

BUKU PANDUAN PROGRAM  
**PENGAJIAN PRASISWAZAH**  
*UNDERGRADUATE STUDY PROGRAMME HAND BOOK*



SESI AKADEMIK  
ACADEMIC SESSION  
2015/2016

FAKULTI  
**PERTANIAN**  
*FACULTY OF AGRICULTURE*

## **FAKULTI PERTANIAN**

### **Maklumat Am**

Fakulti Pertanian adalah satu daripada tiga fakulti pengasas dalam penubuhan Universiti Pertanian Malaysia (kini Universiti Putra Malaysia ) pada 1971. Bermula dengan tujuh jabatan di bawahnya, fakulti ini telah menjadi asas kepada penubuhan beberapa fakulti lain dalam proses pembangunan dengan membangunkan jabatan berkenaan hingga menjadi taraf fakulti sendiri.

Sehingga akhir 1998, Fakulti Pertanian mempunyai 3 jabatan akademik, iaitu Jabatan Agronomi dan Hortikultur, Jabatan Perlindungan Tumbuhan dan Jabatan Sains Tanah.

Bermula pada 1 Januari 1999, proses penstrukturan semula di Universiti Putra Malaysia juga melibatkan Fakulti Pertanian. Penstrukturan ini adalah berkonsepkan penyatuan atau integrasi elemen utama dalam sistem pertanian iaitu tanaman, haiwan, tanah, teknologi dan pengurusan. Berasas kepada konsep ini, Fakulti Pertanian kini mempunyai tujuh jabatan, iaitu Sains Tanaman, Perlindungan Tumbuhan, Pengurusan Tanah, Sains Haiwan, Perniagaantani dan Sistem Maklumat, Teknologi Pertanian dan Jabatan Akuakultur.

Sebagai fakulti pertanian terunggul di negara ini, maka Fakulti Pertanian mempunyai peranan utama untuk menangani secara langsung masalah pertanian semasa negara serta prospek pembangunan industri pertanian dalam jangka masa panjang terutama kepada program latihan sumber manusia dengan tenaga terlatih yang terdiri daripada graduan yang berpandangan jauh ke hadapan dan berupaya bersaing dalam arena industri.

Berlandaskan sistem pendidikan negara, Fakulti Pertanian berusaha mengeluarkan pakar pertanian terlatih, berciri keusahawan dan berupaya mengendalikan perundingan di mana saja, di samping menghasilkan teknologi pertanian baru dan tinggi, hasil dari program penyelidikan dan pengkomersilan.

### **General Information**

The Faculty of Agriculture is one of three founding faculties of Universiti Pertanian Malaysia (now Universiti Putra Malaysia) in 1971. The faculty began with seven departments, several of which subsequently developed and evolved into separate individual faculties.

As at the end of 1998, the Faculty of Agriculture had three academic departments: the Department of Agronomy and Horticulture, Department of Plant Protection and Department of Soil Science.

The restructuring exercise at the Universiti Putra Malaysia which began from January 1, 1999, also involved the Faculty of Agriculture. The restructuring exercise at the Faculty was based on the concept of unification or integration of the key elements in the agricultural system i.e. plants, animals, soil, technology and management. Based on this concept, the Faculty of Agriculture now comprises seven departments, namely Crop Science, Plant Protection, Soil Management, Animal Science, , Agribusiness and Information Systems, Agriculture Technology and Aquaculture.

As the foremost agricultural faculty in the country, the Faculty of Agriculture at UPM has a key role in resolving current agricultural problems faced by the country and the enhancement of the long term development prospects of the national agricultural industry, especially in developing human resource training programs to produce trained graduates who are far sighted and competitive in the industrial arena.

## **Pengurusan Fakulti/ Faculty Management**

### **Dekan/Dean**

Prof. Dr. Abd Shukor Juraimi

### **Timbalan Dekan (Akademik, Hal Ehwal Pelajar & Alumni)**

#### **Deputy Dean (Academic, Student Affair and Alumni)**

Prof. Dr. Che Fauziah Ishak

### **Timbalan Dekan (Siswazah, Penyelidikan dan Antarabangsa)**

#### **Deputy Dean (Graduates Studies, Research and International)**

Prof. Dr. Mahmud Tengku Muda Mohamed

### **Timbalan Dekan (Pembangunan, Jaringan Industri & Masyarakat)**

#### **Deputy Dean (Development, Networking and Community)**

Prof. Madya Dr. Halimi Mohd Saud

### **Ketua Jabatan Sains Tanaman**

#### **Head, Department of Crop Science**

Prof. Madya Dr. Adam Puteh

### **Ketua Jabatan Perlindungan Tumbuhan**

#### **Head, Department of Plant Protection**

Prof. Madya Dr. Nur Azura Adam

### **Ketua Jabatan Pengurusan Tanah**

#### **Head, Department of Land Management**

Prof. Madya Dr. Radziah Othman

### **Ketua Jabatan Teknologi Pertanian**

#### **Head, Department of Agriculture Technology**

Prof. Madya Dr. Norsida Man

### **Ketua Jabatan Sains Haiwan**

#### **Head, Department of Animal Science**

Prof. Dr. Loh Teck Chwen

### **Ketua Jabatan Perniagaantani dan Sistem Maklumat**

#### **Head, Department of Agribusiness and Information Systems**

Dr. Ismail Abd. Latif

### **Ketua Jabatan Akuakultur**

#### **Head, Department of Aquaculture**

Prof. Dr. Mohd Salleh Kamarudin

### **Timbalan Pendaftar**

#### **Deputy Registrar**

Encik Nazri Noh

## **Program Prasiswazah yang ditawarkan**

### **Bachelor**

1. Bachelor Sains Pertanian/ *Bachelor of Agricultural Science*
2. Bachelor Sains Hortikultur/ *Bachelor of Horticultural Science*
3. Bachelor Sains Perniagaantani/ *Bachelor of Science in Agribusiness*
4. Bachelor Sains Haiwan/ *Bachelor of Animal Science*
5. Bachelor Sains Akuakultur/ *Bachelor of Aquaculture Science*
6. *Bachelor Sains Pengurusan Perladangan/ Bachelor of Science Plantation Management*

## STUKTUR KURIKULUM/ *CURRICULUM STRUCTURE*

Nama Program	:	<b>Bachelor Sains Pertanian/ <i>Bachelor of Agricultural Science</i></b>
Jumlah Kredit Bergraduat	:	<b>136 Jam Kredit/ <i>Credit Hours</i></b>
Tempoh Pengajian	:	<b>8 Semester/ <i>Semesters</i> ( 4 Tahun/ <i>Years</i> )</b>

### 1. Kursus Universiti/ *University Courses* ( 23 kredit/ *credits*)

KOD KURSUS/ <i>COURSE CODE</i>	NAMA KURSUS/ <i>COURSE NAME</i>	Kr	K	A
BBI2423	<i>Academic Interaction and Presentation</i>	3	2	1
BBI2424	<i>Academic Writing</i>	3	2	1
KOM3403	<i>Pengucapan Awam/ Public Oration</i>	3	3	0
ECN3100	<i>Prinsip Ekonomi/ Principles of Economics</i>	3	3	0
SKP2101	<i>Kenegaraan Malaysia/ Malaysian Nationhood</i>	3	3	0
SKP2203	<i>Tamadun Islam dan Tamadun Asia/ Islamic Civilization and Asian Civilization</i>	2	2	0
SKP2204	<i>Hubungan Etnik/ Ethnic Relations</i>	2	2	0
PRT2008	<i>Pertanian dan Manusia/ Agriculture and Man</i>	2	2	0
	<i>Kokurikulum/ Co-curriculum</i>	2	0	2

### 2. Kursus Teras/ *Core Courses* (80 kredit/*credits*)

KOD KURSUS/ <i>COURSE CODE</i>	NAMA KURSUS/ <i>COURSE NAME</i>	Kr	K	A
AGR3001	<i>Amalan ladang: Tanaman Makanan/ Farm Practice: Food Crops</i>	1	0	1
AGR3002	<i>Amalan ladang: Tanaman Perladangan/ Farm Practices: Plantation Crops</i>	1	0	1
AGR3101	<i>Botani Pertanian/ Agricultural Botany</i>	3	2	1
AGR3102	<i>Prinsip Sains Rumpai/ Principles of Weed Science</i>	3	2	1
AGR3204	<i>Pembiakbakaan Tumbuhan/ Plant Breeding</i>	3	2	1
AGR3301	<i>Fisiologi Tanaman/ Crop Physiology</i>	3	2	1
AGR3501	<i>Tanaman Perladangan/ Plantation Crops</i>	2	2	0
AGR3502	<i>Tanaman Makanan/ Food Crops</i>	2	2	0
PRT3402	<i>Biokimia Pertanian/ Agricultural Biochemistry</i>	3	2	1
PRT3006	<i>Prinsip Pertanian Lestari/ Principles of Sustainable Agriculture</i>	2	2	0

