None</i>
FHM3311	Pengurusan Kesihatan Pokok Hutan Bandar/ <i>Urban Tree Health Management</i>	2	1	1	Tiada/ <i>None</i>
FHM4207	Ekologi Perbandaran/ <i>Urban Ecology</i>	3	2	1	Tiada/ <i>None</i>
FHM4303	Pengurusan Risiko Dalam Hutan Bandar/ <i>Risk Management in Urban Forestry</i>	3	2	1	Tiada/ <i>None</i>
FHR3610	Operasi Dan Senggaraan Taman/ <i>Park Operation and Maintenance</i>	2	1	1	Tiada/ <i>None</i>
FHM3216	Ekonomi Persekitaran Dan Hutan Bandar/ <i>Environmental Economics and Urban Forestry</i>	2	2	0	Tiada/ <i>None</i>
FHM3215	Infrastruktur Hijau Dalam Perhutanan Bandar/ <i>Green Infrastructure in Urban Forestry</i>	2	1	1	Tiada/ <i>None</i>
FHM4302	Konflik Manusia Dan Hidupan Liar/ <i>Human and Wildlife Conflicts</i>	3	3	0	Tiada/ <i>None</i>
FHR3602	Interpretasi Persekitaran/ <i>Environmental Interpretation</i>	3	2	1	Tiada/ <i>None</i>
FHR3625	Pengurusan Hidupan Liar Dalam Rekreasi/ <i>Recreational Wildlife Management</i>	3	2	1	Tiada/ <i>None</i>
<b>PAKEJ ELEKTIF PERHUTANAN LADANG/ <i>ELECTIVE PACKAGE</i></b> (Pilih/Choose 21 kredit/credits)					
FHM3217	Sistem Penuaian Dalam Ladang Hutan/ <i>Harvesting System in Forest Plantations</i>	3	2	1	Tiada/ <i>None</i>
FHM3307	Penyelenggaraan Dan Pengurusan Tapak Semaian/ <i>Nursery Management and Maintainance</i>	2	1	1	Tiada/ <i>None</i>
FHM3304	Pengurusan Hutan Ladang/ <i>Forest Plantation Management</i>	3	2	1	Tiada/ <i>None</i>
FHM3309	Pensijilan Ladang Hutan/ <i>Forest Plantation Certification</i>	2	1	1	Tiada/ <i>None</i>
FHM4201	Penderiaan Jauh Dalam Perhutanan/ <i>Remote Sensing in Forestry</i>	3	2	1	Tiada/ <i>None</i>
FHM3308	Pengurusan Kebakaran Dalam Ladang Hutan/ <i>Fire Management in Forest Plantations</i>	2	1	1	Tiada/ <i>None</i>
FHH3230	Kualiti Dan Hasil Kayu/ <i>Wood</i>	3	2	1	Tiada/ <i>None</i>

<i>Quality and Products</i>					
FHM4304	Pengurusan Konflik Dalam Ladang Hutan/ <i>Conflict Management in Forest Plantations</i>	3	2	1	Tiada/ <i>None</i>
FHM4302	Konflik Manusia Dan Hidupan Liar/ <i>Human and Wildlife Conflicts</i>	3	3	0	Tiada/ <i>None</i>
FHM3218	Penghasilan Bahan Tanaman Hutan Ladang/ <i>Planting Material Production for Forest Plantation</i>	3	2	1	Tiada/ <i>None</i>
FHM3214	Teknologi Biji Benih/ <i>Seed Technology</i>	2	1	1	Tiada/ <i>None</i>
FHM4203	Perhutanan Antarabangsa/ <i>International Forestry</i>	2	2	0	Tiada/ <i>None</i>
FHM3213	Perhutanan Tani/ <i>Agroforestry</i>	3	2	1	Tiada/ <i>None</i>

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

**Nota Penting/Notes :**

1. Pelajar diwajibkan memilih 2 kredit daripada kursus kokurikulum yang ditawarkan oleh universiti/ *It is compulsory for students to take 2 credits of co-curriculum 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 di muka surat belakang buku panduan ini)  
*Students need to complete the english package as the table below : For more details on CEL and LAX please refer to the back/last page of this book.*

MUET Band	TOEFL/IELTS Score	CIEP Level	Graduation Requirements
1 & 2	-	107	3 BBI + 3 CEL + 24 LAX points
3 & 4	TOEFL 500 - 599 IELTS 5.5 - 6.5	108 – 109	2 BBI + 2 CEL + 24 LAX points
5 & 6	TOEFL 600 - 677 IELTS 7.0 – 9.0	-	2 LPE + 1 CEL + 24 LAX points atau 1 LPE + 1 CEL + 24 LAX points (+ 1 global language)

**SKEMA PENGAJIAN/ STUDY SCHEME**

TAHUN 1					
SEMESTER PERTAMA			SEMESTER KEDUA		
KOD	KURSUS	KREDIT	KOD	KURSUS	KREDIT
BBI2423	<i>Academic Interaction and Presentation</i>	3 (2+1)	BBI2424	<i>Academic Writing</i>	3 (2+1)
PRT2008	Pertanian dan Manusia/ <i>Agriculture and Man</i>	2 (2+0)	KOM3403	Pengucapan Awam/ <i>Public Oration</i>	3 (2+1)
SKP2101	Kenegaraan Malaysia/ <i>Malaysian Nationhood</i>	3 (3+0)	SKP2204	Hubungan Etnik / <i>Ethnic Relation</i>	2 (2+0)
SKP2203	Tamadun Islam dan Tamadun Asia/ <i>Asian and Islamic Civilization</i>	2 (2+0)	FCE3204	Kemahiran Berfikir/ <i>Thinking Skills</i>	2 (2+0)
FHM3103	Dendrologi Dipterokarpa/ <i>Dendrology of Dipterocarps</i>	2 (1+1)	FHM3104	Dendrologi Bukan Dipterokarpa/ <i>Dendrology of Non-Dipterocarps</i>	2 (1+1)
FHH3101	Sains Kayu/ <i>Wood Science</i>	3 (2+1)	FHM3107	Tanah Hutan/ <i>Forest Soil</i>	3 (2+1)
FHM3105	Fisiologi Pokok/ <i>Tree Physiology</i>	3 (2+1)	FHM3108	Entomologi Hutan/ <i>Forest Entomology</i>	2 (1+1)
QKK2101	Bakti Siwa (Ko-Kurikulum)	1 (0+1)	QK XXXX	Ko-Kurikulum II	1 (0+1)
<b>JUMLAH</b>		<b>19</b>	<b>JUMLAH</b>		<b>18</b>
TAHUN 2					
KOD	KURSUS	KREDIT	KOD	KURSUS	KREDIT
FHM3106	Ekologi Hutan/ <i>Forest Ecology</i>	3 (2+1)	FHM3109	Patologi Hutan/ <i>Forest Pathology</i>	2 (1+1)
FHM3201	Survei Hutan/ <i>Forest Survey</i>	3 (2+1)	FHM3110	Ekonomi Perhutanan/ <i>Forestry Economics</i>	3 (3+0)
FHM3202	Sukatatan Hutan/ <i>Forest Mensuration</i>	3 (2+1)	FHM3206	Sistem Maklumat Geografi Dalam Perhutanan/ <i>Geographic Information System in Forestry</i>	3 (2+1)
FHM3203	Sivikultur Hutan/ <i>Forest Silviculture</i>	4 (3+1)	FHM3301	Pengurusan Hutan / <i>Forest Management</i>	3 (2+1)
FHM3112	Kaedah Kuantitatif Dalam Perhutanan/ <i>Quantitative Methods in Forestry</i>	4 (3+1)	FHM3303	Pengurusan Hidupan Liar/ <i>Wildlife Management</i>	3 (2+1)
FHS4904	Kem Perhutanan/ <i>Forestry Camp</i>	2 (0+2)	FHM3305	Pengurusan Kawasan Legoh/ <i>Watershed Management</i>	3 (2+1)

			FHM3306	Undang-Undang Dalam Perhutanan/ <i>Laws in Forestry</i>	3 (3+0)
<b>JUMLAH</b>		<b>19</b>	<b>JUMLAH</b>		<b>20</b>
<b>TAHUN 3</b>					
<b>KOD</b>	<b>KURSUS</b>	<b>KREDIT</b>	<b>KOD</b>	<b>KURSUS</b>	<b>KREDIT</b>
<b>KURSUS TERAS</b>					
			FHS4959A	Disertasi Bacelor/ <i>Bachelor Dissertation</i>	3 (0+3)
<b>Pakej Elektif Pengurusan Hutan</b>					
FHM3204	Kejuruteraan Hutan/ <i>Forest Engineering</i> [Elektif Generik 1]	3 (2+1)	FHM4202	Penilaian Ekonomi Sumber Hutan Dan Biodiversiti/ <i>Economic Valuation of Forest Resource and Biodiversity</i> [Elektif Pakej 5]	3 (2+1)
FHM3205	Penuaian Hutan/ <i>Forest Harvesting</i> [Elektif Pakej 1]	3 (2+1)	FHMXXXX	<i>Elektif Pakej 4</i>	2 (2+0)
FHM3208	Pembaikbiak Pokok/ <i>Tree Improvement</i> [Elektif Pakej 2]	3 (2+1)	XXXXXX	<i>Elektif Bebas 1</i>	3 (2+1)
FHM4201	Penderiaan Jauh Dalam Perhutanan/ <i>Remote Sensing in Forestry</i> [Elektif Pakej 3]	3 (2+1)	XXXXXXXX	<i>Elektif Bebas 2</i>	3 (2+1)
FHMXXXX	<i>Elektif Generik2</i>	3 (2+1)			
FHMXXXX	<i>Elektif Generik 3</i>	3 (2+1)			
<b>JUMLAH</b>		<b>18</b>	<b>JUMLAH</b>		<b>14</b>
<b>Pakej Elektif Ekologi Dan Konservasi Hidupan Liar</b>					
FHM3212	Kaedah Pensampelan Hidupan Liar/ <i>Wildlife Sampling Methods</i> [Elektif Pakej 1]	3 (2+1)	FHM4102	Ekologi Komuniti Hidupan Liar/ <i>Wildlife Community Ecology</i> [Elektif Pakej 4]	3 (3+0)
FHR3505	Pengurusan Hidupan Liar Dalam Rekreasi/ <i>Wildlife Management in Recreation</i> [Elektif Pakej 2]	3 (2+1)	FHM4302	Konflik Manusia dan Hidupan Liar/ <i>Human and Wildlife Conflicts</i> [Elektif Pakej 5]	3 (3+0)
FHM4101	Biodiversiti dan Pemuliharaan/ <i>Biodiversity and Conservation</i> [Elektif Generik 1]	3 (2+1)	FHXXXX	<i>Elektif Pakej 6</i>	3 (2+1)
FHM4103	Ekologi Perilaku Hidupan Liar/ <i>Wildlife Behavioural Ecology</i> [Elektif Pakej 3]	3 (2+1)	XXXXXX	<i>Elektif Bebas 1</i>	3 (2+1)
FHXXXX	<i>Elektif Generik 2</i>	3 (2+1)			
FHXXXX	<i>Elektif Generik 3</i>	3 (2+1)			

JUMLAH		18	JUMLAH		15
<b>Pakej Elektif Perhutanan Bandar</b>					
FHM3209	Arborikultur/ <i>Arboriculture</i> [Elektif Pakej 1]	3 (2+1)	FHM4207	Ekologi Perbandaran/ <i>Urban Ecology</i> [Elektif Pakej 6]	2 (1+1)
FHM3302	Pengurusan Hutan Bandar/ <i>Urban Forest Management</i> [Elektif Pakej 2]	3 (2+1)	FHM4303	Pengurusan Risiko Dalam Hutan Bandar/ <i>Risk Management in Urban Forestry</i> [Elektif Pakej 7]	3 (2+1)
FHM3307	Penyelenggaraan Dan Pengurusan Tapak Semaian/ <i>Nursery Management and Maintainance</i> [Elektif Pakej 3]	3 (2+1)	XXXXXX	<i>Elektif Generik3</i>	3 (2+1)
FHM3311	Pengurusan Kesihatan Pokok Hutan Bandar/ <i>Urban Tree Health Management</i> [Elektif Pakej 4]	2 (1+1)	XXXXXX	<i>Elektif Bebas 1</i>	3 (2+1)
FHMXXXX	<i>Elektif Pakej5</i>	2 (1+1)			
FHM4206	Pengukuran Dan Pemantauan Karbon/ <i>Carbon Measurement and Monitoring</i> [Elektif Generik 1]	3 (2+1)			
FHMXXXX	<i>Elektif Generik 2</i>	3 (2+1)			
<b>JUMLAH</b>		<b>19</b>	<b>JUMLAH</b>		<b>14</b>
<b>Pakej ElektifPerhutanan Ladang</b>					
FHM3204	Kejuruteraan Hutan/ <i>Forest Engineering</i> [Elektif Generik 1]	3 (2+1)	FHM3217	Sistem Penuaian Dalam Ladang Hutan/ <i>Harvesting System in Forest Plantations</i> [Elektif Pakej4]	3 (2+1)
FHM3304	Pengurusan Hutan Ladang/ <i>Forest Plantation Management</i> [Elektif Pakej 1]	3 (2+1)	FHM3309	Pensijilan Ladang Hutan/ <i>Forest Plantation Certification</i> [Elektif Pakej5]	2 (1+1)
FHM3307	Penyelenggaraan Dan Pengurusan Tapak Semaian/ <i>Nursery Management and Maintainance</i> [Elektif Pakej2]	3 (2+1)	XXXXXX	<i>Elektif Bebas 1</i>	3 (2+1)
FHM4201	Penderiaan Jauh Dalam Perhutanan/ <i>Remote Sensing in Forestry</i> [Elektif Pakej3]	3 (2+1)	XXXXXX	<i>Elektif Bebas 2</i>	3 (2+1)
FH XXXX	<i>Elektif Generik 2</i>	3 (2+1)			
FHXXXX	<i>Elektif Generik 3</i>	3 (2+1)			
<b>JUMLAH</b>		<b>18</b>	<b>JUMLAH</b>		<b>14</b>
<b>TAHUN 4</b>					

KOD	KURSUS	KREDIT	KOD	KURSUS	KREDIT
<b>KURSUS TERAS</b>					
FHS4959B	Disertasi Bacelor/ <i>Bachelor Dissertation</i>	3 (0+3)	FHS4903	Latihan Industri/ <i>Industrial Training</i>	8 (0+8)
MGM3180	Asas Keusahawanan/ <i>Basic Entrepreneurship</i>	3 (2+1)			
<b>Pakej Elektif Pengurusan Hutan</b>					
FHM3111	Kebakaran Hutan/ <i>Forest Fire</i> [Elektif Pakej 6]	2 (1+1)			
FHM4301	Pengurusan Hutan Lanjutan/ <i>Advance Forest Management</i> [Elektif Pakej 7]	2 (1+1)			
FHMXXXX	<i>Elektif Pakej 8</i>	3 (2+1)			
<b>JUMLAH</b>		<b>13</b>	<b>JUMLAH</b>		<b>8</b>
<b>Pakej Elektif Ekologi Dan Konservasi Hidupan Liar</b>					
FHXXXX	<i>Elektif Pakej 7</i>	3 (2+1)			
XXXXXXX	<i>Elektif Bebas 2</i>	3 (2+1)			
<b>JUMLAH</b>		<b>12</b>	<b>JUMLAH</b>		<b>8</b>
<b>Pakej ElektifPerhutanan Bandar</b>					
FHXXXX	<i>Elektif Pakej8</i>	3 (2+1)			
XXXXXXXX	<i>Elektif Bebas 2</i>	3 (2+1)			
<b>JUMLAH</b>		<b>12</b>	<b>JUMLAH</b>		<b>8</b>
<b>Pakej ElektifPerhutanan Ladang</b>					
FHH3230	Kualiti Dan Hasil Kayu/ <i>Wood Quality and Products</i> [Elektif Pakej6]	3 (2+1)			
FHM3308	Pengurusan Kebakaran Dalam Ladang Hutan/ <i>Fire Management in Forest Plantations</i> [Elektif Pakej7]	2 (1+1)			
FHXXXXX	<i>Elektif Pakej8</i>	2 (1+1)			
<b>JUMLAH</b>		<b>13</b>	<b>JUMLAH</b>		<b>8</b>

\* Satu daripada Elektif Bebas adalah Bahasa Global

## STRUKTUR KURIKULUM/ CURRICULUM STRUCTURE

**Nama Program** : **Bachelor Sains dan Teknologi Kayu/ Bachelor of Wood Science and Technology**

**Jumlah Kredit Bergraduat** : **126 Jam Kredit/ Credit Hours**

**Tempoh Pengajian** : **8 Semester/ Semesters ( 4 Tahun/ Years )**

**Matlamat Program** :

1. Melahirkan graduan yang mempunyai pengetahuan asas yang kukuh, kemahiran teknikal tinggi serta berdaya saing dalam bidang sains dan teknologi kayu.
2. Melahirkan graduan yang berupaya berfikir secara kritis dalam menyelesaikan permasalahan berkaitan bidang sains dan teknologi kayu.
3. Melahirkan graduan yang berkebolehan menjalankan penyelidikan dan inovasi dalam bidang sains dan teknologi kayu.

## 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
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
Bachelor Sains Teknologi Kayu	38	25	25	14	16	13	11	4	6

### 1. Kursus Universiti/ University Courses ( 25 kredit/ credits)

KOD KURSUS/ COURSE CODE	NAMA KURSUS/COURSE NAME	Kr	K	A/T	PRASYARAT/ PREREQUISITE
SKP2101	Kenegaraan Malaysia/ <i>Malaysian Nationhood</i>	3	3	0	Tiada/ <i>None</i>
SKP2203	Tamadun Islam dan Tamadun Asia/ <i>Asian and Islamic Civilization</i>	2	2	0	Tiada/ <i>None</i>
SKP2204	Hubungan Etnik / <i>Ethnic Relation</i>	2	2	0	Tiada/ <i>None</i>
FCE3204	Kemahiran Berfikir/ <i>Thinking Skills</i>	2	2	0	Tiada/ <i>None</i>
KOM3403	Pengucapan Awam/ <i>Public Oration</i>	3	3	0	Tiada/ <i>None</i>
MGM3180	Asas Keusahawanan/ <i>Basic Entrepreneurship</i>	3	2	1	Tiada/ <i>None</i>

PRT2008	Pertanian dan Manusia/ <i>Agriculture and Man</i>	2	2	0	Tiada/ <i>None</i>
BBI2423	<i>Academic Interaction and Presentation</i>	3	2	1	CEL2102
BBI2424	<i>Academic Writing</i>	3	2	1	BBI2423
QKK2101	Bakti Siswa	1	0	1	
QKX	Kokurikulum 2/ <i>Co-curriculum 2</i>	1	0	1	

2. Kursus Teras/ *Core Courses* ( 74 kredit/ *credits*)

KOD KURSUS/ COURSE CODE	NAMA KURSUS/ COURSE NAME	Kr	K	A/T	PRASYARAT/ PREREQUISITE
FHH3201	Hasil Bukan Kayu Hutan/ <i>Non-Wood Forest Products</i>	3	2	1	Tiada/ <i>None</i>
FHH3207	Teknologi Pulpa dan Kertas/ <i>Pulp and Paper Technology</i>	3	2	1	Tiada/ <i>None</i>
FHH3302	Pemasaran Hasil Hutan/ <i>Forest Products Marketing</i>	3	3	0	Tiada/ <i>None</i>
FHH3102	Anatomi Kayu / <i>Wood Anatomy</i>	3	2	1	Tiada/ <i>None</i>
FHH3103	Fizik Kayu / <i>Wood Physics</i>	3	2	1	Tiada/ <i>None</i>
FHH3104	Kimia Kayu / <i>Wood Chemistry</i>	3	2	1	Tiada/ <i>None</i>
FHH3205	Biokomposit/ <i>Biocomposites</i>	3	2	1	Tiada/ <i>None</i>
FHH3202	Pengilangan Dan Pengeringan Kayu/ <i>Sawmilling and Wood Drying</i>	3	2	1	Tiada/ <i>None</i>
FHH3206	Pemesinan Kayu/ <i>Wood Machining</i>	3	2	1	FHH3202
FHH3203	Kemerosotan Kayu dan Rawatan/ <i>Wood Deterioration and Treatment</i>	3	2	1	Tiada/ <i>None</i>
FHH3204	Perekat dan Teknologi Perekatan Kayu/ <i>Wood Adhesive and Adhesion Technology</i>	3	2	1	Tiada/ <i>None</i>
FHH3106	Pengenalan kepada Operasi Hutan/	3	2	1	Tiada/ <i>None</i>
FHM3102	Botani Hutan/ <i>Forest Botany</i>	3	2	1	Tiada/ <i>None</i>
FHS4903	Latihan Industri/ <i>Industrial Training</i>	8	0	8	Tiada/ <i>None</i>
FHS4904	Kem Perhutanan/ <i>Forestry Camp</i>	2	0	2	Tiada/ <i>None</i>
FHS4959	Disertasi Bacelor/ <i>Bachelor Dissertation</i>	6	0	6	Tiada/ <i>None</i>
FHM3112	Kaedah Kuantitatif Dalam Perhutanan/ <i>Quantitative Methods in Forestry</i>	4	3	1	Tiada/ <i>None</i>
FHH3303	Ekonomi Industri Perakayuan/ <i>Wood Industry Economics</i>	3	3	0	Tiada/ <i>None</i>
FHM3101	Sains Perhutanan/ <i>Forest Science</i>	3	3	0	Tiada/ <i>None</i>
FHH3105	Mekanik Kayu/ <i>Wood Mechanics</i>	3	2	1	Tiada/ <i>None</i>



FHH3301	Perolehan Bekalan Hasil Hutan/ <i>Forest Products Procurement</i>	3	2	1	Tiada/ <i>None</i>
FHH3304	Analisis Operasi Industri Hasil Hutan/ <i>Operation Analysis in Forest Products Industries</i>	3	2	1	Tiada/ <i>None</i>

3. Kursus Elektif/ *Elective Courses (27 kredit/ credits)*

Pelajar pelajar perlu mengambil 27 kredit bagi kursus elektif yang merangkumi 21 kredit Elektif Program dan 6 kredit Elektif Bebas/ *BI*

i. ELEKTIF PROGRAM/ *PROGRAMME ELECTIVE*

KOD KURSUS/ <i>COURSE CODE</i>	NAMA KURSUS/ <i>COURSE NAME</i>	Kr	K	A/T	PRASYARAT/ <i>PREREQUISITE</i>
FHH3208	Proses Pembuatan Perabot/ <i>Furniture Manufacturing Process</i>	3	2	1	Tiada/ <i>None</i>
FHH3210	Biojisim Dan Biotenaga/ <i>Biomass and Bioenergy</i>	3	2	1	Tiada/ <i>None</i>
FHH4203	Biokomposit Termaju/ <i>Advanced Biocomposite</i>	3	2	1	Tiada/ <i>None</i>
FHH4201	Teknologi Penglitup dan Kemasiapan Kayu/ <i>Wood Coating and Finishing Technology</i>	3	2	1	Tiada/ <i>None</i>
FHH4303	Pengurusan Dan Penggunaan Sisa Kayu/ <i>Wood Waste Management and Utilisation</i>	3	2	1	Tiada/ <i>None</i>
FHH3209	Aplikasi Komputer Dalam Reka Bentuk Produk Kayu/ <i>Computer Application in Wood Product Design</i>	3	1	2	Tiada/ <i>None</i>
FHH4301	Pencemaran Dan Kawalan Dalam Industri Hutan/ <i>Pollution and Control in Forest Industries</i>	3	3	0	Tiada/ <i>None</i>
FHH4302	Sistem Pengawalan Mutu Pemprosesan Kayu/ <i>Wood Processing Quality Control System</i>	3	2	1	Tiada/ <i>None</i>
FHH3305	Analisis Kewangan Industri Hasil Hutan/ <i>Financial Analysis of Forest Products Industries</i>	3	3	0	Tiada/ <i>None</i>
FHH4304	Pengurusan Industri Perhutanan/ <i>Forest Industry Management</i>	3	3	0	Tiada/ <i>None</i>
FHH4305	Perdagangan Kayu Antarabangsa/ <i>International Timber Trade</i>	3	3	0	Tiada/ <i>None</i>

ii. ELEKTIF BEBAS

KOD KURSUS/ COURSE CODE	NAMA KURSUS/COURSE NAME	Kr	K	A/T	PRASYARAT/ PREREQUISITE
FHH3307	Ergonomik Hutan/ <i>Forest Ergonomics</i>	3	2	1	Tiada/ <i>None</i>
FHH4202	Penambahbaikan Mutu Kayu/ <i>Wood Quality Improvement</i>	3	2	1	Tiada/ <i>None</i>
FHM3306	Undang-Undang Dalam Perhutanan/ <i>Laws in Forestry</i>	3	3	0	Tiada/ <i>None</i>
BB_	Bahasa Global/ <i>Global Language</i>	3			
	Elektif Bebas	3			

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

**Nota Penting/Notes :**

1. Pelajar diwajibkan memilih 2 kredit daripada kursus kokurikulum yang ditawarkan oleh universiti/ *It is compulsory for students to take 2 credits of co-curriculum 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 di muka surat belakang buku panduan ini)  
*Students need to complete the english package as the table below : For more details on CEL and LAX please refer to the back/last page of this book.*

MUET Band	TOEFL/IELTS Score	CIEP Level	Graduation Requirements
1 & 2	-	107	3 BBI + 3 CEL + 24 LAX points
3 & 4	TOEFL 500 - 599 IELTS 5.5 - 6.5	108 – 109	2 BBI + 2 CEL + 24 LAX points
5 & 6	TOEFL 600 - 677 IELTS 7.0 – 9.0	-	2 LPE + 1 CEL + 24 LAX points <u>atau</u> 1 LPE + 1 CEL + 24 LAX points (+ 1 global language)

**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
PRT2008	Pertanian dan Manusia/ <i>Agriculture and Man</i>	2	2	0
SKP2101	Kenegaraan Malaysia/ <i>Malaysian Nationhood</i>	3	3	0
SKP2203	Tamadun Islam dan Tamadun Asia/ <i>Asian and Islamic Civilization</i>	2	2	0
FHM3101	Sains Perhutanan/ <i>Forest Science</i>	3	3	0
FHM3102	Botani Hutan/ <i>Forest Botany</i>	3	2	1
FHH3102	Anatomi Kayu / <i>Wood Anatomy</i>	3	2	1
QKX	Kokurikulum 1/ <i>Co-curriculum 1</i>	1	0	1
<b>JUMLAH/ TOTAL</b>		<b>17</b>	<b>14</b>	<b>3</b>

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

KOD KURSUS/ COURSE CODE	NAMA KURSUS/COURSE NAME	Kr	K	A/T
BBI2423	<i>Academic Interaction and Presentation</i>	3	2	1
KOM3403	Pengucapan Awam/ <i>Public Oration</i>	3	3	0
SKP2204	Hubungan Etnik / <i>Ethnic Relation</i>	2	2	0
FHH3201	Hasil Hutan Bukan Kayu/ <i>Non-Wood Forest Products</i>	3	2	1
FHH3103	Fizik Kayu / <i>Wood Physics</i>	3	2	1
FHH3104	Kimia Kayu / <i>Wood Chemistry</i>	3	2	1
QKX	Kokurikulum 2/ <i>Co-curriculum 2</i>	1	0	1
<b>JUMLAH/ TOTAL</b>		<b>17</b>	<b>12</b>	<b>5</b>

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
BBI2424	<i>Academic Writing</i>	3	2	1
FHH3202	Pengilangan Dan Pengeringan Kayu/ <i>Sawmilling and Wood Drying</i>	3	2	1
FHH3204	Perekat dan Teknologi Perekatan Kayu/ <i>Wood Adhesive and Adhesion Technology</i>	3	2	1
FHH3106	Pengenalan Kepada Operasi Hutan/	3	2	1
FHH3105	Mekanik Kayu/ <i>Wood Mechanics</i>	3	2	1
FHS4904	Kem Perhutanan/ <i>Forestry Camp</i>	2	0	2
<b>JUMLAH/ TOTAL</b>		<b>17</b>	<b>10</b>	<b>7</b>

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

KOD KURSUS/ COURSE CODE	NAMA KURSUS/COURSE NAME	Kr	K	A/T
FHH3205	Biokomposit/ <i>Biocomposites</i>	3	2	1
FHH3206	Pemesinan Kayu/ <i>Wood Machining</i>	3	2	1
FHH3301	Perolehan Bekalan Hasil Hutan/ <i>Forest Products Procurement</i>	3	2	1
FHH3203	Kemerosotan Kayu dan Rawatan/ <i>Wood Deterioration and Treatment</i>	3	2	1
FHH3303	Ekonomi Industri Perkayuan/ <i>Wood Industry Economics</i>	3	3	0
MGM3180	Asas Keusahawanan/ <i>Basic Entrepreneurship</i>	3	2	1
<b>JUMLAH/ TOTAL</b>		<b>18</b>	<b>13</b>	<b>5</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
FCE3204	Kemahiran Berfikir/ <i>Thinking Skills</i>	2	2	0
FHH3207	Teknologi Pulpa dan Kertas/ <i>Pulp and Paper Technology</i>	3	2	1
FHM3112	Kaedah Kuantitatif Dalam Perhutanan/	4	3	1

<i>Quantitative Methods in Forestry</i>				
	Elektif I/ <i>Elective I</i>	3	-	-
	Elektif II/ <i>Elective II</i>	3	-	-
	Elektif III/ <i>Elective III</i>	3	-	-
	<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
FHH3304	Analisis Operasi Industri Hasil Hutan/ <i>Operation Analysis in Forest Products Industries</i>	3	2	1
FHS4959A	Disertasi Bacelor/ <i>Bachelor Dissertation</i>	3	0	3
	Elektif IV/ <i>Elective IV</i>	3	-	-
	Elektif V/ <i>Elective V</i>	3	-	-
	Elektif VI/ <i>Elective VI</i>	3	-	-
	<b>JUMLAH/ TOTAL</b>	<b>19</b>	<b>7</b>	<b>6</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
FHH3302	Pemasaran Hasil Hutan/ <i>Forest Products Marketing</i>	3	3	0
FHS4959B	Disertasi Bacelor/ <i>Bachelor Dissertation</i>	3	0	3
QKK2101	Bakti Siswa	1	0	1
	Elektif VII/ <i>Elective VII</i>	3	-	-
	Elektif VIII/ <i>Elective VIII</i>	3	-	-
	Elektif IX/ <i>Elective IX</i>	3	-	-
	<b>JUMLAH/ TOTAL</b>	<b>18</b>	<b>6</b>	<b>6</b>

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

KOD KURSUS/ COURSE CODE	NAMA KURSUS/COURSE NAME	Kr	K	A/T
FHS4903	Latihan Industri/ <i>Industrial Training</i>	8	0	8
	<b>JUMLAH/ TOTAL</b>	<b>8</b>	<b>0</b>	<b>8</b>