PRT3201	Asas Statistik Bagi Sains Pertanian/ <i>Elementary Statistics For Agricultural Science</i>	2	2	0
PRT3202	Rekabentuk Dan Analisis Eksperimen/ <i>Experimental Design And Analysis</i>	3	2	1
EPT3102	Ekonomi Pertanian/ <i>Agricultural Economics</i>	3	2	1
PLP3104	Entomologi Asas/ <i>Fundamentals of Entomology</i>	3	2	1
PLP3204	Patologi Tumbuhan Asas/ <i>Fundamentals of Plant Pathology</i>	3	2	1
PPT3701	Keusahawanan Pertanian/ <i>Agricultural Entrepreneurship</i>	3	1	2
PRT3401	Kimia Pertanian/ <i>Agricultural Chemistry</i>	3	2	1
PRT4901	Latihan Industri/ <i>Industrial Training</i>	12	0	12
PRT4999	Projek Ilmiah Tahun Akhir/ <i>Final Year Academic Project</i>	6	0	6
SHW3001	Prinsip Pengeluaran Ternakan/ <i>Principle of Livestock Product</i>	3	3	0
SHW3003	Amalan Ladang : Pengeluaran Ternakan/ <i>Farm Practice: Livestock Production</i>	1	0	1
SST3005	Sains Tanah Asas/ <i>Fundamentals of Soil Science</i>	3	2	1
SST3603	Pengurusan Kesuburan Tanah/ <i>Soil Fertility Management</i>	3	2	1
AKU3201	Prinsip Akuakultur/ <i>Principles of Aquaculture</i>	3	2	1
TKP3201	Pengembangan Pertanian/ <i>Agricultural Extension.</i>	3	2	1
TKP3501	Mekanisasi Pertanian/ <i>Agriculture Mechanization</i>	3	2	1

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

i. Minor Sains Tanaman/ *Minor in Crops Science*

KOD KURSUS/ <i>COURSE CODE</i>	NAMA KURSUS/ <i>COURSE NAME</i>	Kr	K	A
AGR4507	Pengeluaran Tanaman Perladangan- Kelapa Sawit/ <i>Plantation Crop Production: Oil Palm</i>	3	2	1
AGR4508	Pengeluaran Tanaman Perladangan- Getah/ <i>Plantation Crop Production : Rubber</i>	3	2	1
AGR4101	Botani Pertanian Lanjutan/ <i>Advanced Agricultural Botany</i>	3	2	1
AGR4102	Teknologi Biji Benih/ <i>Seed Technology</i>	3	2	1
AGR4104	Sains Racun Rumpai/ <i>Herbicide Science</i>	3	2	1
AGR4203	Genetik Kuantitatif/ <i>Quantitative Genetics</i>	3	2	1
AGR4301	Fisiologi Tanaman Lanjutan/ <i>Advanced</i>	3	2	1

<i>Plant Physiology</i>				
AGR4401	Pemakanan Tanaman/ <i>Crop Nutrition</i>	3	2	1
AGR4501	Pengurusan Pastura/ <i>Pasture Management</i>	3	2	1
AGR3609	Tanaman Industri II : Kelapa, Koko, Kopi, Teh Dan Tebu/ <i>Industrial Crops II: Coconut, Cocoa, Coffee, Tea And Sugar Cane</i>	3	3	0
AGR4503	Pengeluaran Tanaman Padi/ <i>Rice Crop Production</i>	3	2	1
HRT3000	Pengeluaran Tanaman Hortikultur/ <i>Horticultural Crop Production</i>	3	3	0
HRT3401	Fisiologi Lepas Tuai/ <i>Postharvest Physiology</i>	3	2	1
HRT3501	Pengenalan Rekabentuk Landskap/ <i>Introduction to Landscape Design</i>	3	2	1
HRT4301	Kultur Orkid/ <i>Orchid Culture</i>	3	2	1
HRT4401	Pengawalatur Tumbesaran Tumbuhan/ <i>Plant Growth Regulators</i>	3	2	1
HRT4601	Pengurusan Rumput Turf/ <i>Turfgrass Management</i>	3	2	1
HRT4701	Pembiakan Mikro Tumbuhan / <i>Plant Micropropagation</i>	3	2	1

ii. Minor Teknologi Pertanian/ *Minor in Agriculture Technology*

KOD KURSUS/ <i>COURSE CODE</i>	NAMA KURSUS/ <i>COURSE NAME</i>	Kr	K	A
HRT4101	Kultur Tanpa Tanah/ <i>Soilless Culture</i>	3	2	1
HRT4102	Pertanian Persekitaran Terkawal/ <i>Controlled Environment Agriculture</i>	3	2	1
SST3802	Pengurusan Sisa Pertanian/ <i>Agricultural Waste Management</i>	3	2	1
PRT4002	Pertanian Presisi/ <i>Precision Agriculture</i>	3	2	1
PRT4201	Penilaian Sumber Pertanian/ <i>Agricultural Resource Evaluation</i>	3	2	1
PRT4041	Sistem Pengeluaran Organik/ <i>Organic Production Systems</i>	3	2	1
PRT4301	Permodelan Dan Simulasi Komputer Dalam Pertanian/ <i>Modelling And Computer Simulation In Agriculture</i>	3	2	1
TKP3001	Teknologi Pertanian Moden/ <i>Modern Agricultural Technology</i>	3	2	1
TKP3104	Bioteknologi Pertanian/ <i>Agricultural Biotechnology</i>	3	2	1
TKP3301	Taman Pertanian Rekreasi / <i>Agriculture Recreational Park</i>	3	2	1
TKP3401	Teknologi Maklumat Dan Komunikasi Untuk Pertanian/ <i>Information and Communication</i>	3	2	1

*Technology for Agriculture*

i. Minor Sains Tanah/ *Minor in Soil Science*

KOD KURSUS/ COURSE CODE	NAMA KURSUS/COURSE NAME	Kr	K	A
SST3201	Tanah-Tanah di Malaysia/ <i>Soils of Malaysia</i>	3	2	1
SST3502	Ekologi Tanah/ <i>Soil Ecology</i>	3	2	1
SST4201	Pembentukan dan Pengelasan Tanah/ <i>Soil Formation And Classification</i>	3	2	1
SST4302	Fizik Tanah/ <i>Soil Physics</i>	3	2	1
SST4303	Pemuliharaan Tanah/ <i>Soil Conservation</i>	3	2	1
SST4304	Perubahan Iklim Dan Pertanian/ <i>Climate Change And Agriculture</i>	3	2	1
SST4402	Kimia Tanah/ <i>Soil Chemistry</i>	3	2	1
SST4501	Mikrobiologi Tanah Lanjutan/ <i>Advanced Soil Microbiology</i>	3	2	1
SST4601	Kesuburan Tanah II/ <i>Soil Fertility II</i>	3	2	1
SST4701	Mineralogi Tanah/ <i>Soil Mineralogy</i>	3	2	1
SST4801	Sains Tanah Persekitaran/ <i>Environmental Soil Science</i>	3	2	1

ii. Minor Perlindungan Tumbuhan/ *Minor in Plant Protection*

KOD KURSUS/ COURSE CODE	NAMA KURSUS/COURSE NAME	Kr	K	A
PLP4001	Pengawalan Perosak/ <i>Pest Control</i>	3	2	1
PLP4002	Teknik Penggunaan Racun Perosak/ <i>Pesticide Application Technique</i>	3	2	1
PLP4003	Kawalan Biologi Perosak Tanaman/ <i>Biological Control of Crop Pests</i>	3	2	1
PLP4101	Entomologi/ <i>Entomology</i>	3	2	1
PLP4102	Apikultur/ <i>Apiculture</i>	3	2	1
PLP4201	Patologi Tumbuhan/ <i>Plant Pathology</i>	3	2	1
PLP3105	Pengurusan Perosak Bandaran/ <i>Urban Pest Management</i>	3	2	1

iii. Minor Sains Haiwan/ *Minor in Animal Science*

KOD KURSUS/ COURSE CODE	NAMA KURSUS/COURSE NAME	Kr	K	A
SHW3503	Produksi Ternakan Pedaging/ <i>Meat Livestock Production</i>	3	2	1
SHW3504	Produksi Tensu/ <i>Dairy Production</i>	3	2	1

SHW3512	Produksi Poltri/ <i>Poultry Production</i>	3	2	1
SHW3513	Produksi Babi/ <i>Swine Production</i>	3	2	1
SHW3406	Prinsip Pemakanan Ternakan/ <i>Principles of Livestock Nutrition</i>	3	2	1
SHW4103	Produksi Ruminan Kecil/ <i>Small Ruminant Production</i>	2	2	0
SHW4105	Sains Daging/ <i>Meat Science</i>	3	2	1
SHW4201	Fisiologi Persekitaran/ <i>Environmental Physiology</i>	3	2	1

iv. Minor Ekonomi & Pengurusan Pertanian/ *Minor in Economic and Agricultural Management*