## STRUKTUR KURIKULUM/ CURRICULUM STRUCTURE

**Nama Program** : **Bachelor Sains Taman dan Rekreasi/ Bachelor of Parks and Recreation Science**

**Jumlah Kredit Bergraduat** : **137 Jam Kredit/ Credits Hours**

**Tempoh Pengajian** : **8 Semester/ Semesters ( 4 Tahun/ Years )**

**Matlamat Program** :

1. Melahirkan graduan yang terlatih dan profesional yang berkeupayaan merancang, mengurus, melaksana, dan menilai sumber dan aktiviti dalam bidang taman dan rekreasi
2. Melahirkan graduan yang dapat mengurus penggunaan teknologi terkini dalam pelbagai industri taman dan rekreasi serta pelancongan eko di sektor awam dan swasta
3. Melahirkan graduan yang beretika, prihatin, proaktif, berketrampilan, berdaya saing dan berbudaya cemerlang dalam usaha menjadikan Malaysia negara terbilang
4. Melahirkan graduan yang berupaya menjalankan penyelidikan dalam bidang sains taman dan rekreasi

## 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 Taman dan Rekreasi	21	16	25	22	20	27	25	7	26

1. Kursus Universiti/ *University Courses* ( 25 kredit/ *credits*)

KOD KURSUS/ COURSE CODE	NAMA KURSUS/COURSE NAME	Kr	K	A/T	PRASYARAT/ PREREQUISITE
BBI2423	<i>Academic Interaction and Presentation</i>	3	2	1	CEL2102
BBI2424	<i>Academic Writing</i>	3	2	1	BBI2423
FCE3204	Kemahiran Berfikir/ <i>Thinking Skills</i>	2	2	0	Tiada/ <i>None</i>
SKP2501	Pengantar Psikologi/ <i>Introduction to Psychology</i>	3	3	0	Tiada/ <i>None</i>

PRT2008	Pertanian dan Manusia/ <i>Agriculture and Man</i>	2	2	0	Tiada/ <i>None</i>
SKP2101	Kenegaraan Malaysia/ <i>Malaysian Nationhood</i>	3	3	0	Tiada/ <i>None</i>
SKP2203	Tamadun Islam dan Tamadun Asia/ <i>Asian and Islamic Civilization</i>	2	2	0	Tiada/ <i>None</i>
SKP2204	Hubungan Etnik / <i>Ethnic Relation</i>	2	2	0	Tiada/ <i>None</i>
QKxxxx	Kokurikulum 1/ <i>Co-curriculum 1</i>	1	0	1	
QKxxx	Kokurikulum 2/ <i>Co-curriculum 2</i>	1	0	1	

2. Kursus Teras/ *Core Courses* ( 69 kredit/ *credits*)

KOD KURSUS/ COURSE CODE	NAMA KURSUS/ <i>COURSE NAME</i>	Kr	K	A/T	PRASYARAT/ <i>PREREQUISITE</i>
FHR4301	Penilaian Sumber Rekreasi/ <i>Recreation Resource Valuation</i>	4	4	0	Tiada/ <i>None</i>
FHR3202	Inventori Sumber Taman Dan Rekreasi/ <i>Park and Recreation Resources Inventory</i>	3	2	1	Tiada/ <i>None</i>
FHM3102	Botani Hutan/ <i>Forest Botany</i>	3	2	1	Tiada/ <i>None</i>
FHR3503	Keusahawanan Dalam Taman Dan Rekreasi/ <i>Entrepreneurship in Parks and Recreation</i>	3	2	1	Tiada/ <i>None</i>
FHR3101	Pengenalan Kepada Rekreasi Luar/ <i>Introduction to Outdoor Recreation</i>	3	2	1	Tiada/ <i>None</i>
FHR3203	Interpretasi Persekitaran/ <i>Environmental Interpretation</i>	3	2	1	Tiada/ <i>None</i>
FHR3204	Perancangan Rekreasi Luar/ <i>Outdoor Recreation Planning</i>	3	2	1	Tiada/ <i>None</i>
FHR3501	Perilaku Pengguna Rekreasi/ <i>Recreational User Behaviour</i>	3	3	0	Tiada/ <i>None</i>
FHR3301	Pengurusan Risiko Dalam Rekreasi/ <i>Risk Management in Recreation</i>	3	2	1	Tiada/ <i>None</i>
FHR3302	Pemrograman Dan Kepemimpinan Rekreasi/ <i>Recreation Programming and Leadership</i>	3	2	1	Tiada/ <i>None</i>
FHR4401	Pengurusan Taman Dan Rekreasi/ <i>Parks and Recreation Management</i>	3	3	0	Tiada/ <i>None</i>
FHR3201	Kemahiran Rekreasi Luar/ <i>Outdoor Recreation Skills</i>	3	1	2	Tiada/ <i>None</i>
FHR3102	Ekologi Sumber Rekreasi/ <i>Recreation Resource Ecology</i>	3	2	1	Tiada/ <i>None</i>
FHR4402	Pengurusan Pelancongan Warisan Dan Komuniti/ <i>Heritage and</i>	3	2	1	Tiada/ <i>None</i>

<i>Community Tourism Management</i>					
FHS4903	Latihan Industri/ <i>Industrial Training</i>	8	0	8	Tiada/ <i>None</i>
FHS4904	Kem Perhutanan/ <i>Forestry Camp</i>	2	0	2	Tiada/ <i>None</i>
FHS4959	Disertasi Bacelor/ <i>Bachelor Dissertation</i>	6	0	6	Tiada/ <i>None</i>
FHR4302	Kaedah Penyelidikan Dalam Rekreasi Dan Ekopelancongan/ <i>Research Method in Recreation and Ecotourism</i>	3	3	0	Tiada/ <i>None</i>
FHM3112	Kaedah Kuantitatif Dalam Perhutanan/ <i>Quantitative Methods in Forestry</i>	4	3	1	Tiada/ <i>None</i>
FHM3101	Sains Perhutanan/ <i>Forest Science</i>	3	3	0	Tiada/ <i>None</i>
FHR3507	Hospitaliti Dalam Taman dan Rekreasi/ <i>Hospitality in Parks and Recreation</i>	3	2	1	Tiada/ <i>None</i>

3. Kursus Elektif/ *Elective Courses* ( Pilih/Choose 33 credit/ *credits*)

Pelajar perlu mengambil 33 kredit bagi kursus elektif merangkumi 27 kredit minimum bagi Elektif Teras dan 6 kredit Elektif Bebas.

KOD KURSUS/ <i>COURSE CODE</i>	NAMA KURSUS/ <i>COURSE NAME</i>	Kr	K	A/T	PRASYARAT/ <i>PREREQUISITE</i>
FHR3502	Perancangan Dan Rekabentuk Tapak Kawasan Rekreasi/ <i>Recreation Site Planning and Design</i>	3	2	1	Tiada/ <i>None</i>
FHM3209	Arborikultur/ <i>Arboriculture</i>	3	2	1	Tiada/ <i>None</i>
FHR3504	Pengurusan Dan Operasi Prasarana Rekreasi/ <i>Recreational Facilities Operation and Management</i>	3	2	1	Tiada/ <i>None</i>
FHR3506	Rekreasi Terapeutik Bagi Golongan Istimewa/ <i>Therapeutic Recreation for Special People</i>	3	2	1	Tiada/ <i>None</i>
FHR3505	Pengurusan Hidupan Liar Dalam Rekreasi/ <i>Wildlife Management in Recreation</i>	3	2	1	Tiada/ <i>None</i>
FHR4501	Pendidikan Alam Semulajadi/ <i>Environmental Education</i>	3	2	1	Tiada/ <i>None</i>
FHR4503	Pengurusan Ekopelancongan/ <i>Ecotourism Management</i>	3	2	1	Tiada/ <i>None</i>
FHR4504	Pembangunan Produk Rekreasi/ <i>Development of Recreation Products</i>	3	2	1	Tiada/ <i>None</i>
FHR4502	Pemasaran Rekreasi/ <i>Recreation Marketing</i>	3	2	1	Tiada/ <i>None</i>
FHR3205	Operasi dan Senggaraan Taman/ <i>Parks Maintenance and</i>	2	1	1	Tiada/ <i>None</i>



<i>Operation</i>					
FHR4608	Pengurusan Kawasan Perlindungan/ <i>Protected Areas Management</i>	3	2	1	Tiada/ None
FHM3301	Pengurusan Hutan / <i>Forest Management</i>	3	2	1	Tiada/ None
Elektif Bebas Bahasa Global					Tiada/ None
Elektif Bebas					Tiada/ None

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

**Nota Penting/Notes :**

1. Pelajar diwajibkan memilih 2 kredit daripada kursus kokurikulum yang ditawarkan oleh universiti/ *It is compulsory for students to take 2 credits of co-curriculum 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 di muka surat belakang buku panduan ini)  
*Students need to complete the english package as the table below : For more details on CEL and LAX please refer to the back/last page of this book.*

MUET Band	TOEFL/IELTS Score	CIEP Level	Graduation Requirements
1 & 2	-	107	3 BBI + 3 CEL + 24 LAX points
3 & 4	TOEFL 500 - 599 IELTS 5.5 - 6.5	108 – 109	2 BBI + 2 CEL + 24 LAX points
5 & 6	TOEFL 600 - 677 IELTS 7.0 – 9.0	-	2 LPE + 1 CEL + 24 LAX points <u>atau</u> 1 LPE + 1 CEL + 24 LAX points (+ 1 global language)

**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
BBI2423	<i>Academic Interaction and Presentation</i>	3	2	1
FCE3204	<i>Kemahiran Berfikir/Thinking Skills</i>	2	2	0
FHM3101	<i>Sains Perhutanan/ Forest Science</i>	3	3	0
FHR3101	<i>Pengenalan Kepada Rekreasi Luar/ Introduction to Outdoor Recreation</i>	3	2	1
PRT2008	<i>Pertanian dan Manusia/Agriculture and Man</i>	2	2	0
SKP2101	<i>Kenegaraan Malaysia/ Malaysian Nationhood</i>	3	3	0
QKxxxx	<i>Kokurikulum 1/Co-curriculum 1</i>	1	0	1
<b>JUMLAH/ TOTAL</b>		<b>17</b>	<b>14</b>	<b>3</b>

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

KOD KURSUS/ COURSE CODE	NAMA KURSUS/COURSE NAME	Kr	K	A/T
BBI2424	<i>Academic Writing</i>	3	2	1
FHM3102	<i>Botani Hutan/ Forest Botany</i>	3	2	1
FHR3201	<i>Kemahiran Rekreasi Luar/Outdoor Recreation Skills</i>	3	1	2
SKP2501	<i>Pengantar Psikologi/ Introduction to Psychology</i>	3	3	0
SKP2203	<i>Tamadun Islam dan Tamadun Asia/ Asian and Islamic Civilization</i>	2	2	0
SKP2204	<i>Hubungan Etnik /Ethnic Relation</i>	2	2	0
<b>JUMLAH/ TOTAL</b>		<b>16</b>	<b>12</b>	<b>4</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
FHR3102	Ekologi Sumber Rekreasi/ <i>Recreation Resource Ecology</i>	3	2	1
FHR3202	Inventori Sumber Taman Dan Rekreasi/ <i>Park and Recreation Resources Inventory</i>	3	2	1
FHR3203	Interpretasi Persekitaran/ <i>Environmental Interpretation</i>	3	2	1
FHS4904	Kem Perhutanan/ <i>Forestry Camp</i>	2	0	2
FHR3501	Perilaku Pengguna Rekreasi/ <i>Recreational User Behaviour</i>	3	3	0
	Elektif / <i>Elective</i>	3		
<b>JUMLAH/ TOTAL</b>		<b>17</b>	<b>11</b>	<b>6</b>

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

KOD KURSUS/ COURSE CODE	NAMA KURSUS/COURSE NAME	Kr	K	A/T
FHR3204	Perancangan Rekreasi Luar/ <i>Outdoor Recreation Planning</i>	3	2	1
FHM3112	Kaedah Kuantitatif Dalam Perhutanan/ <i>Quantitative Methods in Forestry</i>	4	3	1
FHR3503	Keusahawanan Dalam Taman Dan Rekreasi/ <i>Entrepreneurship in Parks and Recreation</i>	3	2	1
	Elektif / <i>Elective</i>	3		
	Elektif / <i>Elective</i>	3		
QKxxxx	Kokurikulum 2/ <i>Co-curriculum 2</i>	1	0	1
<b>JUMLAH/ TOTAL</b>		<b>17</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
FHR3301	Pengurusan Risiko Dalam Rekreasi/ <i>Risk Management in Recreation</i>	3	2	1
FHR3302	Pemrograman Dan Kepemimpinan Rekreasi/ <i>Recreation Programming and Leadership</i>	3	2	1
FHR4401	Pengurusan Taman Dan Rekreasi/ <i>Parks and Recreation Management</i>	3	3	0
FHR4302	Kaedah Penyelidikan Dalam Rekreasi Dan Ekopelancongan/ <i>Research Method in Recreation and Ecotourism</i>	3	3	0
FHR3507	Hospitaliti Dalam Taman dan Rekreasi/ <i>Hospitality in Parks and Recreation</i>	3	3	0
	Elektif/ <i>Elective</i>	3	-	-
<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
FHS4959A	Disertasi Bacelor/ <i>Bachelor Dissertation</i>	3	0	3
	Elektif/ <i>Elective</i>	3		
	Elektif/ <i>Elective</i>	3		
	Elektif/ <i>Elective</i>	3		
	Elektif/ <i>Elective</i>	3		
	Elektif/ <i>Elective</i>	3		
<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
FHR4301	Penilaian Sumber Rekreasi/ <i>Recreation Resource Valuation</i>	4	4	0
FHR4402	Pengurusan Pelancongan Warisan Dan Komuniti/ <i>Heritage and Community Tourism Management</i>	3	2	1
FHS4959B	Disertasi Bacelor/ <i>Bachelor Dissertation</i>	3	0	3
	Elektif/ <i>Elective</i>	3		
	Elektif/ <i>Elective</i>	3	-	-
<b>JUMLAH/ TOTAL</b>		<b>16</b>		

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

KOD KURSUS/ COURSE CODE	NAMA KURSUS/COURSE NAME	Kr	K	A/T
FHS4903	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 Pengeluaran Hutan/ Department of Forest Production

FHH3101 Sains Kayu/ Wood Science 4 (3+1)

Prasyarat : Tiada

Kursus ini memperkenalkan kepada pelajar berkenaan kepentingan kayu dalam kehidupan manusia. Pengajaran akan menumpu kepada sifat anatomi, kimia, fizikal, dan mekanikal kayu serta perkaitannya dalam pemprosesan dan penghasilan produk berasas kayu. Pelajar akan didedahkan kepada teknik pengecaman pelbagai spesies kayu komersil

*This course introduces student on the importance of wood to human life. The teaching will focus on the anatomical, chemical, physical, and mechanical properties of wood in relation to the processing and production of wood-based products. The student is exposed to the identification technique of various commercial wood species*

FHH3201 Hasil Hutan Bukan Kayu/ Non-Wood Forest Products 3 (2+1)

Prasyarat : Tiada

Kursus ini merangkumi kepelbagaian hasil hutan bukan kayu seperti rotan, buluh, fitokimia, tumbuhan ubatan dan palma. Asas penanaman buluh dan rotan serta sifat pelbagai hasil hutan bukan kayu didedahkan. Proses pengumpulan dan pengagihan bahan menggunakan teknologi yang sesuai dalam proses pembuatan produk akhir untuk pembangunan industri SME serta sosio-ekonomi dibincangkan.

*This course encompasses the diversity of non-wood forest products such as rattan, bamboo, phytochemicals, medicinal plants and palms. Basic of bamboo and rattan planting as well as non-wood forest products properties are exposed. Process of collection and its distribution using appropriate technology for end product manufacturing towards the development of SME industries and socio-economic are discussed)*

FHH3207 Teknologi Pulpa dan Kertas/ Pulp and Paper Technology 3 (2+1)

Prasyarat : Tiada

Kursus ini merangkumi terhadap sejarah dan pertimbangan komersial dan pencirian bahan mentah bagi industri pulpa dan kertas. Teknik mempulpa, proses pelunturan dan penyediaan stok pulpa serta proses pembuatan kertas didedahkan. Perolehan bahan dan pertimbangan alam sekitar dalam industri pulpa dan kertas dibincangkan.

*This course encompasses the history, commercial consideration and raw material characteristics of the pulp and paper industry. Technique of pulping, bleaching processes, pulp stock preparation and papermaking are exposed. Procurement of materials and environmental consideration in pulp and paper industry are discussed*

FHH3201 Hasil Hutan Bukan Kayu/ Non-Wood Forest Products 3 (2+1)

Prasyarat : Tiada

Kursus ini merangkumi sejarah, jenis hasil hutan bukan kayu seperti rotan, buluh, fitokimia tumbuhan ubatan dan palma. Proses pengumpulan dan agihan menggunakan teknologi sesuai dalam proses pembuatan produk akhir untuk pembangunan industri desa serta sosio-ekonomi

*This course covers the history, types of non-wood forest products, i.e., rattan, bamboo, phytochemicals, medicinal plants and palms. Collection and its distribution process by means of appropriate technology in manufacturing end products towards the development of cottage*

*industries as well as socio-economic development.*

FHH3301 Perolehan Bekalan Hasil Hutan/ *Forest Products Procurement* 3 (2+1)

Prasyarat :Tiada

Kursus ini merangkumi konsep dan kaedah perolehan bekalan hasil hutan untuk proses hiliran. Kaedah penentuan harga, penggredan dan kaedah pengukuran isipadu kayu balak dan kayu gergaji ditekankan. Sistem perolehan bekalan hasil hutan secara sah dan mampan didedahkan  
*This course encompasses the concepts and methods of forest products procurement for downstream processing. Pricing methods, grading and volume measurement methods for logs and sawn timber are emphasized. Legal and sustainable procurement system of forest products are exposed*

FHH3302 Pemasaran Hasil Hutan/*Forest Products Marketing* 3 (3+0)

Prasyarat : Tiada

Kursus ini merangkumi konsep asas pemasaran dan pengurusan pemasaran untuk mendapatkan gambaran mengenai proses dan aktiviti dalam memasarkan hasil hutan dan perkhidmatan hutan. Pendekatan pengurusan dalam membuat keputusan pemasaran terutama sekali dalam membangunkan campuran dan strategi pemasaran ditekankan. Beberapa topik lain berkaitan dengan pemasaran keluaran/perkhidmatan seperti pensijilan dibincangkan  
*This course encompasses the fundamental concepts of marketing and marketing management to obtain a broad overview of the processes and activities that are required in marketing of forest products and services. Managerial approach in making marketing decisions particularly on the development of the marketing mix and strategies are emphasized. Several topics related to the marketing of forest products/services like product certification are discussed*

FHH3303 Ekonomi Industri Perakayuan/*Wood Industry Economics* 3 (3+0)

Prasyarat : Tiada

Kursus ini merangkumi prinsip ekonomi mikro seperti pengeluaran, penawaran dan permintaan yang melibatkan industri perakayuan. Teori kos, struktur dan tingkahlaku pasaran, tingkah laku penentuan harga, dan prestasi pasaran ditekankan. Isu semasa berkaitan dengan perdagangan kayu dibincangkan  
*This course encompasses the micro economics principles such as production, demand and supply related to wood industry. Cost theory, market structure and behavior, price determination behavior, and market performance are emphasized. Current issues on timber trade are discussed*

FHH3304 Analisis Operasi Industri Hasil Hutan/ *Operation Analysis in Forest Products Industries* 3 (2+1)

Prasyarat : Tiada

Kursus ini merangkumi konsep dan teknik berkaitan perancangan, reka bentuk, dan pengawalan operasi penghasilan produk hasil hutan. Analisis proses pembuatan produk hasil hutan untuk mengoptimumkan kecekapan pengeluaran ditumpukan. Penyelesaian masalah berdasarkan maklumat yang diperolehi dari lapangan dijalankan  
*This course encompasses the concept and techniques related to planning, design, and control in forest products manufacturing operations. Analysis of forest products manufacturing process to optimize production efficiency are emphasized. Problem solution based on field information are conducted*

- FHH3102 Anatomi Kayu dan Gentian/ *Wood and Fibre Anatomy* 3 (2+1)  
 Prasyarat : Tiada  
 Kursus ini merangkumi struktur anatomi kayu dan kepentingannya dalam penghasilan produk kayu. Pembentukan dan perkembangan kayu di peringkat bersel dan hubungannya dengan ekologi persekitaran ditekankan. Kepelbagaian sifat anatomi kayu secara makro dan mikro serta aplikasinya dalam pengecaman kayu didedahkan  
*This course encompasses wood anatomical structures and its importance in production of wood products. Formation and development of wood in cellular level and its relationship with environmental ecology are emphasized. Variety of macro and micro wood anatomical features and its application in wood identification are exposed*
- FHH3103 Fizik Kayu / *Wood Physics* 3 (2+1)  
 Prasyarat : Tiada  
 Kursus ini merangkumi sifat fizik kayu dan gentian sebagai bahan mentah industri. Hubungkait air dengan kayu, ketumpatan, sifat haba, elektrik, akustik kayu, gelagat kayu terhadap api ditumpukan. Pergerakan cecair dalam kayu dan kaitannya terhadap rawatan kayu didedahkan  
*This course encompasses physical properties of wood as industrial raw material. Wood and water relationship, density, electrical, thermal, acoustic properties, behaviour of wood towards fire are emphasized. Flow of liquid in wood and its relation treatment methods are exposed*
- FHH3104 Kimia Kayu / *Wood Chemistry* 3 (2+1)  
 Prasyarat : Tiada  
 Kursus ini merangkumi proses pembentukan dan taburan komponen kimia dalam kayu dan gentian. Struktur kimia dan tindakbalas kimia terhadap ekstraktif, lignin, selulosa, hemiselulosa dan kulit kayu dibincangkan  
*This course encompasses wood formation dan distribution of chemical constituents in wood. Chemical structure and chemical reactions on extractives, lignin, cellulose, hemicelluloses and barks are discussed*
- FHH3105 Mekanik Kayu 3 (2+1)  
 Prasyarat : Tiada  
 Kursus ini merangkumi sifat mekanik kayu pejal dan komposit kayu. Konsep dan ujian mekanik kayu, faktor yang mempengaruhi sifat mekanik, dan kaitannya dengan penggunaan ditekankan. Kriteria rekabentuk elastik untuk struktur kayu, papan komposit dan kombinasi kedua-duanya didedahkan.  
*This course encompasses the mechanical properties of solid wood and composite woods. Concept and testing in wood mechanics, factors that influences the mechanical properties and its relation to utilization are emphasized. Elastic design criteria for wood and wood composite structures and the combination of both are exposed*
- FHH3106 Pengenalan Kepada Operasi Hutan 3 (2+1)  
 Prasyarat : Tiada  
 Kursus ini merangkumi berkenaan konsep operasi hutan, teknik pembalakan dan sistem penuaian. Kaedah sukatan, survei, dan operasi pembalakan ditumpukan. Pembinaan pelan operasi hutan, termasuk jalan hutan, pengurusan dan penyelenggaraan jentera didedahkan  
*This course encompasses the concept of forest operation, logging techniques and harvesting system. Mensuration, survey and logging operation techniques are emphasized. Development of operational plan including forest road, management and maintenance of machinery are exposed*



FHH3202 Pengilangan Dan Pengerinan Kayu/ *Sawmilling and Wood Drying* 3 (2+1)

Prasyarat : Tiada

Kursus ini merangkumi teori, konsep dan amalan dalam pengilangan dan pengerinan kayu. Peralatan, langkah-langkah pemrosesan, kaedah dan faktor yang mempengaruhi pulangan dalam pengilangan kayu didedahkan. Prinsip dan kaedah pengerinan kayu serta punca dan kawalan kecacatan kayu akibat pengerinan dibincangkan.

*This course encompasses theory, concept and practices of sawmilling and wood drying. Machineries, processing steps, methods and factors that affect sawmilling recovery are exposed. Principle and methods of wood drying as well as causes and preventions of drying defects are discussed*

FHH3203 Kerosotan Kayu dan Rawatan/ *Wood Deterioration and Treatment* 3 (2+1)

Prasyarat : Tiada

Kursus ini merangkumi aspek kerosotan kayu dan hasil hutan lain. Punca kerosotan kayu disebabkan oleh agen biotik dan abiotik dibincangkan. Kaedah melindungi dan mengawet kayu didedahkan

*This course encompasses the aspects of deterioration of wood and other forest products. Biotic and abiotic agents that affected deterioration are discussed. Methods of wood protection and preservation are exposed*

FHH3204 Perekat dan Teknologi Perekatan Kayu/ *Wood Adhesive and Adhesion Technology* 3 (2+1)

Prasyarat : Tiada

Kursus ini merangkumi pelbagai jenis perekat kayu serta sifatnya. Teori asas dan sifat fizikal perekat serta mekanisma perekatan ditekankan. Aplikasi dan ujian rekatan pelbagai jenis perekat dalam penghasilan komposit kayu dijalankan

*This course encompasses various types of wood adhesives and their properties. Fundamental theory and physical properties of the adhesives and its adhesion mechanism are emphasized. Application and adhesion test of wood composites are conducted*

FHH3205 Biokomposit/ *Biocomposites* 3 (2+1)

Prasyarat : Tiada

Kursus ini merangkumi jenis dan proses pembuatan papan komposit konvensional daripada pelbagai jenis bahan kayu. Pengujian dan penilaian sifat fizikal dan mekanikal papan komposit didedahkan. Faktor yang mempengaruhi prestasi papan komposit dibincangkan

*This course encompasses types and manufacturing process of conventional composite boards from various type of wood. Testing and evaluation of physical and mechanical properties of composite boards are exposed. Factors influencing performance of composite boards are discussed*

FHH3206 Pemesinan Kayu/ *Wood Machining* 3 (2+1)

Prasyarat : FHH3202

Kursus ini merangkumi teori, konsep dan kaedah pemesinan kayu. Hubungkait pembolehubah pemesinan dan kualiti pemesinan di dalam proses pengetaman dan pengupasan dibincangkan. Kerja pemesinan kayu dengan membuat perabot dilaksanakan

*The course encompasses theory, concept and methods of wood machining. Relationship of machining variables with performance and quality in planing and veneer cutting are discussed.*

*Wood machining activities by making furniture are conducted*

FHH3208 Proses Pembuatan Perabot/ *Furniture Manufacturing Process* 3 (2+1)

Prasyarat : Tiada

Kursus ini merangkumi latar belakang industri perabot di Malaysia dan seluruh dunia. Prinsip dan kaedah rekabentuk perabot, proses utama pembuatan perabot, isu alam sekitar dan kesihatan yang terlibat ditumpukan. Teknik penilaian kualiti dan produktiviti pembuatan perabot melalui kajian kes dilaksanakan

*This course encompasses the background of Malaysian and global furniture industries. Principles and techniques of furniture design, furniture manufacturing processes, and the related environmental and health issues are emphasized. Assessment techniques on quality and productivity through case studies are conducted*

FHH3209 Aplikasi Komputer Dalam Reka Bentuk Produk Kayu/ *Computer Application in Wood Product Design* 3 (1+2)

Prasyarat : Tiada

Kursus ini merangkumi berkenaan konsep rekabentuk dalam merekabentuk produk kayu. Kemahiran dalam penggunaan perisian rekabentuk ditumpukan. Teknik penilaian dan interpretasi hasil model rekabentuk kayu didedahkan.

*This course encompasses the concept of design concept and the application of software in designing wood products. Skills of using software for designing are emphasized. Evaluation of the design and the interpretation of the models are exposed*

FHH3210 Biojisim Dan Biotenaga/ *Biomass and Bioenergy* 3 (2+1)

Prasyarat : Tiada

Kursus ini merangkumi jenis biojisim sebagai sumber biotenaga. Penghasilan biotenaga dalam bentuk pepejal, cecair dan gas melalui proses biokimia didedahkan. Aspek ekonomi, dasar pembangunan dan penggunaan biotenaga dibincangkan.

*This course introduces student to various types of biomass as source of bioenergy. Production of bioenergy in the form of solid, liquid and gas using biochemical processes are exposed. Students Economic aspect, development and utilization policy of bioenergy are discussed*

FHH3230 Kualiti Dan Hasil Kayu/ *Wood Quality and Products* 3 (2+1)

Prasyarat : Tiada

Kursus ini merangkumi pengetahuan asas tentang kayu hutan ladang dan penggunaannya. Struktur dan sifat kayu serta kaedah untuk meningkatkan mutu kayu ditekankan. Kesan dan pengaruh penanaman semula termasuk kaedah pemangkasan, pemilihan dan pengeluaran balak ke atas kualiti kayu dibincangkan

*This course encompasses the basic knowledge about forest plantation woods and its utilization. Wood structure and properties as well as methods to improve wood quality are emphasized. Impact and effects of replanting including pruning, selection and production of quality timbers are discussed*

FHH3305 Analisis Kewangan Industri Hasil Hutan/ *Financial Analysis of Forest Products Industries* 3 (3+0)

Prasyarat : Tiada

Kursus ini merangkumi konsep dan prinsip asas pengurusan kewangan. Pengajaran menumpu

kepada pemahaman serta penggunaan alatan analitikal yang bersesuaian dalam membuat analisis dan keputusan kewangan dalam industri hasil hutan. Pelajar juga diberi peluang menganalisis penyata kewangan sebenar firma industri hasil hutan

*This course covers the basic concepts and principles of financial management. Teaching focuses on understanding and use of analytical tools in analysing and making financial decision in the forest products industries. Students are also given the opportunity to analyze actual financial statements of forest products industry firm*

FHH3307 Ergonomik Hutan/ *Forest Ergonomics* 3 (2+1)

Prasyarat : Tiada

Kursus ini merangkumi isu berkaitan ergonomik yang dihadapi oleh pekerja di bidang perhutanan dan industri perkayuan. Aplikasi teori dan kaedah ergonomik dalam sektor perhutanan dijalankan. Susun atur tempat kerja, faktor manusia dan aspek kesihatan dan keselamatan pekerja dibincangkan

*This course encompasses ergonomic issues faced by workers in forestry and wood industry sectors. Application of ergonomics theory and method in forestry sector are conducted. Workplace layout, human factors and aspects of health and safety of worker are discussed*

FHH4201 Teknologi Penglitup dan Kemasiapan Kayu/ *Wood Coating and Finishing Technology* 3 (2+1)

Prasyarat : Tiada

Kursus ini merangkumi pelbagai jenis penglitup dan laminasi permukaan produk kayu. Pemilihan teknik salutan mengikut jenis produk dan peralatan yang digunakan dalam proses kemasiapan ditumpukan. Kecacatan kemas dan cara pemulihan dibincangkan

*This course encompasses various types of coating and surface lamination of wood products. Selection of coating technique according to types of wood products and equipment used in finishing process are emphasized. Finishing defects and remedial measures are discussed*

FHH4202 Penambahbaikan Mutu Kayu/ *Wood Quality Improvement* 3 (2+1)

Prasyarat : Tiada

Kursus ini merangkumi kelemahan kayu sebagai bahan mentah dan faktor yang mempengaruhinya. Prinsip dan kaedah rawatan untuk meningkatkan mutu kayu, serta penilaian prestasi ke atas kayu terawat ditumpukan. Perkembangan terkini dalam peningkatan mutu kayu dibincangkan