KOD KURSUS/ COURSE CODE	NAMA KURSUS/COURSE NAME	Kr	K	A
EPT3201	Ekonomi Pengeluaran Pertanian/ <i>Agricultural Production Economics</i>	3	3	0
EPT3202	Pengurusan Ladang/ <i>Farm Management</i>	3	3	0
EPT4201	Analisis Keputusan Pertanian/ <i>Agricultural Decision Analysis</i>	3	3	0
PPT4202	Perancangan dan Pengurusan Projek Perniagaantani/ <i>Agribusiness Project Planning and Management</i>	3	3	0
EPT4301	Pemasaran Pertanian/ <i>Agricultural Marketing</i>	3	3	0
EPT4401	Kewangan Pertanian/ <i>Agricultural Finance</i>	3	3	0
EPT4501	Ekonomi dan Dasar Pembangunan Pertanian/ <i>Economics of Agricultural Development and Policy</i>	3	3	0
PPT3401	Perakaunan Perniagaantani/ <i>Agribusiness Accounting</i>	4	3	1
EPT3101	Ekonomi Sumber Asli/ <i>Economic of Natural Resources</i>	3	3	0
EPT4602	Kaedah Penyelidikan dalam Ekonomi Pertanian/ <i>Research Methods in Agricultural Economics</i>	3	2	1

v. Minor Akuakultur/ *Minor in Aquaculture*

KOD KURSUS/ COURSE CODE	NAMA KURSUS/COURSE NAME	Kr	K	A
AKU3101	Sains Perikanan/ <i>Fisheries Science</i>	3	3	0
AKU3103	Iktiologi/ <i>Ichthyology</i>	3	2	1
AKU3301	Genetik dan Pembiakbakaan Ikan/ <i>Fish Genetics And Breeding</i>	3	2	1
AKU3302	Teknologi Pembenihan Ikan dan	3	2	1

	Pengurusan Fri/ <i>Fish Seed Technology and Fry Management</i>			
AKU3401	Pemakanan Akuakultur/ <i>Aquaculture Nutrition</i>	3	2	1

vi. Minor Pengembangan dan Pendidikan Pertanian/ *Minor in Extension And Agricultural Education*

KOD KURSUS/ COURSE CODE	NAMA KURSUS/COURSE NAME	Kr	K	A
DCE3311	Pendidikan Dewasa/ <i>Adult Education</i>	3	3	0
DCE3304	Perencanaan Program Pendidikan Dewasa/ <i>Adult Education Program Development</i>	3	3	0
DCE3406	Kepimpinan dalam Pengembangan dan Pembangunan Masyarakat/ <i>Leadership in Extension and Community Development</i>	3	3	0
DCE3411	Pembangunan Sumber Masyarakat/ <i>Community Development</i>	3	3	0
TKP4201	Pemindahan Teknologi Pertanian/ <i>Transfer of Agricultural Technology</i>	3	2	1
TKP4202	Komunikasi Pertanian/ <i>Agricultural Communication</i>	3	2	1
TKP4203	Perencanaan Program Pengembangan Pertanian/ <i>Programme Planning in Agricultural Extension</i>	3	2	1

4. Elektif/ *Elective* (6 Kredit/ *Credits*)

KOD KURSUS/ COURSE CODE	NAMA KURSUS/COURSE NAME	Kr	K	A
	Kursus Elektif Komponen <i>Liberal Arts/Kemanusiaan/ Elective course liberal arts/human component</i>	6	6	0

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

**Nota/ Note:**

1. Pelajar mesti memilih **27 kredit** daripada kursus tersenarai di mana **15 kredit** adalah menyokong projek ilmiah tahun akhir dan **6 kredit** kursus kemanusiaan untuk melengkapi 33 kredit jumlah kursus elektif dengan persetujuan jabatan/ *Students must choose 27 credits from courses listed in which the 15 credits is to support the final year project and the 6 credits humanities courses to complete 33 credits of elective courses with the consent of the department.*
2. 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*
3. 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	Graduation Requirements for 4-year programmes
1 & 2	3 BBI + 3 CEL + 24 LAX points
3 & 4	2 BBI + 2 CEL + 36 LAX points
5 & 6	3 CEL + 36 LAX points

## SKEMA PENGAJIAN/ STUDY SCHEME

TAHUN 1/ 1<sup>st</sup> Year

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

KOD KURSUS/ COURSE CODE	NAMA KURSUS/COURSE NAME	Kr	K	A
AGR3101	Botani Pertanian/ <i>Agricultural Botany</i>	3	2	1
BBI2423	<i>Academic Interaction and Presentation</i>	3	2	1
ECN3100	Prinsip Ekonomi/ <i>Principles of Economics</i>	3	3	0
PRT3401	Kimia Pertanian/ <i>Agricultural Chemistry</i>	3	2	1
SKP2101	Kenegaraan Malaysia/ <i>Malaysian Nationhood</i>	3	3	0
PRT2008	Pertanian dan Manusia/ <i>Pertanian dan Manusia/ Agriculture and Man</i>	2	2	0
	Kokurikulum/ <i>Co-Curriculum</i>	1	0	1
	<b>JUMLAH/ TOTAL</b>	<b>18</b>	<b>14</b>	<b>4</b>

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

KOD KURSUS/ COURSE CODE	NAMA KURSUS/COURSE NAME	Kr	K	A
AGR3102	Prinsip Sains Rumpai/ <i>Principles of Weed Science</i>	3	2	1
AGR3301	Fisiologi Tanaman/ <i>Crop Physiology</i>	3	2	1
BBI2424	<i>Academic Writing</i>	3	2	1
PRT3201	Asas Statistik Bagi Sains Pertanian/ <i>Elementary Statistics For Agricultural Science</i>	2	2	0
SKP2203	Tamadun Islam dan Tamadun Asia/ <i>Islamic and Asian Civilization</i>	2	2	0
SST3005	Sains Tanah Asas/ <i>Fundamentals of Soil Science</i>	3	2	1
	Kokurikulum/ <i>Co-Curriculum</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
AGR3002	Amalan ladang: Tanaman Perladangan/ <i>Farm Practices: Plantation Crops</i>	1	0	1

AGR3501	Tanaman Perladangan/ <i>Plantation Crops</i>	2	2	0
KOM3403	Pengucapan Awam/ <i>Public Oration</i>	3	2	1
PLP3104	Entomologi Asas/ <i>Fundamentals Of Entomology</i>	3	2	1
PRT3006	Prinsip Pertanian Lestari/ <i>Principles Of Sustainable Agriculture</i>	2	2	0
PRT3402	Biokimia Pertanian/ <i>Agricultural Biochemistry</i>	3	2	1
SST3603	Pengurusan Kesuburan Tanah/ <i>Soil Fertility Management</i>	3	2	1
<b>JUMLAH/ TOTAL</b>		<b>17</b>	<b>12</b>	<b>5</b>

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

KOD KURSUS/ COURSE CODE	NAMA KURSUS/COURSE NAME	Kr	K	A
AGR3001	Amalan ladang: Tanaman Makanan/ <i>Farm Practice: Food Crops</i>	1	0	1
AGR3204	Pembiakbakaan Tumbuhan/ <i>Plant Breeding</i>	3	2	1
AGR3502	Tanaman Makanan/ <i>Food Crops</i>	2	2	0
AKU3201	Prinsip Akuakultur/ <i>Principles of Aquaculture</i>	3	2	1
PLP3204	Patologi Tumbuhan Asas/ <i>Fundamentals of Plant Pathology</i>	3	2	1
SHW3001	Prinsip Pengeluaran Ternakan/ <i>Principle of Livestock Product</i>	3	3	0
SHW3003	Amalan Ladang : Pengeluaran Ternakan/ <i>Farm Practice: Livestock Production</i>	1	0	1
SKP2204	Hubungan Etnik/ <i>Ethnic Relations</i>	2	2	0
<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
PRT3202	Rekabentuk Dan Analisis Eksperimen/ <i>Experimental Design And Analysis</i>	3	2	1
EPT3102	Ekonomi Pertanian/ <i>Agricultural Economics</i>	3	2	1
TKP3201	Pengembangan Pertanian/ <i>Agricultural Extension</i>	3	2	1
Elektif/ <i>Electives</i>		9		
<b>JUMLAH/ TOTAL</b>		<b>18</b>		

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

KOD KURSUS/ COURSE CODE	NAMA KURSUS/COURSE NAME	Kr	K	A
PRT4999A	Projek Ilmiah Tahun Akhir/ <i>Final Year Academic Project</i>	3	0	3
TKP3501	Mekanisasi Pertanian/ <i>Agriculture Mechanization</i>	3	2	1
	Elektif/ <i>Electives</i>	12		
	<b>JUMLAH/ TOTAL</b>	<b>18</b>		

TAHUN 4/ 4<sup>TH</sup> YEARSEMESTER 1/ 1<sup>ST</sup> SEMESTER

KOD KURSUS/ COURSE CODE	NAMA KURSUS/COURSE NAME	Kr	K	A
PRT4999B	Projek Ilmiah Tahun Akhir/ <i>Final Year Academic Project</i>	3	0	3
PPT3701	Keusahawanan Pertanian/ <i>Agricultural Entrepreneurship</i>	3	1	2
	Elektif/ <i>Elective</i>	12		
	<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
PRT4901	Latihan Industri/ <i>Industrial Training</i>	12	0	12
	<b>JUMLAH/ TOTAL</b>	<b>12</b>	<b>0</b>	<b>12</b>

## STRUKTUR KURIKULUM/ *CURRICULUM STRUCTURE*

Nama Program	:	<b>Bachelor Sains Hortikultur/ <i>Bachelor of Horticultural Science</i></b>
Jumlah Kredit Bergraduat	:	<b>136 Jam Kredit/ <i>Credits Hours</i></b>
Tempoh Pengajian	:	<b>8 Semester/ <i>Semesters</i> ( 4 Tahun/ <i>Years</i> )</b>

### 1. Kursus Universiti/ *University Courses* ( 23 Kredit/ *credits*)

KOD KURSUS/ <i>COURSE CODE</i>	NAMA KURSUS/ <i>COURSE NAME</i>	Kr	K	A
BBI2423	<i>Academic Interaction and Presentation</i>	3	2	1
BBI2424	<i>Academic Writing</i>	3	2	1
ECN3100	Prinsip Ekonomi/ <i>Principles of Economics</i>	3	3	0
KOM3403	Pengucapan Awam/ <i>Public Oration</i>	3	3	0
PRT2008	Pertanian dan Manusia/ <i>Pertanian dan Manusia/ Agriculture and Man</i>	2	2	0
SKP2101	Kenegaraan Malaysia/ <i>Malaysian Nationhood</i>	3	3	0
SKP2203	Tamadun Islam dan Tamadun Asia/ <i>Islamic and Asian Civilization</i>	2	2	0
SKP2204	Hubungan Etnik/ <i>Ethnic Relations</i>	2	2	0
	Kokurikulum/ <i>Co-curriculum</i>	2	0	2

### 2. Kursus Teras/ *Core Courses* ( 80 kredit)

KOD KURSUS/ <i>COURSE CODE</i>	NAMA KURSUS/ <i>COURSE NAME</i>	Kr	K	A
AGR3102	Prinsip Sains Rumpai/ <i>Principles of Weed Science</i>	3	2	1
AGR3204	Pembiakbakaan Tumbuhan/ <i>Plant Breeding</i>	3	2	1
PRT3402	Biokimia Pertanian/ <i>Agricultural Biochemistry</i>	3	2	1
PRT3201	Asas Statistik Bagi Sains Pertanian/ <i>Elementary Statistics for Agricultural Science</i>	2	2	0
PRT3202	Rekabentuk Dan Analisis Eksperimen/ <i>Experimental Design And Analysis</i>	3	2	1
PPT3301	Prinsip Pengurusan Dan Pemasaran Pertanian/ <i>Principles of Agricultural Management and Marketing</i>	3	3	0
HRT3001	Pembiakan Tumbuhan dan Pengurusan Semaian/ <i>Plant Propagation and Nursery Management</i>	3	2	1
HRT3002	Botani dan Fisiologi Tanaman Hortikultur/ <i>Botany and Physiology of Horticultural</i>	4	3	1

<i>Crops</i>				
HRT3004	Amalan Ladang : Pengeluaran Buah-buahan/ <i>Farm Practice: Fruit Production</i>	1	0	1
HRT3005	Amalan Ladang : Pengeluaran Sayur-sayuran/ <i>Farm Practice: Vegetable Production</i>	1	0	1
HRT3008	Amalan Ladang : Hortikultur Hiasan/ Landskap/ <i>Farm Practice: Ornamental /Landscape Horticulture</i>	1	0	1
HRT3009	Amalan Ladang :Turf/ <i>Farm Practice: Turf</i>	1	0	1
HRT3102	Pengeluaran Sayur- Sayuran/ <i>Vegetable Production</i>	2	2	0
HRT3202	Pomologi/ <i>Pomology</i>	2	2	0
HRT3302	Pengeluaran Tanaman Hiasan Dan Bunga/ <i>Ornamental and Flower Production</i>	2	2	0
HRT3401	Fisiologi Lepas Tuai/ <i>Postharvest Physiology</i>	3	2	1
HRT3501	Pengenalan Rekabentuk Landskap/ <i>Introduction to Landscape Design</i>	3	2	1
HRT3601	Sains Turf/ <i>Turf Science</i>	2	2	0
PLP3104	Entomologi Asas/ <i>Fundamentals of Entomology</i>	3	2	1
PLP3204	Patologi Tumbuhan Asas/ <i>Fundamentals of Plant Pathology</i>	3	2	1
PPT3701	Keusahawanan Pertanian/ <i>Agricultural Entrepreneurship</i>	3	1	2
PRT3006	Prinsip Pertanian Lestari/ <i>Principles of Sustainable Agriculture</i>	2	2	0
PRT4999	Projek Ilmiah Tahun Akhir/ <i>Final Year Academic Project</i>	6	0	6
PRT4901	Latihan Industri/ <i>Industrial Training</i>	12	0	12
SST3005	Sains Tanah Asas/ <i>Fundamentals of Soil Science</i>	3	2	1
TKP3201	Pengembangan Pertanian/ <i>Agricultural Extension</i>	3	2	1
TKP3501	Mekanisasi Pertanian/ <i>Agriculture Mechanization</i>	3	2	1

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

KOD KURSUS/ <i>COURSE CODE</i>	NAMA KURSUS/ <i>COURSE NAME</i>	Kr	K	A
AGR3502	Tanaman Makanan/ <i>Food Crops</i>	2	2	0
AGR4101	Botani Pertanian Lanjutan/ <i>Advanced Agricultural Botany</i>	3	2	1
AGR4102	Teknologi Biji Benih/ <i>Seed Technology</i>	3	2	1

AGR4203	Genetik Kuantitatif/ <i>Quantitative Genetics</i>	3	2	1
AGR4301	Fisiologi Tanaman Lanjutan/ <i>Advanced Plant Physiology</i>	3	2	1
AGR4401	Pemakanan Tanaman/ <i>Crop Nutrition</i>	3	2	1
AKU3101	Sains Perikanan/ <i>Fisheries Science</i>	3	3	0
EPT3201	Ekonomi Pengeluaran Pertanian/ <i>Agricultural Production Economics</i>	3	3	0
EPT3202	Pengurusan Ladang/ <i>Farm Management</i>	3	3	0
EPT4201	Analisis Keputusan Pertanian/ <i>Agricultural Decision Analysis</i>	3	3	0
EPT4204	Perancangan dan Pengurusan Projek Pertanian/ <i>Agriculture Project Planning and Management</i>	3	3	0
EPT4301	Pemasaran Pertanian/ <i>Agricultural Marketing</i>	3	3	0
EPT4501	Ekonomi dan Dasar Pembangunan Pertanian/ <i>Economics of Agricultural Development and Policy</i>	3	3	0
HRT4101	Kultur Tanpa Tanah/ <i>Soilless Culture</i>	3	2	1
HRT4102	Pertanian Persekitaran Terkawal/ <i>Controlled Environment Agriculture</i>	3	2	1
HRT4201	Pengeluaran Komersil Buah-buahan/ <i>Commercial Fruit Production</i>	3	2	1
HRT4301	Kultur Orkid/ <i>Orchid Culture</i>	3	2	1
HRT4302	Tanaman Hiasan Eksotik/ <i>Exotic Ornamental Plants</i>	3	2	1
HRT4401	Pengawalatur Tumbesaran Tumbuhan/ <i>Plant Growth Regulators</i>	3	2	1
HRT4601	Pengurusan Rumput Turf/ <i>Turfgrass Management</i>	3	2	1
HRT4701	Pembiakan Mikro Tumbuhan / <i>Plant Micropropagation</i>	3	2	1
PLP3002	Pengurusan Perosak Tanaman Hortikultur/ <i>Horticulture Crop Pest Management</i>	3	2	1
PLP4001	Pengawalan Perosak/ <i>Pest Control</i>	3	2	1
PLP4002	Teknik Penggunaan Racun Perosak/ <i>Pesticide Application Technique</i>	3	2	1
PLP4003	Kawalan Biologi Perosak Tanaman/ <i>Biological Control Of Crop Pests</i>	3	2	1
PLP4101	Entomologi/ <i>Entomology</i>	3	2	1
PLP4201	Patologi Tumbuhan/ <i>Plant Pathology</i>	3	2	1
PLP4601	Sains Racun Perosak/ <i>Pesticide Science</i>	3	2	1
PPT3401	Perakaunan Perniagaantani/ <i>Agribusiness Accounting</i>	4	3	1
PRT3501	Mikrobiologi Pertanian/ <i>Agricultural</i>	3	2	1

<i>Microbiology</i>				
PRT4002	Pertanian Presisi/ <i>Precision Agriculture</i>	3	2	1
PRT4041	Sistem Pengeluaran Organik/ <i>Organic Production Systems</i>	3	2	1
SHW3001	Prinsip Pengeluaran Ternakan/ <i>Principle of Livestock Product</i>	3	3	0
SST3602	Pengurusan Tanah Lestari/ <i>Sustainable Soil Management</i>	3	2	1
SST3603	Pengurusan Kesuburan Tanah/ <i>Soil Fertility Management</i>	3	2	1
SST3802	Pengurusan Sisa Pertanian/ <i>Agricultural Waste Management</i>	3	2	1
SST4201	Pembentukan dan Pengelasan Tanah/ <i>Soil Formation And Classification</i>	3	2	1
SST4302	Fizik Tanah/ <i>Soil Physics</i>	3	2	1
SST4303	Pemuliharaan Tanah/ <i>Soil Conservation</i>	3	2	1
SST4304	Perubahan Iklim Dan Pertanian/ <i>Climate Change And Agriculture</i>	3	2	1
SST4601	Kesuburan Tanah II/ <i>Soil Fertility II</i>	3	2	1
SST4701	Mineralogi Tanah/ <i>Soil Mineralogy</i>	3	2	1
SST4801	Sains Tanah Persekitaran/ <i>Environmental Soil Science</i>	3	2	1
TKP3104	Bioteknologi Pertanian/ <i>Agricultural Biotechnology</i>	3	2	1
TKP3301	Taman Pertanian Rekreasi / <i>Agriculture Recreational Park</i>	3	2	1
TKP3401	Teknologi Maklumat Dan Komunikasi Untuk Pertanian/ <i>Information and Communication Technology for Agriculture</i>	3	2	1
TKP4201	Pemindahan Teknologi Pertanian/ <i>Transfer of Agricultural Technology</i>	3	2	1
TKP4202	Komunikasi Pertanian/ <i>Agricultural Communication</i>	3	2	1
TKP4203	Perencanaan Program Pengembangan Pertanian/ <i>Programme Planning in Agricultural Extension</i>	3	2	1