*This course encompasses the disadvantages of wood as raw material and factors which influences its quality. Principles and methods of treatments to enhance wood quality, and analyse the performance of the treated wood are emphasized. Latest development on wood quality enhancement are discussed*

FHH4203 Biokomposit Termaju/ *Advanced Biocomposite* 3 (2+1)

Prasyarat : Tiada

Kursus ini merangkumi teknik dan pemrosesan pelbagai jenis biokomposit termaju berdasarkan aplikasi akhir yang bersesuaian. Kepelbagaian gentian (semulajadi dan sintetik), jenis pengikat (resin dan matrik) dan alat pemrosesan ditekankan. Penilaian sifat fizik dan mekanik, kecacatan pembuatan serta kawalan kualiti dibincangkan

*This course encompasses various technique and processes of advanced biocomposites based on suitable end applications. Variability of fibers (natural and synthetic), type of binders (resin and matrix) and processing equipment are emphasized. Evaluation of physical and mechanical properties, manufacturing defects as well as quality control are discussed*

FHH4301      Pencemaran Dan Kawalan Dalam Industri Hutan/ *Pollution and Control in Forest Industries*      3 (3+0)

Prasyarat : Tiada

Kursus ini merangkumi jenis pencemaran dalam industri hulu dan hiliran hutan. Kaedah rawatan yang sesuai dalam menangani masalah, kadar pencemaran dan rawatan yang digunakan dalam industri hutan ditekankan. Isu pencemaran dan kepentingan keselamatan dan kesihatan dalam industri berasas kayu dibincangkan

*This course encompasses the types of pollution associated with upstream and downstream forest industries. Treatment methods that used in forest industries are emphasized. Pollution issues and importance of safety and health in the wood-based industries are discussed*

FHH4302      Sistem Pengawalan Mutu Pemprosesan Kayu/ *Wood Processing Quality Control System*      2 (1+1)

Prasyarat : Tiada

Kursus ini merangkumi pengurusan kualiti dalam industri produk kayu. Kualiti bahan mentah, proses pembuatan dan produk akhir ditumpukan. Kaedah kualiti pengurusan kualiti secara statistik dan kaedah pengawalan mutu yang digunakan dalam industri produk kayu dipraktikkan

*This course encompasses the quality management in the wood products industry. Quality of raw materials, manufacturing process and final products are emphasized. Aspects of statistical quality control and quality control method used in the wood products industry are practiced*

FHH4303      Pengurusan Dan Penggunaan Sisa Kayu/ *Wood Waste Management and Utilisation*      3 (2+1)

Prasyarat : Tiada

Kursus ini merangkumi pengelasan dan pengumpulan sisa kayu daripada industri perkayuan dan industri lain yang menggunakan bahan kayu. Konsep kitar semula dalam pembuatan pelbagai jenis produk berasaskan kayu ditekankan. Impak industri kitar semula terhadap bekalan kayu dan alam sekitar dibincangkan

*This course encompasses the classification and the collection of wood waste material wood industries and other wood using industries. Concept of recycle and fabricating various types of wood-based products are emphasized. Wood recycling industry impact towards wood supply and environment are discussed*

FHH4304      Pengurusan Industri Perhutanan/ *Forest Industry Management*      3 (3+0)

Prasyarat : Tiada

Kursus ini merangkumi prinsip serta aktiviti dalam mengurus sesebuah organisasi. Pengurusan sumber manusia, pengeluaran, pemasaran dan kewangan serta perkaitannya dengan pengurusan sesebuah organisasi dalam industri berasas kayu ditumpukan. Isu yang berkaitan dengan pengurusan industri berasas kayu di Malaysia dibincangkan.

*This course encompasses the principles and activities in managing an organization. Management of human resources, production, marketing and finance, and its relation to the management of an organization in the wood-based industry are emphasized. Issues related to the management of the wood-based industry in Malaysia are discussed*

FHH4305 Perdagangan Kayu Antarabangsa/ *International Timber Trade* 3 (3+0)

Prasyarat : Tiada

Kursus ini merangkumi sumber hutan dunia dan teori serta amalan perdagangan kayu antarabangsa. Permintaan, penawaran dan kaedah menganalisis perdagangan kayu antarabangsa ditekankan. Isu semasa berkaitan dengan perdagangan kayu tropika dibincangkan  
*This course encompasses the world forest resources and theory as well as practices in international timber trade. Supply, demand and analysis of international timber trade are emphasized. Current issues on tropical timber trade are discussed*

FHM3206 Sistem Maklumat Geografi dalam Perhutanan/ *Geographic Information System in Forestry* 3 (2+1)

Prasyarat : Tiada

Konsep asas sistem maklumat geografi (GIS) termasuk kaedah rekabentuk dan pembangunan pengkalan data, automasi, pemprosesan, penganalisan, pamarapan dan modeling data untuk menyokong proses membuat keputusan termasuk kajian kes sistem maklumat geografi dalam perhutanan.

*This course covers basic concepts of geographic information system (GIS) which include methods of design and data base development, automation, processing, analysis, display, and modelling of data to support decision making, including case studies of GIS in forestry*

FHM3107 Tanah Hutan/ *Forest Soil* 3 (2+1)

Prasyarat : Tiada

Kursus ini merangkumi topik sains tanah termasuk sifat kimia, fizikal dan biologi; pengecaman dan pengkelasan tanah, kesan aktiviti hutan terhadap ciri tanah serta indeks tapak

*This course covers topics in soil sciences including chemical, physical and biological properties, soil classification and identification, effects of forest activities on soil properties as well as site index*

FHM3211 Pemulihan Ekosistem/ *Ecosystem Restoration* 3 (2+1)

Prasyarat : Tiada

Kursus ini merangkumi konsep dan prinsip pemulihan ekosistem dan penilaian faktor yang menyebabkan kemerosotan ekosistem. Penilaian dan penggunaan kaedah bagi pemulihan pelbagai ekosistem yang rosak.

*This course covers the concepts and principles of ecosystem restoration and evaluation of factors affecting ecosystem degradation. Assessment and application of methods to restore several ecosystem*

FHS4903 Latihan Industri/ *Industrial Training* 8 (0+8)

Prasyarat : Tiada

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

*In this course, students are 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*

<p>FHS4904      Kem Perhutanan/ <i>Forestry Camp</i></p> <p>Prasyarat : Tiada</p> <p>Kursus ini meliputi pendedahan awal kepada pelajar berkenaan kepentingan ekosistem hutan kepada masyarakat dan negara. Pelajar juga dilatih dengan pelbagai kemahiran perhutanan di lapangan, di samping membentuk sahsiah dan nilai dalam diri pelajar.</p> <p><i>This course covers early exposure to the students on the importance of forest ecosystem towards the society and nation. Students are also trained with various forestry skills in the field, as well as developing students' character and values</i></p>	<p>2 (0+2)</p>
<p>FHS4959A/FHS4959B      Disertasi Bachelo/ <i>Bachelor Dissertation</i></p> <p>Prasyarat : Tiada</p> <p>Kursus ini merangkumi 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</p> <p><i>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</i></p>	<p>6 (0+6)</p>
<p>FHH4305      Perdagangan Kayu Antarabangsa / <i>International Timber Trade</i></p> <p>Prasyarat : Tiada</p> <p>Kursus ini merangkumi sumber hutan dunia dan teori serta amalan perdagangan kayu antarabangsa. Isu semasa berkaitan dengan perdagangan kayu tropika turut dibincangkan.</p> <p><i>This course covers world forest resources and theory as well as practices in international timber trade. Current issues on tropical timber trade are also discussed</i></p>	<p>3 (3+0)</p>

## **Jabatan Pengurusan Hutan/ Department Of Forest Management**

FHM3202 Sukatan Hutan/ *Forest Mensuration*

3 (2+1)

Prasyarat : Tiada

Kursus ini merangkumi prinsip pengukuran dan pengukuran pokok, dengan memberi penekanan kepada perkaitan antara , penaksiran dan pembolehubah pokok dan dirian hutan., Pertambahan dan pertumbuhan hasil, indeks tapak, stok, kepadatan dirian, termasuk perancangan dan pelaksanaan inventori sumber hutan berdasarkan teknik pensampelan yang digunakan di Malaysia turut dibincangkan.

*This course covers the principles of measurement and tree measurement with emphasis on relationship between assessment and tree and stand variables. Growth and yield increment, site index, stocking, stand density including planning and conducting forest resource inventory according to sampling techniques used in Malaysia are also discussed*

FHM3112 Kaedah Kuantitatif Dalam Perhutanan/ *Quantitative Methods in Forestry* 4 (3+1)

Prasyarat : Tiada

Kursus ini merangkumi pemerihalan dan analisis data parametrik dan bukan parametrik dalam perhutanan. Penekanan diberikan kepada pola pembolehubah rawak dan taburan umum parametrik. Teknik pensampelan, rekabentuk ujikaji, ralat ujikaji, korelasi dan regresi linear dibincangkan.

*This course covers parametric and non-parametric of data description and analyses in forestry. The pattern of random variables and some common distributions of parameters are emphasized. Sampling techniques, experimental designs, experimental errors, correlations and linear regression are discussed*

FHM3101 Sains Perhutanan/ *Forest Science*

3 (3+0)

Prasyarat : Tiada

Kursus ini merangkumi prinsip asas sains perhutanan dan kepentingannya. Jenis, ekosistem dan pengurusan hutan, serta industri perhutanan ditumpukan. Isu perhutanan semasa di peringkat tempatan dan global dibincangkan

*This course encompasses the basic principles of forest science and its importance. Forest types, ecosystem, and management, as well as forest industries are emphasized. Forestry issues at the local and global levels are discussed*

FHM3102 Botani Hutan/ *Forest Botany*

3 (2+1)

Prasyarat : Tiada

Kursus ini merangkumi dendrologi dalam perhutanan dan taksonomi tumbuhan. Morfologi untuk pengecaman tumbuhan Gimnosperma dan Angiosperma ditumpukan. Nilai kepelbagaian tumbuhan dan habitatnya dibincangkan

*This course encompasses dendrology in forestry and plant taxonomy. Morphological characters for identification of Gymnosperm and Angiosperm are emphasized. Value of diversities of plants and its habitats are discussed*

FHM3103 Dendrologi Dipterokarpa/ *Dendrology of Dipterocarps* 2 (1+1)

Prasyarat : Tiada

Kursus ini membincangkan dendrologi famili Dipterocarpaceae. Penekanan diberikan kepada tatanama moden, habitat tumbuhan, kekunci pengecaman, petunjuk botani dan pengumpulan spesimen herbarium. Huraian genus dan spesis dipterokarpa serta kepentingannya dalam perhutanan dibincangkan.

*This course discuss on the dendrology of family Dipterocarpaceae. Emphasizes are on modern nomenclature, plant habitats, keys identification, botanical indicators and collection of herbarium specimens. Description on genera and species for dipterocarps and its importance in forestry is discussed*

FHM3104 Dendrologi Bukan Dipterokarpa/ *Dendrology of Non-Dipterocarps* 2 (1+1)

Prasyarat : Tiada

Kursus ini membincangkan dendrologi famili bukan Dipterokarpa. Penekanan diberikan kepada tatanama moden, habitat tumbuhan, kekunci pengecaman, petunjuk botani dan pengumpulan spesimen herbarium. Huraian famili dan genus bukan dipterokarpa serta kepentingannya dalam perhutanan dibincangkan

*This course discuss on the dendrology of family non-Dipterocarps. Emphasizes are on modern nomenclature, plant habitats, keys identification, botanical indicators and collection of herbarium specimens. Description on family and genera for non-dipterocarps and its importance in forestry is discussed*

FHM3108 Entomologi Hutan/ *Forest Entomology* 2 (1+1)

Prasyarat : Tiada

Kursus ini merangkumi kaedah mengenal pasti dan pengelasan serangga hutan terpilih. Pelajar dapat memahami ekologi, biologi dan kepentingan serangga berkaitan dengan pokok hutan asli, hutan ladang dan hutan bandar. Penelitian kaedah diagnosis, persampelan dan pengawalan serangga perosak pokok berasaskan kepada prinsip pengurusan serangga perosak bersepadu ditekankan

*This course encompasses the identification and classification of selected forest insects. Students will understand the ecology, biology and importance of insects associated with natural forest, plantation and urban forest. Methods of diagnosing, sampling and tree insect pest control based on insect pest management principles are emphasized*

FHM3109 Patologi Hutan/ *Forest Pathology* 2 (1+1)

Prasyarat : Tiada

Kursus ini merangkumi konsep penyakit pokok, simptom dan tanda penyakit. Penekanan diberi kepada faktor di dalam pembentukan penyakit, diagnosis penyakit, pengelasan kulat patogen, biologi patogen yang penting, dan patogenesis. Hubung kait hos dan patogen, mekanisme pertahanan dan kaedah pengawalan bagi penyakit pokok hutan juga dibincangkan

*This course covers plant disease concept, disease symptoms and signs. Emphasis is given on factors in disease formation, disease diagnosis, classification of fungal pathogen, biology of important pathogens and pathogenesis. Host and pathogen interaction, defense mechanism, and control methods for forest tree diseases are also discussed*

FHM3110 Ekonomi Perhutanan/ *Forestry Economics* 3 (3+0)

Prasyarat : Tiada

Kursus ini merangkumi konsep dan teori dalam ekonomi perhutanan. Ini termasuklah struktur pasaran, ekonomi pengeluaran, permintaan dan penawaran barangan perkhidmatan hutan.



Penekanan diberikan kepada penilaian ekonomi sumber hutan dan bayaran ke atas perkhidmatan ekosistem (PES). Analisis pelaburan projek perhutanan, serta peranan sektor perhutanan dalam pembangunan ekonomi dibincangkan

*This course covers concepts and theories in forest economic. These include of market structure, production economics, demand and supply of forest goods and services. Economic valuation of forest resources and payment for ecosystem services (PES) are emphasized. Investment analysis of forestry projects, and the role of forestry sector in national economic development are discussed*

FHM3111 Kebakaran Hutan/ *Forest Fire*

3 (3+0)

Prasyarat : Tiada

Kursus ini meliputi konsep kebakaran hutan, jenis hutan mudah terbakar, implikasi terhadap pengurusan hutan, kaedah mengelak, mengawal dan melawannya dan pengaruh cuaca dan sosial

*This course covers the concept of forest fire, forests vulnerable to fire, forest management implications, methods for preventing, controlling and fire fighting as well as weather and social influences*

FHM3201 Survei Hutan/ *Forest Survey*

3 (2+1)

Prasyarat : Tiada

Kursus ini merangkumi prinsip asas survei hutan, teknik ukuran linear dan sudut yang digunakan dalam perhutanan. Kandungan kursus termasuk kaedah pengukuran kawasan hutan dan penyediaan pelan. Teknik pengiraan ketepatan data dan pembetulan yang bersesuaian dibincangkan

*This course covers the basic principles of forest survey, technique of linear and angular measurements which are applied in forestry. The content of this course includes methods of forest area measurement and plan preparation. Calculation technique for data accuracy and appropriate corrections are discussed*

FHM3203 Sivikultur Hutan/ *Forest Silviculture*

3 (2+1)

Prasyarat : Tiada

Kursus ini merangkumi konsep dan teori silvikultur, system silvikultur am yang diamalkan dalam perhutanan tropika. Penekanan diberikan kepada perkembangan sistem silvikultur di Malaysia termasuk sistem dan kaedah terkini. Diantara aspek yang dibincangkan adalah pengenalan dan penubuhan lading hutan serta rawatan silvikultur yang bersesuaian

*This course encompasses the concepts and theory of silviculture, general silvicultural systems practiced in tropical forest.,Emphasized is given to the development of silviculture system in Malaysia that includes the current systems and methods. Aspects of introduction and establishment of forest plantation as well as appropriate silviculture treatments are discussed*

FHM3204 Kejuruteraan Hutan/ *Forest Engineering*

3 (2+1)

Prasyarat : Tiada

Kursus ini merangkumi kejuruteraan hutan, sains bahan binaan, penganalisaan kestabilan tebing dan dinding penahan, torque, rimpul, jentera perhutanan terpilih serta ekonomi kejuruteraan hutan yang merangkumi kos mesin dan penggantian termasuk penilaian kos alternatif

*This course encompasses forest engineering, building material science, analysis of slope stability and retaining wall, torque, rimpull, selected forest machinery as well as economics of forest engineering including costs of machinery and replacement,including evaluation of alternative costs*

- FHM3205 Penuaian Hutan/ *Forest Harvesting* 3 (2+1)
- Prasyarat : Tiada
- Kursus ini meliputi konsep, sistem, teknik dan proses penuaian hutan termasuk menganalisa kadar pengeluaran, kos penuaian, pengawalan kos pengeluaran balak serta penyediaan pelan penuaian hutan.
- This course covers forest harvesting concept, system, technique and process of forest harvesting including analysis of production rate, cost of forest harvesting, control of logging production cost as well as development of forest harvesting plans*
- FHM3206 Sistem Maklumat Geografi Dalam Perhutanan/ *Geographic Information System in Forestry* 3 (2+1)
- Prasyarat : Tiada
- Kursus ini merangkumi konsep asas sistem maklumat geografi (GIS). Kandungan kursus termasuk kaedah reka bentuk dan pembangunan pengkalan data, automasi, pemprosesan, analisis, paparan dan pemodelan data. Ia penting untuk menyokong proses membuat keputusan, termasuk kajian kes system maklumat geografi dalam perhutanan
- This course covers basic concepts of geographic information system (GIS). The content of this course includes method of design and data base development, automation, processing, analysis, display, and modelling of data. It is to support decision making, including case studies of GIS in forestry*
- FHM3208 Pembaikbiak Pokok/ *Tree Improvement* 3 (2+1)
- Prasyarat : Tiada
- Kursus ini merangkumi prinsip dan kaedah pembaikbiakan pokok hutan asli dan hutan ladang untuk pengurusan serta pengeluaran mampan stok tanaman berkualiti. Kepentingan dan kegunaan variasi genetik melalui genetik Mendel, genetik kuantitatif, keseimbangan Hardy-Weinberg, pemilihan spesis dan ujian provenans, pembiakan tampang, ujian progeni, dirian biji benih, kebun biji benih dan strategi pembiakan yang efisien akan dibincangkan. Kursus ini akan menumpukan kepada kecekapan penggunaan sumber dan penggunaan teknik pembiakan yang sesuai dalam pembaikbiak pokok
- The course covers the principles and methods of tree improvement of natural and planted forest for sustainable management and production of quality planting stock. The application and importance of genetic variations through Mendelian genetics, quantitative genetics, Hardy-Weinberg equilibrium, species selection, provenance trial, vegetative propagation, progeny trial, seed production area, seed orchard and efficient breeding strategy will be discussed. This course focuses in resource use efficiency and the application of appropriate techniques for tree improvement program*
- FHM3209 Arborikultur/ *Arboriculture* 3 (2+1)
- Prasyarat : Tiada
- Kursus ini mendedahkan kepada teori dan konsep arborikultur terutamanya pengurusan dan penyelenggaraan pokok di kawasan bandar. Konsep asas biologi dan fisiologi pokok, pemilihan tapak dan spesies, penanaman dan pemangkasan, kesihatan dan penyakit pokok dibincangkan. Aspek profesionalisme dalam pengurusan pokok bandar melalui amalan terbaik dan pensijilan arboris ditekankan
- This course covers the theory and concept of arboriculture especially on the management and maintenance of trees in urban areas. Basic concept of tree biology and physiology, site and species selection, tree planting and pruning, tree health and diseases are discussed. Professionalism aspect in urban tree management through best practices and arborist certification are emphasized*

FHM3210 Etnobotani/ *Ethnobotany*

3 (2+1)

Prasyarat : Tiada

Kursus ini merangkumi konsep asas etnobotani dari segi sejarah dan budaya terhadap manusia. Tajuk yang dibincangkan meliputi kepentingan budaya sebagai perantara dalam penggunaan tumbuhan oleh manusia, peranan tumbuhan liar dan tumbuhan yang telah didomestikasi dalam evolusi manusia, isu semasa etnobotani di peringkat global dan kebergantungan manusia terhadap tumbuhan. Penilaian ke atas impak tumbuhan terhadap aspek ekonomi dan sosial masyarakat setempat

*This course covers the basic concept of ethnobotany in terms of its historical and cultural contribution to human. Topics covered include the importance of culture in mediating the use of plants amongst people, the role of wild and plants in domesticated human evolution, current global issues in ethnobotany, and human dependency on plants. Evaluation on the impact of plants to social and economic aspects of local communities*

FHM3211 Pemulihan Ekosistem/ *Ecosystem Restoration*

3 (2+1)

Prasyarat : Tiada

Kursus ini merangkumi konsep dan prinsip pemulihan ekosistem dan penilaian faktor yang menyebabkan kemerosotan ekosistem hutan. Penilaian dan penggunaan kaedah bagi pemulihan pelbagai ekosistem berhutan yang rosak

*This course covers the concepts and principles of ecosystem restoration and evaluation of factors affecting forest ecosystem degradation. Assessment and application of methods to restore several forest ecosystems*

FHM3212 Kaedah Pensampelan Hidupan Liar/ *Wildlife Sampling Methods*

3 (2+1)

Prasyarat : Tiada

Kursus ini merangkumi konsep dan kaedah pensampelan, analisis dan interpretasi data hidupan liar di kawasan tropika. Kaedah pensampelan secara langsung dan tidak langsung, penilaian kualiti habitat dan pembolehubah berunsurkan keadaan persekitaran yang berkaitan dengan kehadiran dan kelimpahan hidupan liar akan ditekankan. Pengaruh vegetasi dan faktor persekitaran terhadap taburan hidupan liar ditekankan

*This course covers sampling concepts and methodology, data analysis and interpretation in the tropical regions. Direct and indirect sampling methods according to different animal groups, assessment of habitat quality and environmental variables associated with wildlife presence and abundance are emphasized. Vegetation and environmental factor on wildlife distribution are emphasized*

FHM3213 Perhutanan Tani/ *Agroforestry*

3 (2+1)

Prasyarat : Tiada

Kursus ini memperkenalkan prinsip dan amalan perhutanan tani di kawasan tropika. Pengajaran akan memfokuskan kepada jenis amalan perhutanan tani, interaksi sistem perhutanan tani dengan alam sekitar dan sosial. Analisa ekonomi digunakan untuk menentukan hasil pulangan yang positif terhadap sistem perhutanan tani yang diamalkan

*This course introduces principle of tropical agroforestry system in tropic. The teaching focuses on appropriate systems and the interactions of the agroforestry system with the environment and social. Economic analysis is used to assess the positive return of the agroforestry system*



*techniques, and cutting cycle in forest plantation are discussed*

FHM3218 Penghasilan Bahan Tanaman Hutan Ladang/ *Planting Material Production for Forest Plantation* 3 (2+1)

Prasyarat : Tiada

Kursus ini merangkumi pelbagai kaedah biologi dalam menghasilkan bahan tanaman ladang hutan. Ini termasuklah pembiakan semula jadi tumbuhan, kultur tisu, pemilihan genetik, DNA rekombinan dan tumbuhan transgenik. Penekanan diberikan dalam menghasilkan produk yang berkualiti bagi mencapai matlamat operasi ladang hutan.

*The course comprises various techniques in producing plant material for forest plantations. These includes natural breeding, tissue culture, genetic selection, DNA recombinant and transgenic plant. Emphasis is given in producing a quality product to achieve the operational goals of forest plantations*

FHM3302 Pengurusan Hutan Bandar/ *Urban Forest Management* 3 (2+1)

Prasyarat : Tiada

Kursus ini merangkumi konsep, fungsi dan faedah perhutanan bandar. Penekanan diberi kepada penggunaan prinsip arborikultur dan perancangan kawasan hijau dalam pengurusan hutan bandar. Pemilihan spesies dan tapak, penanaman, penjagaan dan senggaraan pokok dibincangkan.

*This course covers the concept, function and benefit of urban forestry. Arboriculture principles and green space planning in urban forest management are emphasized. Species and site matching, planting, tree care and maintenance are discussed*

FHM3304 Pengurusan Hutan Ladang/ *Forest Plantation Management* 3 (2+1)

Prasyarat : Tiada

Kursus ini merangkumi penubuhan dan pengurusan tapak semeaian sehingga tempoh kematangan hutan ladang. Penekanan diberikan kepada aktiviti hutan ladang termasuklah pengurusan sumber biji benih, penyediaan tapak, penanaman, jarak tanaman, pembajaan, perlindungan, penjarangan, pemangkasan dan giliran. Isu dan amalan baik dalam pengurusan hutan ladang

*This course encompasses the establishment and nursery management until maturity of forest plantation. Activities of forest plantation includes management of seed sources, site preparation, planting, enspacement, fertilization, protection, thinning, pruning and rotation are emphasized. Issues and good practices in forest plantation management are covered*

FHM3306 Undang-Undang Dalam Perhutanan/ *Laws in Forestry* 3 (3+0)

Prasyarat : Tiada

Kursus ini merangkumi peruntukan undang-undang dalam sektor perhutanan termasuk undang-undang berkaitan sumber semula jadi, alam sekitar, hidupan liar, taman negara dan air serta industri hiliran. Perbezaan undang-undang di negeri-negeri berkaitan akan ditekankan. Penggunaan undang-undang dalam menangani masalah pengurusan hutan semasa dibincangkan

*This course encompasses provisions of laws in forestry sectors including natural resource, environment, wildlife, national parks, water and upstream industries. Differences between related state laws are emphasized. Application of laws to solve current forest management are discussed*

FHM3307 Penyelenggaraan Dan Pengurusan Tapak Semaian/ *Nursery Management and Maintenance* 2 (1+1)

Prasyarat : Tiada

Kursus ini membincangkan asas penubuhan tapak semaian mengikut amalan baik bagi tujuan pemuliharaan dan perniagaan. Penekanan diberi kepada teknik penubuhan tapak semaian, penyelenggaraan tumbuhan dan infrastruktur tapak semaian. Teknik menghasilkan stok tanaman dan pemasaran tumbuhan dibincangkan

*This course discusses basic of nursery establishment based on good practices for conservation and business purposes. Emphasized are given on nursery establishment techniques, plant and infrastructure maintenance. Plant propagation techniques and plant marketing are discussed*

FHM3308 Pengurusan Kebakaran Dalam Ladang Hutan/ *Fire Management in Forest Plantations* 2 (1+1)

Prasyarat : Tiada

Kursus ini meliputi konsep dan punca kebakaran ladang hutan. Ia menghuraikan kesan kebakaran kepada tanah, tumbuhan dan hidupan liar. Pelajar didedahkan kepada Fire Danger Rating System untuk Asia Tenggara dan aplikasinya dalam pengurusan kebakaran ladang hutan

*This course covers the concept and causes of fire in forest plantations. It explains effects of forest fire on soil, plants and wildlife. Students are exposed to Fire Danger Rating System for Southeast Asia and it's application in the management of fire in forest plantations*

FHM3309 Pensijilan Ladang Hutan/ *Forest Plantation Certification* 2 (1+1)

Prasyarat : Tiada

Kursus ini memberikan satu gambaran mengenai tujuan dan keperluan Kriteria dan Petunjuk Bagi Pensijilan Pengurusan Ladang Hutan Malaysia (MC&I Forest Plantations). Ia menerangkan pemahaman dan pentafsiran 10 prinsip and 55 kriteria MC&I Forest Plantations. Peranan badan pentabdir national dalam membangunkan standard pensijilan dan proses pensijilan lain dikaji

*This course provides an overview of the purpose and requirements of the Malaysian Criteria and Indicators for Forest Plantation Management Certification (MC&I Forest Plantations). It explains on the understanding and interpretation of the 10 principles and 55 criteria of MC&I Forest Plantations. Role of national governing body in developing certification standards and other certification processes are studied*

FHM3310 Pengurusan Bersepadu Perosak Hutan Bandar/ *Integrated Pest Management of Urban Forests* 3 (2+1)

Prasyarat : Tiada

Kursus ini membincangkan identifikasi dan klasifikasi perosak, serangga dan biologi, habitat dan kepentingannya di hutan bandar. Penekanan diberikan kepada pengurusan dengan penggunaan teknik kawalan perosak secara integrasi. Teknik pengawalan dan pengurusan dilapangan dibincangkan.

*This course discusses on the identification and classification of selected pests, insects and their biology, habitat and importance in urban forestry. The utilization and integration of pest control tactics for management of insects and pathogens are emphasized. Control technique and management in field are discussed*

FHM3311 Pengurusan Kesihatan Pokok Hutan Bandar/ *Urban Tree Health Management* 2 (1+1)

Prasyarat : Tiada

Kursus ini membincangkan ejen dan penyebab kepada penyakit pokok hutan bandar. Penekanan

diberikan dalam mengenalpasti penyakit pokok palma, pokok renek, pokok teduhan dan tumbuhan hiasan di hutan bandar. Kaedah pengawalan penyakit pokok hutan bandar dibincangkan

*This course discusses agent and causes of urban forest tree diseases. Emphasized are given in identifying diseases of palms, shrubs, and shade trees and ornamental plants in urban forest. Controlling methods of urban tree diseases are discussed*

FHM4101 Biodiversiti dan Pemuliharaan/ *Biodiversity and Conservation* 3 (2+1)

Prasyarat : Tiada

Kursus ini merangkumi teori dan prinsip dalam skop biodiversiti dan pemuliharaan termasuk definisi, aras biodiversiti, definisi spesies, habitat, ekosistem dan kepentingan biodiversiti. Penekanan diberikan pada teknik pengukuran, penilaian dan pemantauan biodiversiti bagi tujuan pemuliharaan. Isu semasa, dasar biodiversiti kebangsaan, pengurusan dan mekanisme dalam pemuliharaan biodiversiti

*This course encompasses theory and principle in biodiversity and conservation that includes definition, level in biodiversity, definition of species, habitat, ecosystems and importance of biodiversity. Emphasis is given on measuring technique, assessment and biodiversity monitoring for conservation. Current issues, national biodiversity policy, management and mechanism for biodiversity conservation are covered*

FHM4102 Ekologi Komuniti Hidupan Liar/ *Wildlife Community Ecology* 3 (3+0)

Prasyarat : Tiada

Kursus ini merangkumi konsep dan teori berkaitan dengan struktur dan dinamik komuniti hidupan liar terestrial. Penekanan diberi ke atas konsep komuniti, interaksi ekologi dan kestabilan populasi. Teori dan model yang berkaitan dengan dinamik ruang, pemilihan habitat dan jaringan makanan dalam komuniti hidupan liar ditekankan

*This course covers concepts and theories related to the structure and dynamics of terrestrial wildlife communities. Community concept, ecological interactions and population stability are emphasized. Theory and model related to space dynamic, habitat selection, food web in wildlife community are emphasized*

FHM4103 Ekologi Perilaku Hidupan Liar/ *Wildlife Behavioural Ecology* 3 (2+1)

Prasyarat : Tiada

Kursus ini merangkumi teori dan konsep asas dalam ekologi perilaku hidupan liar. Ini termasuk mekanisma perilaku hidupan liar yang berkaitan seperti kemandirian, komunikasi, persaingan sumber, mangsa pemangsa dan pergerakan dan keperluan dari segi ruang. Aplikasi ekologi perilaku dalam konservasi hidupan liar ditekankan

*This course covers the theory and fundamental concepts in behavioral ecology of wildlife. It includes mechanisms of wildlife behavior in relation to survival, communication, resource competition, prey and predator, and movement, and space necessity. The applications of behavioral ecology in wildlife conservation are emphasized*

FHM4201 Penderiaan Jauh Dalam Perhutanan/ *Remote Sensing in Forestry* 3 (2+1)

Prasyarat : Tiada

Kursus ini memperkenalkan kepada pelajar teori asas penderiaan jauh dan prinsip asas pemprosesan imej satelit. Pengajaran akan memfokus kepada penggunaan perisian pemprosesan imej yang bersesuaian dengan aktiviti perhutanan. Pelajar akan diberi peluang untuk menganalisis data lapangan

*This course introduces students to basic theory on remote sensing and basic principles of satellite image processing. The teaching focuses on appropriate used image processing*

software. The student will be given the opportunity to analyze field data

FHM4202 Penilaian Ekonomi Sumber Hutan Dan Biodiversiti/ *Economic Valuation of Forest Resource and Biodiversity* 3 (2+1)

Prasyarat : Tiada

Kursus ini merangkumi konsep asas dan kaedah dalam menjalankan penilaian ekonomi sumber hutan dan biodiversiti. Penekanan diberikan ke atas pembangunan mampan, kepentingan sumber hutan dan biodiversiti, masalah berkaitan dengan nyah hutan, konsep dan teori utiliti dan ekonomi kebajikan, jenis-jenis nilai ekonomi, pendekatan penilaian ekonomi, langkah terlibat dan kaedah penilaian ekonomi, perakaunan sumber hutan dan aplikasi penilaian ekonomi dalam perhutanan. Kajian kes dalam penilaian ekonomi sumber hutan dan biodiversiti dibincangkan.