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

**Nota/ Note:**

1. Pelajar mesti memilih minimum dua belas **(12) kredit kursus** berkod HRT, lima belas **(15) kredit** daripada kursus yang disenaraikan dan **6 kredit** adalah kursus kemanusiaan untuk melengkapkan keperluan **33 kredit** kursus elektif dengan persetujuan jabatan. *Students must select a minimum of twelve (12) HRT-coded course credits, fifteen (15) credits from the courses listed and 6 credits humanities courses to complete 33 credits elective course requirements with the consent of the department.*
2. 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
3. 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	Graduation Requirements for 4-year programmes
1 & 2	3 BBI + 3 CEL + 24 LAX points
3 & 4	2 BBI + 2 CEL + 36 LAX points
5 & 6	3 CEL + 36 LAX points

## SKEMA PENGAJIAN/ STUDY SCHEME

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

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

KOD KURSUS/ COURSE CODE	NAMA KURSUS/COURSE NAME	Kr	K	A
BBI2423	<i>Academic Interaction and Presentation</i>	3	2	1
ECN3100	Prinsip Ekonomi/ <i>Principles of Economics</i>	3	3	0
HRT3001	Pembiakan Tumbuhan dan Pengurusan Semaian/ <i>Plant Propagation and Nursery Management</i>	3	2	1
PRT2008	Pertanian dan Manusia/ <i>Agriculture and Man</i>	2	2	0
PRT3402	Biokimia Pertanian/ <i>Agricultural Biochemistry</i>	3	2	1
SKP2101	Kenegaraan Malaysia/ <i>Malaysian Nationhood</i>	3	3	0
	Kokurikulum/ <i>Co-Curriculum</i>	1	0	1
	<b>JUMLAH/ TOTAL</b>	<b>18</b>	<b>14</b>	<b>4</b>

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

KOD KURSUS/ COURSE CODE	NAMA KURSUS/COURSE NAME	Kr	K	A
BBI2424	<i>Academic Writing</i>	3	2	1
SKP2204	Hubungan Etnik/ <i>Ethnic Relations</i>	2	2	0
AGR3102	Prinsip Sains Rumpai/ <i>Principles of Weed Science</i>	3	2	1
SKP2203	Tamadun Islam dan Tamadun Asia/ <i>Islamic and Asian Civilization</i>	2	2	0
SST3005	Sains Tanah Asas/ <i>Fundamentals of Soil Science</i>	3	2	1
HRT3002	Botani dan Fisiologi Tanaman Hortikultur/	4	3	1

<i>Botany and Physiology of Horticultural Crops</i>				
	Kokurikulum/ <i>Co-Curriculum</i>	1	0	1
<b>JUMLAH/ TOTAL</b>		<b>18</b>	<b>14</b>	<b>4</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
KOM3403	Pengucapan Awam/ <i>Public Oration</i>	3	3	0
AGR3204	Pembiakbakaan Tumbuhan/ <i>Plant Breeding</i>	3	2	1
HRT3102	Pengeluaran Sayur- Sayuran/ <i>Vegetable Production</i>	2	2	0
HRT3202	Pomologi/ <i>Pomology</i>	2	2	0
HRT3005	Amalan Ladang : Pengeluaran Sayur-sayuran/ <i>Farm Practice: Vegetable Production</i>	1	0	1
HRT3004	Amalan Ladang : Pengeluaran Buah-buahan/ <i>Farm Practice: Fruit Production</i>	1	0	1
PLP3104	Entomologi Asas/ <i>Fundamentals of Entomology</i>	3	2	1
PRT3201	Asas Statistik Bagi Sains Pertanian/ <i>Elementary Statistics for Agricultural Science</i>	2	2	0
<b>JUMLAH/ TOTAL</b>		<b>17</b>	<b>12</b>	<b>5</b>

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

KOD KURSUS/ COURSE CODE	NAMA KURSUS/COURSE NAME	Kr	K	A
HRT3008	Amalan Ladang : Hortikultur Hiasan/ Landskap/ <i>Farm Practice: Ornamental/ Landscape Horticulture</i>	1	0	1
HRT3009	Amalan Ladang :Turf/ <i>Farm Practice: Turf</i>	1	0	1
HRT3302	Pengeluaran Tanaman Hiasan Dan Bunga/ <i>Ornamental and Flower Production</i>	2	2	0
HRT3601	Sains Turf/ <i>Turf Science</i>	2	2	0
PLP3204	Patologi Tumbuhan Asas/ <i>Fundamentals of Plant Pathology</i>	3	2	1
PPT3301	Prinsip Pengurusan Dan Pemasaran Pertanian/ <i>Principles of Agricultural Management and Marketing</i>	3	2	1

HRT3401	Fisiologi Lepas Tuai/ <i>Postharvest Physiology</i>	3	2	1
	Elektif/ <i>Electives</i>	3		
	<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
TKP3501	Mekanisasi Pertanian/ <i>Agriculture Mechanization</i>	3	2	1
TKP3201	Pengembangan Pertanian/ <i>Agricultural Extension</i>	3	2	1
PRT3006	Prinsip Pertanian Lestari/ <i>Principles of Sustainable Agriculture</i>	2	2	0
	Elektif/ <i>Electives</i>	9		
	<b>JUMLAH/ TOTAL</b>	<b>17</b>		

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

KOD KURSUS/ COURSE CODE	NAMA KURSUS/COURSE NAME	Kr	K	A
HRT3501	Pengenalan Rekabentuk Landskap/ <i>Introduction to Landscape Design</i>	3	2	1
PPT3701	Keusahawanan Pertanian/ <i>Agricultural Entrepreneurship</i>	3	1	2
PRT3202	Rekabentuk Dan Analisis Eksperimen/ <i>Experimental Design And Analysis</i>	3	2	1
PRT4999A	Projek Ilmiah Tahun Akhir/ <i>Final Year Academic Project</i>	3	0	3
	Elektif/ <i>Electives</i>	6		
	<b>JUMLAH/ TOTAL</b>	<b>18</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
PRT4999B	Projek Ilmiah Tahun Akhir/ <i>Final Year Academic Project</i>	3	0	3
	Elektif/ <i>Electives</i>	15		
	<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
PRT4901	Latihan Industri/ <i>Industrial Training</i>	12	0	12
<b>JUMLAH/ TOTAL</b>		<b>12</b>	<b>0</b>	<b>12</b>

## STRUKTUR KURIKULUM/ CURRICULUM STRUCTURE

Nama Program : **Bachelor Sains Perniagaantani/ Bachelor of Science in Agribusiness**

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

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

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

KOD KURSUS/ COURSE CODE	NAMA KURSUS/COURSE NAME	Kr	K	A
BBI2423	Academic Interaction and Presentation	3	2	1
BBI2424	Academic Writing	3	2	1
FCE3204	Kemahiran Berfikir/ <i>Thinking Skills</i>	2	2	0
KOM3403	Pengucapan Awam/ <i>Public Oration</i>	3	3	0
PPT4701	Keusahawanan Perniagaantani/ <i>Agribusiness Entrepreneurship</i>	3	1	2
PRT2008	Pertanian dan Manusia/ 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>Islamic and Asian Civilization</i>	2	2	0
SKP2204	Hubungan Etnik/ <i>Ethnic Relations</i>	2	2	0
	Kokurikulum/ <i>Co-curriculum</i>	1	0	1
	Kokurikulum/ <i>Co-curriculum</i>	1	0	1

### 2. Kursus Teras/ Core Courses ( 76 kredit/ credit)

KOD KURSUS/ COURSE CODE	NAMA KURSUS/COURSE NAME	Kr	K	A
AGR3001	Amalan ladang: Tanaman Makanan/ <i>Farm Practice: Food Crops</i>	1	0	1
EPT3102	Ekonomi Pertanian/ <i>Agricultural Economics</i>	3	2	1
FST3003	Pengenalan Kepada Sains Makanan/ <i>Introduction to Food Science</i>	3	3	0
MGM3351	Undang-undang Komersial/ <i>Commercial Laws</i>	3	3	0
MTH3004	Pengenalan kepada Matematik Ekonomi dan Perniagaan	4	3	1
PPT3001	Pengenalan kepada Sistem Perniagaantani Malaysia/ <i>Introduction to Malaysia Agribusiness System</i>	3	3	0
PPT3201	Prinsip Pengurusan Perniagaantani/	3	3	0