*This course covers the basic concepts and methods in conducting economic valuation of forest and biological resources. Emphashzied are given on sustainable development, the importance of forest and biological resources, problems related to deforestation, concept and theory of utility and welfare economics, types of economic value, approaches in economic valuation, steps involved and methods of economic valuation, forest resource accounting and applications of economic valuation. Case studies in economic valuation of forest resources and biodiversity are covered*

FHM4203 Perhutanan Antarabangsa/ *International Forestry* 2 (2+0)

Prasyarat : Tiada

Kursus ini merangkumi status, klasifikasi hutan dunia dan isu semasa global berkaitan dengan sektor perhutanan. Perbincangan berkisar kepada organisasi perhutanan global dan nasional dan perjanjian antarabangsa serta kaitannya dengan pengurusan hutan

*This course covers status, classification of forest and current global issues related to forestry sectors. Discussion on global and national forestry organizations, and international treaty related to forest management*

FHM4204 Aplikasi Bioteknologi Dalam Perhutanan/ *Biotechnology Application in Forestry* 3 (2+1)

Prasyarat : Tiada

Kursus ini merangkumi teori dan amalan bioteknologi dalam bidang perhutanan termasuk biologi sel, genetik molekul, pengklonan gen, teknologi PCR, penjujukan DNA, kejuruteraan genetik, cap jari DNA dan forensik. Penumpuan diberikan kepada penggunaannya dalam pengurusan biodiversiti hutan, kepelbagaian genetik, perlindungan flora dan fauna terancam, serta kejuruteraan genetik spesies hutan ladang. Kursus ini juga menekankan kepada latihan kemahiran

*This course covers the theory and practice of biotechnology in the field of forestry including cell biology, molecular genetics, gene cloning, PCR technology, DNA sequencing, genetic engineering, DNA fingerprinting and forensic. It focuses on its application in the management of forest biodiversity, genetic heterogeneity, protection of endangered flora and fauna, and genetic engineering of plantation forest species. This course also emphasises on hands-on training*

FHM4205 Teknik Hidrologi Hutan/ *Forest Hidrology Technique* 3 (2+1)

Prasyarat : Tiada

Kursus ini memberi pendedahan tentang jenis-jenis peralatan dan cara pengukuran proses hidrologi asas. Penekanan diberikan kepada kawasan legeh yang merangkumi kajian mikro dan makro. Kaedah menganalisa data hidrologi dibincangkan

*This course gives exposure about equipment types and their measurement of basic hydrological processes. Emphasis is given to the watershed area including the micro and macro research.*



*Hydrological data analysis methods are covered*

FHM4206 Pengukuran Dan Pemantauan Karbon/ *Carbon Measurement and Monitoring* 3 (2+1)

Prasyarat : Tiada

Kursus ini merangkumi peranan hutan dengan perubahan iklim. Kerjasama antarabangsa oleh pelbagai pihak berkaitan untuk mengurangkan kesan perubahan iklim dunia dibincangkan. Penekanan diberikan keatas kaedah pengukuran dan pemantauan karbon di kawasan berhutan  
*This course encompasses the role of forests in climate change. International cooperation by various related agencies in reducing the impact of global climate change is discussed. Emphasized is given on methods in measurement and monitoring of carbon in the forested area*

FHM4207 Ekologi Perbandaran/ *Urban Ecology* 3 (2+1)

Prasyarat : Tiada

Kursus ini merangkumi teori, fungsi dan pelbagai komponen dalam skop ekologi perbandaran. Analisa interaksi antara komponen ekosistem perbandaran dan permasalahan yang terdapat dalam ekologi perbandaran ditekankan. Cadangan penyelesaian berkaitan permasalahan ekologi perbandaran dibincangkan  
*This course encompasses the theory, function and components functions in the scope of urban ecology. Interaction analysis between various components of urban ecosystem and issues in urban ecology are emphasized. Solutions to the problems relating to urban ecology are discussed*

FHM4301 Pengurusan Hutan Lanjutan/ *Advance Forest Management* 2 (1+1)

Prasyarat : Tiada

Kursus ini merangkumi prinsip perancangan pengurusan hutan dan penyediaan rancangan pengurusan hutan, termasuk kaedah dan teknik perancangan, pengaturcaraan matematik, simulasi, teori permainan dan analisis rangkaian  
*The course covers the principles of forest management planning and preparation for forest management plans, including methods and techniques of planning, mathematical programming, simulation, game theory as well as network analysis*

FHM4302 Konflik Manusia Dan Hidupan Liar/ *Human and Wildlife Conflicts* 3 (3+0)

Prasyarat : Tiada

Kursus ini merangkumi konsep pengurusan konflik dan peranan manusia dan hidupan liar. Pemahaman fungsi ekosistem dan keupayaan daya tampung sesuatu habitat ditekankan dalam penilaian konflik. Kaedah mitigasi untuk menangani konflik antara manusia dan hidupan liar ditekankan  
*This course covers concept of conflict management and roles of human and wildlife. The understanding of ecosystem functions and carrying capacity are emphasized in evaluating human and wildlife conflicts. Mitigation methods for solving human and wildlife conflicts are emphasized*

FHM4303 Pengurusan Risiko Dalam Hutan Bandar/ *Risk Management in Urban Forestry* 3 (2+1)

Prasyarat : Tiada

Kursus ini membincangkan tanggungjawab pengurus hutan bandar dalam menguruskan risiko yang berlaku. Penekanan diberikan kepada penyediaan dan penghuraian rancangan pengurusan risiko di hutan bandar termasuklah pertimbangan liabiliti, prinsip piawaian hutan bandar dan elemen kesihatan dan keselamatan. Pengurusan pokok bahaya, kesihatan dan keselamatan di

tempat kerja dan asas mencari dan menyelamatkan dibincangkan

*This course discusses the responsibility of urban forestry managers in managing risks. Emphasized are given to the preparation and presentation of risk management plan in urban forestry including liability assessment, standard and principle in urban forestry and health and security. Management of hazardous trees, health and security in workplace and search and rescue are discussed*

FHM4304 Pengurusan Konflik Dalam Ladang Hutan/ *Conflict Management in Forest Plantations* 3 (2+1)

Prasyarat : Tiada

Kursus ini merangkumi konsep pengurusan konflik serta peranan manusia dalam mengurus ladang hutan. Kursus ini memberi fokus kepada konflik manusia dengan hidupan liar di ladang hutan. Kaedah untuk menangani konflik antara manusia dan sumber hutan serta isu tuntutan tanah dibincangkan

*This course covers conflict management concept, roles of human in managing forest plantations. The course focuses on human conflicts to wildlife in forest plantation. Methods for dealing with conflicts between human and forest resources and land claims issues are discussed*

FHU3211 Pengurusan Kawasan Legeh/ *Watershed Management* 3 (2+1)

Prasyarat : Tiada

Kursus ini merangkumi masalah air dan langkah untuk mengatasinya, edaran hidrologi, kawasan tadahan hutan dan hubungannya dengan hujan, air tanah, pemelupuan, larian air, banjir dan hakisan tanah. Kaedah kawalan kuantiti dan kualiti air dalam pengurusan kawasan legeh serta Masalah sosial yang berkaitan.

*The course covers water problems and approaches to their solutions, hydrological cycle, water catchment area and its relation to rainfall, ground water, evapotranspiration, runoff, floods and soil erosion, control methods for water quality and quantity in watershed management as well as related social problems*

FHU4207 Perdagangan Kayu Antarabangsa/ *International Timber Trade* 3 (3+0)

Prasyarat : Tiada

Kursus ini merangkumi sumber hutan dunia dan teori serta amalan perdagangan kayu antarabangsa. Isu semasa berkaitan dengan perdagangan kayu tropika turut dibincangkan.

*This course covers world forest resources and theory as well as practices in international timber trade. Current issues on tropical timber trade are also discussed*

**Jabatan Rekreasi Dan Eko-Pelancongan/Recreation and Ecotourism Department**

FHR3101 Pengenalan Kepada Rekreasi Luar/*Introduction to Outdoor Recreation* 3 (2+1)

Prasyarat : Tiada

Kursus ini merangkumi konsep asas kesenggangan, rekreasi luar dan ekopelancongan. Hubungkait antara sumber, pengguna dan pengurusan rekreasi dibincangkan. Skop, pembangunan dan profesionalisme industri rekreasi dan ekopelancongan ditekankan.

*This course covers the basic concepts of leisure, outdoor recreation and ecotourism. The relationship between recreation resource, consumer and management are discussed. Scope, development and professionalisme in the recreation and ecotourism industry are emphasised.*

FHR3102 Ekologi Sumber Rekreasi/*Recreation Resource Ecology* 3 (2+1)

Prasyarat : Tiada

Kursus ini merangkumi impak oleh pengguna ke atas sumber dan ekosistem kawasan rekreasi. Kepentingan ukuran impak di dalam pengurusan sumber rekreasi dibincangkan. Kaedah pengurusan impak di kawasan rekreasi juga ditekankan

*This course covers the impacts of user towards the resources and ecosystem in recreational areas. The importance of impact measurement in recreational resources management is discussed. Methods on impact management at recreational areas are emphasised.*

FHR3201 Kemahiran Rekreasi Luar/*Outdoor Recreation Skills* 3 (1+2)

Prasyarat : Tiada

Kursus ini merangkumi teknik asas dalam mengendalikan aktiviti rekreasi luar. Perancangan dan pengurusan pengendalian aktiviti kemahiran rekreasi luar dibincangkan. Pelaksanaan aktiviti kemahiran rekreasi luar ditekankan

*This course covers the basic technique in handling outdoor recreation activities. Planning and management of outdoor recreational skills activities handling is discussed. Implementation of outdoor recreational activities are emphasised.*

FHR3202 Inventori Sumber Taman Dan Rekreasi/*Park and Recreation Resources Inventory* 3 (2+1)

Prasyarat : Tiada

Kursus ini merangkumi prinsip dan kaedah inventori sumber semula jadi. Penggunaan peralatan untuk inventori dibincangkan. Penggunaan teknik inventori, pengumpulan data dan menganalisa sumber taman dan rekreasi ditekankan.

*This course covers principles and methods of natural resources inventory. Utilisation of equipments for inventory is discussed. Application of inventory techniques, data collection and analysis of parks and recreation resource are emphasised*

FHR3203 Interpretasi Persekitaran/*Environmental Interpretation* 3 (2+1)

Prasyarat : Tiada

Kursus ini merangkumi teori dalam mengaplikasikan program interpretasi persekitaran. Demonstrasi teknik interpretasi terhadap kumpulan sasaran tertentu dibincangkan. Keberkesanan kaedah penyampaian interpretasi persekitaran melalui kemahiran komunikasi sehala ditekankan

*This course covers the theory in the application of environmental interpretation program. Demonstration of interpretational techniques towards specific target groups are discussed. The effectiveness of the delivery methods of environmental interpretation through one-way communication skills are emphasised*

FHR3204 Perancangan Rekreasi Luar/*Outdoor Recreation Planning* 3 (2+1)

Prasyarat : Tiada

Kursus ini merangkumi konsep perancangan di dalam pembangunan sumber rekreasi luar. Analisis untuk pembangunan pelan rekreasi luar dibincangkan. Kaedah penganggaran permintaan dan penawaran sumber rekreasi luar ditekankan.

*This course covers planning concept in developing outdoor recreation resource. Analysis for outdoor recreation development plan is discussed. Demand and supply estimation approaches in outdoor recreation resource are emphasised.*

FHR3205 Operasi dan Senggaraan Taman/*Park Operation and Maintenance* 2 (1+1)

Prasyarat : Tiada

Kursus ini merangkumi prinsip operasi dan teknik senggaraan taman. Kaedah penyelenggaraan taman melalui perancangan dibincangkan. Pendekatan dalam membina pelan operasi dan senggaraan taman ditekankan.

*This course covers the principles of park operation and maintenance. Method of park maintenance through planning is discussed. Approaches in developing park operation and maintenance plans are emphasised*

FHR3301 Pengurusan Risiko Dalam Rekreasi/*Risk Management in Recreation* 3 (2+1)

Prasyarat : Tiada

Kursus ini merangkumi prinsip pengurusan risiko bagi setiap aktiviti rekreasi dalam persekitaran taman. Kewujudan elemen risiko di dalam aktiviti rekreasi dibincangkan. Kepentingan pelan pengurusan risiko dalam pengendalian aktiviti rekreasi ditekankan.

*This course covers the principles of risk management for each recreation activity in a park setting. The existence of risk elements in recreational activities are discussed. The importance of risk management plans to control recreational activities are emphasised.*

FHR3503 Keusahawanan Dalam Taman Dan Rekreasi/*Entrepreneurship in Parks and Recreation* 3 (2+1)

Prasyarat : Tiada

Kursus ini merangkumi kepelbagaian peluang perniagaan dalam bidang pengurusan taman dan rekreasi. Penyediaan pelan perniagaan berdasarkan kehendak semasa pengguna taman dan rekreasi dilatih. Projek perniagaan berdasarkan pelan perniagaan yang telah dibangunkan dilaksanakan.

*This course encompasses the diversity of business opportunities in parks and recreation management. Preparation of business plan according to the current demands of users in parks and recreation is trained. Business project based on developed business plan is conducted*

FHR3302 Pemrograman Dan Kepemimpinan Rekreasi/*Recreation Programming and Leadership* 3 (2+1)

Prasyarat : Tiada

Kursus ini merangkumi konsep dan teknik kepemimpinan dalam merangka program rekreasi. Langkah dan teknik pemrograman aktiviti rekreasi dibincangkan. Pembangunan dan pelaksanaan program rekreasi bagi pelbagai kumpulan pengguna rekreasi ditekankan.