<i>Principles of Agribusiness Management</i>				
PPT3302	Prinsip Pemasaran Perniagaantani/ <i>Principle of Agribusiness Marketing</i>	3	3	0
PPT3401	Perakaunan Perniagaantani/ <i>Agribusiness Accounting</i>	4	3	1
PPT3402	Perakaunan Kos dan Pengurusan Perniagaantani/ <i>Agribusiness Cost and Management Accounting</i>	3	2	1
PPT3801	Statistik dalam Perniagaantani/ <i>Statistics In Agribusiness</i>	3	2	1
PPT4204	Ekonomi Perniagaantani/ <i>Agribusiness Economics</i>	3	3	0
PPT4304	Pengurusan Rantaian Bekalan Produk Makanan/ <i>Food Product Supply Chain Management</i>	3	2	1
PPT4602	Kaedah Penyelidikan Perniagaantani/ <i>Agribusiness Research Methods</i>	3	2	1
PPT4901	Latihan Industri Perniagaantani/ <i>Agribusiness Industrial Training</i>	12	0	12
PPT4999	Projek Ilmiah Tahun Akhir/ <i>Final Year Academic Project</i>	6	0	6
PRT3003	Pertanian, Persekitaran dan Sistem Makanan/ <i>Agriculture, Environment And Food System</i>	3	3	0
PRT3007	Sistem Pengeluaran Pertanian/ <i>Agriculture Production System</i>	3	3	0
SHW3003	Amalan Ladang: Pengeluaran Ternakan/ <i>Farm Practice : Livestock Production</i>	1	0	1
SST3005	Sains Tanah Asas/ <i>Fundamentals of Soil Science</i>	3	2	1
TKP3002	Amalan Ladang: Akuakultur/ <i>Farm Practices : Aquaculture</i>	1	0	1

3. Kursus Elektif/ *Elective Courses* ( 33 kredit/credits)

KOD KURSUS/ <i>COURSE CODE</i>	NAMA KURSUS/ <i>COURSE NAME</i>	Kr	K	A
BBI2416	<i>Business English</i>	3	3	0
DCE3408	Pembangunan Kepemimpinan/ <i>Leadership Development</i>	3	3	0
EPT3202	Pengurusan Ladang/ <i>Farm Management</i>	3	2	1
EPT4201	Analisis Keputusan Pertanian/ <i>Agricultural Decision Analysis</i>	3	3	0
EPT4303	Perdagangan Serahan Hadapan dan Opsyen/ <i>Futures and Options Trading</i>	3	3	0

PPT4202	Perancangan dan Pengurusan Projek Perniagaantani/ <i>Agribusiness Project Planning and Management</i>	3	2	1
PPT4203	Pengurusan Strategik Perniagaantani/ <i>Agribusiness Strategic Management</i>	3	2	1
PPT4206	Pengurusan Koperasi Pertanian/ <i>Management of Agricultural Cooperative</i>	3	3	0
PPT4209	Sistem Pengurusan Perladangan/ <i>Plantation Management Systems</i>	3	3	0
PPT4301	Pemasaran Perniagaantani/ <i>Agribusiness Marketing</i>	3	2	1
PPT4302	Pemasaran Perniagaantani Antarabangsa/ <i>International Agribusiness Marketing</i>	3	2	1
PPT4303	E-Perniagaantani/ <i>E-Agribusiness</i>	3	2	1
PPT4350	Pengurusan Perniagaantani Kecil dan Sederhana/ <i>Small and Medium Agribusiness Management</i>	3	2	1
PPT4402	Pengurusan Kewangan Perniagaantani	3	3	0
PPT4501	Polisi dan Peraturan Perniagaantani/ <i>Agribusiness Policy and Regulations</i>	3	3	0
PPT4503	Isu Semasa Perniagaantani/ <i>Current Issues In Agribusiness</i>	3	3	0
PPT4801	Teknik Kuantitatif Perniagaantani/ <i>Quantitative Techniques In Agribusiness</i>	3	2	1
TKP4203	Perencanaan Program Pengembangan Pertanian/ <i>Program Planning in Agricultural Extension</i>	3	2	1
BBx24xx	Bahasa Asing I/ <i>Foreign Language I</i>			

Nota/ Notes : Kr = Jam Kredit/ Credit Hour, K = Kredit/ Credit, 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	Graduation Requirements for 4-year programmes
1 & 2	3 BBI + 3 CEL + 24 LAX points
3 & 4	2 BBI + 2 CEL + 36 LAX points
5 & 6	3 CEL + 36 LAX points

**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
AGR3001	Amalan ladang: Tanaman Makanan/ <i>Farm Practice: Food Crops</i>	1	0	1
FST3003	Pengenalan kepada Sains Makanan/ <i>Introduction to Food Science</i>	3	3	0
KOM3403	Pengucapan Awam/ <i>Public Oration</i>	3	3	0
PPT3001	Pengenalan kepada Sistem Perniagaantani Malaysia/ <i>Introduction to Malaysia Agribusiness System</i>	3	3	0
PRT2008	Pertanian dan Manusia/ <i>Agriculture and Man</i>	2	2	0
MTH3004	Pengenalan kepada Matematik Ekonomi dan Perniagaan/ <i>Introduction to Mathematics Economics and Business</i>	4	3	1
SKP2203	Tamadun Islam dan Tamadun Asia/ <i>Islamic and Asian Civilization</i>	2	2	0
	Kokurikulum/ <i>Co-Curriculum</i>	1	0	1
	<b>JUMLAH/ TOTAL</b>	<b>19</b>	<b>16</b>	<b>3</b>

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

KOD KURSUS/ COURSE CODE	NAMA KURSUS/COURSE NAME	Kr	K	A
BBI2423	Academic Interaction and Presentation	3	2	1
PPT3201	Prinsip Pengurusan Perniagaantani/ <i>Principles of Agribusiness Management</i>	3	3	0
PPT3401	Perakaunan Perniagaantani/ <i>Agribusiness Accounting</i>	4	3	1
PRT3003	Pertanian, Persekitaran dan Sistem Makanan/ <i>Agriculture, Environment And Food System</i>	3	3	0
SKP2204	Hubungan Etnik/ <i>Ethnic Relations</i>	2	2	0
SST3005	Sains Tanah Asas/ <i>Fundamentals of Soil Science</i>	3	2	1
	Ko-Kurikulum/ <i>Co-Curriculum</i>	1	0	1
	<b>JUMLAH/ TOTAL</b>	<b>19</b>	<b>15</b>	<b>4</b>

## TAHUN 2/ 2ND YEAR

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

KOD KURSUS/ COURSE CODE	NAMA KURSUS/COURSE NAME	Kr	K	A
BBI2424	Academic Writing	3	2	1
EPT3102	Ekonomi Pertanian/ <i>Agricultural Economics</i>	3	2	1
PPT3302	Prinsip Pemasaran Perniagaantani/ <i>Principle of Agribusiness Marketing</i>	3	3	0
PPT3402	Perakaunan Kos dan Pengurusan Perniagaantani/ <i>Agribusiness Cost and Management Accounting</i>	3	2	1
PRT3007	Sistem Pengeluaran Pertanian/ <i>Agriculture Production System</i>	3	3	0
	Elektif/ <i>Elective</i>	3	3	0
	<b>JUMLAH/ TOTAL</b>	<b>18</b>	<b>15</b>	<b>3</b>

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

KOD KURSUS/ COURSE CODE	NAMA KURSUS/COURSE NAME	Kr	K	A
FCE3204	Kemahiran Berfikir/ <i>Thinking Skills</i>	2	2	0
MGM3351	Undang-undang Komersial/ <i>Commercial Laws</i>	3	3	0
PPT3801	Statistik dalam Perniagaantani/ <i>Statistics in Agribusiness</i>	3	2	1
SKP2101	Kenegaraan Malaysia/ <i>Malaysian Nationhood</i>	3	3	0
TKP3002	Amalan Ladang: Akuakultur/ <i>Farm Practice : Aquaculture</i>	1	0	1
	Elektif/ <i>Elective</i>	3	3	0
	Elektif/ <i>Elective</i>	3	3	0
	<b>JUMLAH/ TOTAL</b>	<b>18</b>	<b>16</b>	<b>2</b>

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

KOD KURSUS/ COURSE CODE	NAMA KURSUS/COURSE NAME	Kr	K	A
PPT4602	Kaedah Penyelidikan Perniagaantani/ <i>Agribusiness Research Methods</i>	3	2	1
PPT4701	Keusahawanan Perniagaantani/ <i>Agribusiness Entrepreneurship</i>	3	1	2

SHW3003	Amalan Ladang : Pengeluaran Ternakan/ <i>Farm Practice: Livestock Production</i>	1	0	1
	Elektif/ <i>Elective</i>	3	3	0
	Elektif/ <i>Elective</i>	3	3	0
	Elektif/ <i>Elective</i>	3	3	0
	<b>JUMLAH/ TOTAL</b>	<b>16</b>	<b>12</b>	<b>4</b>

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

KOD KURSUS/ COURSE CODE	NAMA KURSUS/COURSE NAME	Kr	K	A
PPT4204	Ekonomi Perniagaantani/ <i>Agribusiness Economics</i>	3	3	0
PPT4999	Projek Ilmiah Tahun Akhir/ <i>Final Year Academic Project</i>	3	0	3
	Elektif/ <i>Elective</i>	3	3	0
	Elektif/ <i>Elective</i>	3	3	0
	Elektif/ <i>Elective</i>	3	3	0
	<b>JUMLAH/ TOTAL</b>	<b>15</b>	<b>12</b>	<b>3</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
PPT4304	Pengurusan Rantaian Bekalan Produk Makanan/ <i>Food Product Supply Chain Management</i>	3	2	1
PPT4999	Projek Ilmiah Tahun Akhir/ <i>Final Year Academic Project</i>	3	0	3
	Elektif/ <i>Elective</i>	3	3	0
	Elektif/ <i>Elective</i>	3	3	0
	<b>JUMLAH/ TOTAL</b>	<b>12</b>	<b>8</b>	<b>4</b>

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

KOD KURSUS/ COURSE CODE	NAMA KURSUS/COURSE NAME	Kr	K	A
PPT4901	Latihan Industri Perniagaantani/ <i>Agribusiness Industrial Training</i>	12	0	12
	<b>JUMLAH/ TOTAL</b>	<b>12</b>	<b>0</b>	<b>12</b>

**STRUKTUR KURIKULUM/ CURRICULUM STRUCTURE**

**Nama Program** : **Bachelor Sains Akuakultur/ Bachelor Of Aquaculture Science**  
**Jumlah Kredit Bergraduat** : **127 Jam Kredit/ Credit Hours**  
**Tempoh Pengajian** : **8 Semester/ semesters ( 4 Tahun/ Years )**

1. Kursus Universiti/ *University Courses* (22 kredit/ *credits*)

KOD KURSUS/ COURSE CODE	NAMA KURSUS/COURSE NAME	Kr	K	A
BBI2423	<i>Academic Interaction and Presentation</i>	3	2	1
BBI2424	<i>Academic Writing</i>	3	2	1
FCE3204	<i>Kemahiran Berfikir/ Thinking Skills</i>	2	2	0
KOM3403	<i>Pengucapan Awam/ Public Oration</i>	3	3	0
PRT2008	<i>Pertanian dan Manusia/ Agriculture and Man</i>	2	2	0
SKP2101	<i>Kenegaraan Malaysia/ Malaysian Nationhood</i>	3	3	0
SKP2203	<i>Tamadun Islam dan Tamadun Asia/ Islamic Civilization and Asian Civilization</i>	2	2	0
SKP2204	<i>Hubungan Etnik/ Ethnic Relations</i>	2	2	0
QKS2112	<i>Renang Asas/ Basic Swimming</i>	1	0	1
QKSXXXX	<i>Kokurikulum Berkredit</i>	1	0	1

Pelajar diwajibkan mengambil satu kredit kursus Renang Asas (QKS2112) bagi memastikan pelajar mempunyai kemahiran renang dan keselamatan air sebagai nilai tambah / *Students are required to take one credit course Basic Swimming (QKS2112) to ensure that students have basic swimming skills and water safety as a value-added*

2. Kursus Teras/ *Core Courses* (72 kredit/ *credits*)

KOD KURSUS/ COURSE CODE	NAMA KURSUS/COURSE NAME	Kr	K	A
EPT3100	<i>Prinsip Ekonomi Pertanian/ Principles of Agricultural Economics</i>	3	3	0
PPT3301	<i>Prinsip Pengurusan dan Pemasaran Pertanian/ Principles of Agricultural Management and Marketing</i>	3	3	0
PRT3007	<i>Sistem Pengeluaran Pertanian/ Agriculture Production System</i>	3	3	0
AKU3103	<i>Iktiologi/ Ichthyology</i>	3	2	1
AKU3104	<i>Fisiologi Ikan/ Fish Physiology</i>	3	2	1
AKU3105	<i>Biologi Invertebrat Akuatik/Aquatic Invertebrate Biology</i>	3	2	1
AKU3106	<i>Botani Akuatik/ Aquatic Botany</i>	3	2	1
AKU3201	<i>Prinsip Akuakultur/ Principles of Aquaculture</i>	3	2	1
AKU3301	<i>Genetik dan Pembiakbakaan Ikan/ Fish Genetics and Breeding</i>	3	2	1

AKU3302	Teknologi Pembenihan Ikan dan Pengurusan Fri/ <i>Fish Seed Technology and Fry Management</i>	3	2	1
AKU3401	Pemakanan Akuakultur/ <i>Aquaculture Nutrition</i>	3	2	1
AKU3501	Pengurusan Kesihatan Ikan/ <i>Fish Health Management</i>	3	2	1
AKU3601	Kualiti Air dan Tanah dalam Akuakultur/ <i>Water and Soil Quality in Aquaculture</i>	3	2	1
AKU3602	Ekologi Akuatik/ <i>Aquatic Ecology</i>	3	2	1
AKU4901	Latihan Industri/ <i>Industrial Training</i>	12	0	12
AKU4999	Projek Ilmiah Tahun Akhir/ <i>Final Year Project</i>	6	0	6
PPT3701	Keusahawanan Pertanian/ <i>Agricultural Entrepreneurship</i>	3	1	2
PRT3402	Biokimia Pertanian/ <i>Agricultural Biochemistry</i>	3	2	1
SHW3602	Statistik Sains Haiwan/ <i>Statistics for Animal Science</i>	3	2	1
SHW4600	Methodologi Penyelidikan/ <i>Research Methodology</i>	3	2	1

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

KOD KURSUS/ COURSE CODE	NAMA KURSUS/COURSE NAME	Kr	K	A
ACT2111	Pengantar Perancangan dan Penggunaan Maklumat Perakaunan/ <i>Introduction to Planning and Use of Financial Information</i>	3	3	0
AKU4101	Penilaian Dan Pengurusan Sumber Perikanan/ <i>Fisheries Resource Assessment and Management</i>	3	2	1
AKU4102	Limnologi/ <i>Limnology</i>	3	2	1
AKU4201	Sistem Akuakultur/ <i>Aquaculture Systems</i>	3	2	1
AKU4202	Kultur Ikan dan Tumbuhan Akuatik Hiasan/ <i>Culture of Ornamental Fish and Aquatic Plants</i>	3	2	1
AKU4221	Kultur Krustasea/ <i>Crustacean Culture</i>	3	2	1
AKU4231	Kultur Molusk/ <i>Mollusc Culture</i>	3	2	1
AKU4242	Kultur Flora Akuatik/ <i>Culture of Aquatic Flora</i>	3	2	1
AKU4401	Teknologi Makanan Akuakultur/ <i>Aquafeed Technology</i>	3	1	2
AKU4402	Pengeluaran Makanan Hidup dalam Akuakultur/ <i>Live Food Production in Aquaculture</i>	3	2	1
AKU4501	Mikrobiologi Akuatik/ <i>Aquatic Microbiology</i>	3	2	1

AKU4502	Imunologi Ikan/ <i>Fish Immunology</i>	3	2	1
AKU4601	Ekologi dan Pengurusan Tanah Basah/ <i>Ecology and Management of Wetlands</i>	3	2	1
AKU4701	Teknologi Maklumat dan Komunikasi dalam Akuakultur/ <i>Information and Communications Technology in Aquaculture</i>	3	1	2
AKU4801	Perikanan Rekreasi dalam Ekopelancongan Perairan Darat/ <i>Recreational Fisheries in Inland Waters Ecotourism</i>	3	2	1
AKU4802	Biologi Molekul Dalam Akuakultur/ <i>Molecular Biology in Aquaculture</i>	3	2	1
TKP3201	Pengembangan Pertanian/ <i>Agricultural Extension</i>	3	2	1
TKP 3501	Mekanisasi Pertanian/ <i>Agriculture Mechanisation</i>	3	2	1
TKP 4802	Kejuruteraan Akuakultur/ <i>Aquaculture Engineering</i>	3	2	1
BBx24xx	Bahasa Asing/ <i>Foreign Language</i>	3	3	0
BBx24xx	Bahasa Asing/ <i>Foreign Language</i>	3	3	0
KOC3301	Pengenalan Komunikasi Korporat/ <i>Introduction to Corporate Communication</i>	3	3	0

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

**Nota Penting/Notes :**

1. Pelajar mestilah memilih **33 kredit** daripada kursus elektif termasuk **6 kredit** kursus luar Fakulti (sains sosial dan kemasyarakatan) dengan persetujuan Ketua Jabatan. Pembentukan kursus baharu Jabatan akan digubal dari semasa ke semasa mengikut keperluan terkini dan pelajar yang sedang mengikuti program ini boleh mengambil kursus tersebut sebagai kursus elektif bagi memenuhi keperluan bergraduasi dengan persetujuan Ketua Jabatan
2. 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
3. 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	Graduation Requirements for 4-year programmes
1 & 2	3 BBI + 3 CEL + 24 LAX points
3 & 4	2 BBI + 2 CEL + 36 LAX points
5 & 6	3 CEL + 36 LAX points

**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
AKU3103	Iktiologi/ <i>Ichthyology</i>	3	2	1
BBI2423	<i>Academic Interaction and Presentation</i>	3	2	1
PRT2008	Pertanian dan Manusia/ <i>Agriculture and Man</i>	2	2	0
AKU3602	Ekologi Akuatik/ <i>Aquatic Ecology</i>	3	2	1
SKP2101	Kenegaraan Malaysia/ <i>Malaysian Nationhood</i>	3	3	0
SKP2203	Tamadun Islam dan Tamadun Asia/ <i>Islamic Civilization and Asian Civilization</i>	2	2	0
QKS2112	Renang Asas/ <i>Basic Swimming</i>	1	0	1
<b>JUMLAH/ TOTAL</b>		<b>17</b>	<b>13</b>	<b>4</b>