*This course covers the concept and technique of leadership in designing recreation program. Programming techniques and approaches of recreation activities are discussed. Development and implementation of recreation programs for various recreational user groups are emphasised.*

FHR3501 Perilaku Pengguna Rekreasi/*Recreational User Behaviour* 3 (3+0)

Prasyarat : Tiada

Kursus ini merangkumi konsep asas perilaku pengguna dalam rekreasi. Masalah perilaku pengguna di kawasan taman dan rekreasi dibincangkan. Teori perilaku pengguna melalui kajian kes ditekankan.

*This course covers the basic concept of consumer behaviour in recreation. Consumer behaviour problems in parks and recreation are discussed. The theory of consumer behaviour through case study is emphasised.*

FHR3502 Perancangan Dan Rekabentuk Tapak Kawasan Rekreasi/*Recreation Site Planning and Design* 3 (2+1)

Prasyarat : Tiada

Kursus ini merangkumi konsep rekabentuk dan kemudahan rekreasi di dalam persekitaran semula jadi. Langkah pelaksanaan pelan tapak rekreasi dan asas reka bentuk kemudahan rekreasi ditekankan.

*This course encompasses the design and recreational facilities concepts in a natural environment. The process of planning a recreation area and fundamental design of recreational are 173 emphasized*

FHR3504 Pengurusan Dan Operasi Prasarana Rekreasi/*Recreational Facilities Operation and Management* 3 (2+1)

Prasyarat : Tiada

Kursus ini merangkumi konsep pengurusan dan operasi kem berasaskan program rekreasi. Keperluan pelan pengurusan, pentadbiran dan operasi kem dibincangkan. Proses yang terlibat di dalam pengurusan kem berasaskan rekreasi luar ditekankan.

*This course covers concepts of management and operation of recreational based camp. The requirements of camp management, administration and operation are discussed. The processes involved in outdoor recreational camp are emphasised*

FHR3505 Pengurusan Hidupan Liar Dalam Rekreasi/*Wildlife Management in Recreation* 3 (2+1)

Prasyarat : Tiada

Kursus ini merangkumi konsep dan pengelasan hidupan liar. Pengurusan dan pemuliharaan hidupan liar dalam konteks rekreasi dibincangkan. Penggunaan kaedah konservasi hidupan liar di dalam mengorganisasi program rekreasi ditekankan.

*This course covers the concept and classification of wildlife. Management and conservation of wildlife in the context of recreation are discussed. The utilisation of wildlife conservational methods in organising recreational programme is emphasised*

FHR3506      Rekreasi Terapeutik Bagi Golongan Istimewa/*Therapeutic Recreation for Special People*      3 (2+1)

Prasyarat : Tiada

Kursus ini merangkumi prinsip terapeutik dalam pemrograman rekreasi bagi golongan istimewa. Keperluan kemahiran khusus mengendali program rekreasi terapeutik dibincangkan. Aplikasi bagi rekreasi terapeutik yang bersesuaian dengan golongan istimewa ditekankan.

*This course covers therapeutic principles in recreation programming for special group. The need for special skills in conducting therapeutic recreation programme is discussed. Applications of appropriate therapeutic recreation with special groups are emphasised.*

FHR3507      Hospitaliti Dalam Taman dan Rekreasi/*Hospitality in Parks and Recreation*)      3 (2+1)

Prasyarat : Tiada

Kursus ini merangkumi konsep hospitaliti di dalam persekitaran rekreasi. Kualiti perkhidmatan kepada pelbagai kumpulan pengguna rekreasi dibincangkan. Pelbagai prosedur dan aktiviti perkhidmatan hospitaliti ditekankan.

*This course covers the concept of hospitality in recreational setting. Service quality towards various recreational user is discussed. Various hospitality service procedures and activities are emphasised.*

FHR4301      Penilaian Sumber Rekreasi/*Recreation Resource Valuation*      4 (4+0)

Prasyarat : Tiada

Kursus ini merangkumi teori dan konsep asas ekonomi di dalam penilaian faedah dan kos daripada rekreasi dan ekopelancongan. Kesejahteraan individu dan masyarakat serta kemampuan alam semulajadi dibincangkan. Pembuatan keputusan penggunaan sumber rekreasi dengan mengaplikasi teknik penilaian sumber rekreasi dan ekopelancongan ditekankan

*This course covers the fundamental theory and concepts of economics in the valuation of the benefits and cost from recreation and ecotourism. Individual and community well-being along with environmental sustainability are discussed. Decision making towards recreational resource consumption by applying recreational and ecotourism valuation techniques is emphasised.*

FHR4302      Kaedah Penyelidikan Dalam Rekreasi Dan Ekopelancongan/*Research Method in Recreation and Ecotourism*      3 (3+0)

Prasyarat : Tiada

Kursus ini merangkumi kaedah penyelidikan dalam menyelesaikan masalah di dalam bidang rekreasi dan ekopelancongan. Pengajaran menekankan teknik-teknik persampelan, pengukuran dan prosedur statistik yang sesuai di dalam menyelesaikan masalah. Penentuan pendekatan rekabentuk penyelidikan yang sesuai di dalam sektor rekreasi dan ekopelancongan dibincangkan.

*This course covers research methods in solving problems in recreation and ecotourism field. The teaching emphasises on sampling techniques, measurements and suitable statistical procedure in problem solving. Determination of suitable approaches of research design in recreation and ecotourism is discussed.*

FHR4401 Pengurusan Taman Dan Rekreasi/Parks and Recreation Management 3 (3+0)

Prasyarat : Tiada

Kursus ini merangkumi prinsip dan amalan pentadbiran dan organisasi yang efektif di dalam bidang taman dan rekreasi. Hubungkait pentadbiran dan organisasi di dalam institusi awam dan swasta dibincangkan. Kajian kes mengenai dasar dan amalan organisasi taman dan rekreasi ditekankan

*This course covers the principles and practices of effective administration and organization in the field of parks and recreation. The relationships of administrative and organizational concepts in the public and private institutions are discussed. Case studies on policies and practices of parks and recreation organisations are emphasised*

FHR4402 Pengurusan Pelancongan Warisan Dan Komuniti/Heritage and Community Tourism Management 3 (2+1)

Prasyarat : Tiada

Kursus ini merangkumi hubungkait aspek warisan dan komuniti dalam konteks industri pelancongan. Pembangunan produk pelancongan warisan berasaskan komuniti dibincangkan. Kepentingan memelihara sumber warisan untuk tujuan industri pelancongan ditekankan

*This course covers the relationship of heritage and community aspects within the context of tourism industry. Development of community-based heritage tourism products is discussed. The importance of preserving heritage resources for tourism purposes are emphasised*

FHR4501 Pendidikan Alam Semulajadi/Environmental Education 3 (2+1)

Prasyarat : Tiada

Kursus ini merangkumi perkaitan pendidikan alam semulajadi dengan masalah persekitaran yang dihadapi oleh masyarakat. Program pendidikan alam semulajadi dirancang dan dilaksanakan. Kesedaran masyarakat terhadap pendidikan alam semulajadi ditekankan.

*This course covers the relationship between environmental educational and environmental problems faced by society. Environmental educational programs are planned and implemented. Community awareness towards environmental educational is emphasised*

FHR4503 Pengurusan Ekopelancongan/Ecotourism Management 3 (2+1)

Prasyarat :Tiada

Kursus ini merangkumi maksud dan konsep pengurusan ekopelancongan. Pengajaran menumpukan kepada perkhidmatan ekopelancongan berasaskan komuniti tempatan. Amalan pengurusan perkhidmatan ekopelancongan terbaik ditekankan

*This course covers the meaning and concept of ecotourism management. Teaching focuses on ecotourism services based on local communities. The best management practices in ecotourism services are emphasised*

FHR4504 Pembangunan Produk Rekreasi/Development of Recreation Products 3 (2+1)

Prasyarat :Tiada

Kursus ini merangkumi konsep gelagat pengguna, dalam pembangunan produk rekreasi dan pengkomersialan produk. Pengurusan kewangan dalam industri rekreasi ditekankan

*This course covers concept of consumer behaviour in the development of recreational products and product commercialization. Financial management in the recreation industry is emphasised*

FHR4502 Pemasaran Rekreasi/*Recreation/Marketing* 3 (2+1)

Prasyarat : Tiada

Kursus ini merangkumi konsep dan teknik pemasaran produk rekreasi. Strategi pemasaran untuk produk rekreasi dan ekopelancongan dibincangkan. Kaedah promosi untuk produk rekreasi dan ekopelancongan ditekankan

*This course covers the concepts and techniques of marketing recreation products. The marketing strategy for recreation and ecotourism products are discussed. Promotional methods for recreation and ecotourism products are emphasised*

FHR4608 Pengurusan Kawasan Perlindungan/*Protected Areas Management* 3 (2+1)

Prasyarat : Tiada

Kursus ini merangkumi konsep dan prinsip pengurusan kawasan perlindungan. Proses penubuhan, perundangan dan penglibatan komuniti dalam pengurusan kawasan perlindungan dibincangkan. Menghasilkan pelan pengurusan dan pemantauan kawasan perlindungan tertentu

*This course covers concept and principles of protected area management. Establishment process, legislation and community engagement in protected areas is discussed. Development of a protected area management and monitoring plan for a specific area*

FHM3103 Dendrologi Dipterokarpa/*Dendrology Of Dipterocarps* 3 (2+1)

Prasyarat : Tiada

Kursus ini memperkenalkan kepada pelajar dendrologi dalam perhutanan dan taksonomi tumbuhan. Pengajaran menumpu kepada morfologi untuk pengecaman tumbuhan Gimnosperma dan Angiosperma. Pelajar juga didedahkan kepada nilai kepelbagaian tumbuhan dan habitatnya.

*This course introduces student to dendrology in forestry and plant taxonomy. The teaching focuses on morphological characters for identification of Gymnosperm and Angiosperm. Students are also exposed to value of diversities of plants and its habitats.*

FHM3105 Fisiologi Pokok/*Tree Physiology* 3 (2+1)

Prasyarat : Tiada

Kursus ini merangkumi peranan, fungsi dan proses fisiologi pokok dalam ekosistem perhutanan seperti fotosintesis, metabolisme karbohidrat, asimilasi dan respirasi. Hubungkait antara proses fisiologi pokok dengan faktor persekitaran seperti penyerapan, pergerakan dan kehilangan air dari pokok dan pembiakan seksual dan aseksual dibincangkan. Kursus ini menumpukan kepada teknik pengukuran fisiologi pokok yang bersesuaian

*This course covers the role, function and process of tree physiology within forest ecosystem includes photosynthesis, carbohydrate metabolism, assimilation and respiration. The relationship between tree physiological processes with environmental factor such as absorption, movement and loss of water, and sexual and asexual reproductions is discussed. This course focusses on the appropriate techniques for tree physiological measurement*

FHM3106 Ekologi Hutan/*Forest Ecology* 3 (2+1)

Prasyarat : Tiada

Kursus ini memberi penekanan kepada konsep ekologi yang mencakupi faktor persekitaran seperti faktor edafik, iklim dan biotik yang mempengaruhi perkembangan tumbuhan, pengelasan hutan serta dinamik komuniti tumbuhan dan proses seperti pengeluaran bahan organik, aliran tenaga dan kitaran nutrien

*This course emphasises on ecological concept, including environmental factors such as edaphic, climatic and biotic variables that influence the growth and development of vegetation, forest*



*classification as well as community dynamics and processes such as organic matter production, energy flow and nutrient cycling*

FHM3301 Pengurusan Hutan/*Forest Management*

3 (2+1)

Prasyarat : Tiada

Kursus ini merangkumi fungsi dan kepentingan pengurusan hutan secara berkekalan di Malaysia. Amalan dan piawaian pengurusan hutan antarabangsa berkaitan dengan hasil berkekalan, giliran dan pusingan tebangan, pengendalian stok, hasil dan kawalan tebangan berkaitan sistem pengurusan hutan di Malaysia dibincangkan. Penekanan diberi kepada keperluan pensijilan hutan dan pengesahan produk kayu dari sumber yang berkekalan.

*This course covers the functions and importance of sustainable 220 forest management in Malaysia. The principles and standard of international forest management related to the sustainable yield, rotation and cutting cycle, the manipulation of growing stock, yield, and regulation of fellings related to forest management system in Malaysia are discussed. Forest certification and verification of forest products from sustainable forest are emphasized.*

FHM3303 Pengurusan Hidupan Liar/*Wildlife Management*

3 (2+1)

Prasyarat : Tiada

Kursus ini merangkumi pengkelasan dan aspek ekologi hidupan liar di Malaysia termasuk dinamik populasi, keperluan habitat, tekanan dan gangguan kepada habitat asal. Pengukuran populasi melalui teknik pensampelan bagi anggaran populasi ditekankan. Prinsip pengurusan hutan bagi hidupan liar termasuk pemuliharaan, status kini dan masa hadapan, fungsi agensi, dasar dan polisi negara dan kesedaran umum dibincangkan

*The course encompasses classification and ecological aspect of wildlife in Malaysia includes population dynamics, habitat requirement, pressure and disturbance of original habitat. Population measurement through sampling techniques for population estimation is emphasized. Principles of forest management towards wildlife, conservation, current and future status, functions of agencies, national policies and public awareness is discussed*

FHM3305 Pengurusan Kawasan Legeh/*Watershed Management*

3 (2+1)

Prasyarat : Tiada

Kursus ini merangkumi masalah air dan langkah untuk mengatasinya, edaran hidrologi, kawasan tadahan hutan dan hubungannya dengan air hujan, air tanah, pemeluapan, air larian, banjir dan hakisan, kaedah kawalan kuantiti dan kualiti air dalam pengurusan kawasan legeh serta masalah sosial yang berkaitan

*The course covers water problems and approaches to their solutions, hydrological cycle, water catchment area and its relation to rainfall, gound water, evapotranspiration, runoff, floods and soil erosion, control methods for water quality and quantity in watershed management as well as related social problems*

## KURSUS TAWARAN FAKULTI LAIN

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

1. FAKULTI BAHASA MODEN DAN KOMUNIKASI
  - 1.1 KOM3403 Pengucapan Awam/ *Public Oration* 3 (3+0)
  
2. FAKULTI PERTANIAN
  - 2.1 PRT2008 Pertanian dan Manusia/ *Agriculture and Man* 2 (2+0)
  
3. FAKULTI PENGAJIAN PENDIDIKAN
  - 3.1 FCE3204 Kemahiran Berfikir/ *Thinking Skills* 2 (2+0)
  
4. FAKULTI EKONOMI DAN PENGURUSAN
  - 4.1 MGM3180 Asas Keusahawanan/ *Basic Entrepreneurship* 3 (2+1)
  - 4.2 MGM3101 Prinsip Pengurusan/ *Principles of Management* 3 (3+0)
  - 4.3 MGM3113 Gelagat Organisasi/ *Organizational Behavior* 3 (3+0)
  
5. FAKULTI EKOLOGI MANUSIA
  - 5.1 SKP2101 Kenegaraan Malaysia/ *Malaysian Nationhood* 3 (3+0)
  - 5.2 SKP2203 Tamadun Islam dan Tamadun Asia/ *Asian and Islamic Civilization* 2 (2+0)
  - 5.3 SKP2204 Hubungan Etnik / *Ethnic Relation* 2 (2+0)
  
6. FAKULTI SAINS
  - 6.1 MTH3003 Statistik Bagi Sains Gunaan/ *Statistics for Applied Sciences* 4 (3+1)
  - 6.2 BGY3201 Struktur Dan Fungsi Tumbuhan/ *Plant Structure And Function* 3 (2+1)
  
7. PUSAT PEMAJUAN KOPETENSI BAHASA (CALC)
  - 7.1 BBI2423 *Academic Interaction and Presentation* 3 (2+1)
  - 7.2 BBI2424 *Academic Writing* 3 (2+1)
  - 7.3 BB\_ \_ \_ \_ Elektif Bahasa Asing 3