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

KOD KURSUS/ COURSE CODE	NAMA KURSUS/COURSE NAME	Kr	K	A
AKU3105	Biologi Invertebrat Akuatik/ <i>Agriculture Production System</i>	3	2	1
AKU3106	Botani Akuatik/ <i>Aquatic Botany</i>	3	2	1
PRT3007	Sistem Pengeluaran Pertanian/ <i>Agriculture Production System</i>	3	3	0
BBI2424	<i>Academic Writing</i>	3	2	1
PRT3402	Biokimia Pertanian/ <i>Agricultural Biochemistry</i>	3	2	1
SKP2204	Hubungan Etnik/ <i>Ethnic Relations</i>	2	2	0
	Ko-Kurikulum/ <i>Co-Curriculum</i>	1	0	1
<b>JUMLAH/ TOTAL</b>		<b>18</b>	<b>12</b>	<b>6</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
KOM3403	Pengucapan Awam/ <i>Public Oration</i>	3	3	0
AKU3201	Prinsip Akuakultur/ <i>Principles of Aquaculture</i>	3	2	1
AKU3104	Fisiologi Ikan/ <i>Fish Physiology</i>	3	2	1
AKU3601	Kualiti Air dan Tanah dalam Akuakultur/	3	2	1

<i>Water and Soil Quality in Aquaculture</i>				
EPT3100	Prinsip Ekonomi Pertanian/ <i>Principles of Agricultural Economics</i>	3	3	0
SHW3602	Statistik Sains Haiwan/ <i>Statistics for Animal Science</i>	3	2	1
<b>JUMLAH/ TOTAL</b>		<b>18</b>	<b>14</b>	<b>4</b>

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

KOD KURSUS/ COURSE CODE	NAMA KURSUS/COURSE NAME	Kr	K	A
AKU3501	Pengurusan Kesihatan Ikan/ <i>Fish Health Management</i>	3	2	1
AKU3301	Genetik dan Pembiakbakaan Ikan/ <i>Fish Genetics and Breeding</i>	3	2	1
AKU3302	Teknologi Pembenuhan Ikan dan Pengurusan Fri/ <i>Fish Seed Technology and Fry Management</i>	3	2	1
AKU3401	Pemakanan Akuakultur/ <i>Aquaculture Nutrition</i>	3	2	1
PPT3301	Prinsip Pengurusan dan Pemasaran Pertanian/ <i>Principles of Agricultural Management and Marketing</i>	3	3	0
FCE3204	Kemahiran Berfikir/ <i>Thinking Skills</i>	2	2	0
<b>JUMLAH/ TOTAL</b>		<b>17</b>	<b>13</b>	<b>4</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
PPT3701	Keusahawanan Pertanian/ <i>Agricultural Entrepreneurship</i>	3	1	2
SHW4600	Methodologi Penyelidikan/ <i>Research Methodology</i>	3	2	1
	Elektif/ <i>Electives</i>	9	6	3
<b>JUMLAH/ TOTAL</b>		<b>15</b>	<b>9</b>	<b>6</b>

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

KOD KURSUS/ COURSE CODE	NAMA KURSUS/COURSE NAME	Kr	K	A
AKU4999A	Projek Ilmiah Tahun Akhir/ <i>Final Year Project</i>	3	0	3
	Elektif/ <i>Electives</i>	12	8	4
<b>JUMLAH/ TOTAL</b>		<b>15</b>	<b>8</b>	<b>7</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
AKU4999B	Projek Ilmiah Tahun Akhir/ <i>Final Year Project</i>	3	0	3
	Elektif/ <i>Electives</i>	12	8	4
<b>JUMLAH/ TOTAL</b>		<b>15</b>	<b>8</b>	<b>7</b>

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

KOD KURSUS/ COURSE CODE	NAMA KURSUS/COURSE NAME	Kr	K	A
AKU 4901	Latihan Industri/ <i>Industrial Training</i>	12	0	12
<b>JUMLAH/ TOTAL</b>		<b>12</b>	<b>0</b>	<b>12</b>

## STRUKTUR KURIKULUM/ CURRICULUM STRUCTURE

Nama Program : **Bachelor Sains Haiwan/ Bachelor of Animal Science**  
Jumlah Kredit Bergraduat : **133 Jam Kredit/ Credits Hours**  
Tempoh Pengajian : **8 Semester/ Semesters ( 4 Tahun/ Years )**

### 1. Kursus Universiti/ University Courses ( 22 kredit/ credits )

KOD KURSUS/ COURSE CODE	NAMA KURSUS/COURSE NAME	Kr	K	A
BBI2423	<i>Academic Interaction and Presentation</i>	3	2	1
BBI2424	<i>Academic Writing</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
SKP2203	<i>Tamadun Islam dan Tamadun Asia/ Islamic Civilization and Asian Civilization</i>	2	2	0
SKP2204	<i>Hubungan Etnik/ Ethnic Relations</i>	2	2	0
KOM3403	<i>Pengucapan Awam/ Public Oration</i>	3	3	0
FCE3204	<i>Kemahiran Berfikir/ Thinking Skills</i>	2	2	0
	<i>Kokurikulum/ Co-curriculum</i>	2	0	2

Pelajar yang mendapat MUET band 1 atau 2 perlu mengambil kursus BBI2422 Reading for Academic Purposes sebagai pra-syarat untuk mengambil kursus BBI2423 pada semester pertama. Pelajar yang mendapat MUET band 5 atau 6 adalah dikecualikan mengambil kursus BBI2423 dan BBI2424.

### 2. Kursus Teras/ Core Courses ( 78 kredit/ credits )

KOD KURSUS/ COURSE CODE	NAMA KURSUS/COURSE NAME	Kr	K	A
EPT3100	<i>Prinsip Ekonomi Pertanian/ Principles of Agricultural Economics</i>	3	3	0
PRT3007	<i>Sistem Pengeluaran Pertanian/ Agriculture Production System</i>	3	3	0
PPT3301	<i>Prinsip Pengurusan dan Pemasaran Pertanian/ Principles of Agricultural Management and Marketing</i>	3	3	0
PPT3701	<i>Keusahawanan Pertanian/ Agricultural Entrepreneurship</i>	3	1	2
PRT3402	<i>Biokimia Pertanian/ Agricultural Biochemistry</i>	3	2	1
SHW3103	<i>Kelakuan dan Kebajikan Haiwan/ Animal Behaviour and Welfare</i>	3	3	0
SHW3104	<i>Pengurusan Kesihatan Haiwan/ Animal Health Management</i>	3	2	1

SHW3200	Anatomi dan Fisiologi Haiwan Domestik I/ <i>Anatomy and Physiology of Domestic Animals I</i>	3	2	1
SHW3201	Anatomi dan Fisiologi Haiwan Domestik II/ <i>Anatomy and Physiology of Domestic Animals II</i>	3	2	1
SHW3203	Reproduksi Haiwan/ <i>Animal Reproduction</i>	3	2	1
SHW3303	Genetik Haiwan/ <i>Animal Genetics</i>	3	2	1
SHW3304	Pembiakbakaan Ternakan/ <i>Livestock Breeding</i>	3	2	1
SHW3403	Pemakanan Haiwan Asas/ <i>Basic Animal Nutrition</i>	3	2	1
SHW3405	Sains Pastura/ <i>Pasture Science</i>	3	2	1
SHW3501	Sains Haiwan Pedaging/ <i>Meat Animal Science</i>	3	2	1
SHW3502	Sains Tenusu/ <i>Dairy Science</i>	3	2	1
SHW3510	Sains Poltri/ <i>Poultry Science</i>	3	2	1
SHW3511	Sains Babi/ <i>Swine Science</i>	3	3	0
SHW3602	Statistik Sains Haiwan/ <i>Statistics for Animal Science</i>	3	2	1
SHW3700	Pengurusan Sisa Ternakan/ <i>Livestock Waste Management</i>	3	2	1
SHW 4999	Projek Ilmiah Tahun Akhir/ <i>Final Year Project</i>	6	0	6
SHW4901	Latihan Industri/ <i>Industrial Training</i>	12	0	12

3. Kursus Elektif/ *Elective Courses* ( 33 kredit/ *credits* )

KOD KURSUS/ <i>COURSE CODE</i>	NAMA KURSUS/ <i>COURSE NAME</i>	Kr	K	A
SHW4100	Hidupan Liar dan Haiwan Rekreasi/ <i>Wildlife and Recreational Animals</i>	3	2	1
SHW4105	Sains Daging/ <i>Meat Science</i>	3	2	1
SHW4201	Fisiologi Persekitaran/ <i>Environmental Physiology</i>	3	3	0
SHW4300	Genetik dan Pembiakbakaan Ternakan Gunaan/ <i>Applied Livestock Genetics and Breeding</i>	3	2	1
SHW4301	Sitogenetik Haiwan/ <i>Animal Cytogenetics</i>	3	2	1
SHW4401	Teknologi Pemprosesan Makanan Haiwan/ <i>Feed Processing Technology</i>	3	3	0
SHW4402	Bioteknologi dalam Makanan Haiwan/ <i>Biotechnology in Animal Feed</i>	3	3	0
SHW4403	Makanan dan Pemberian Makanan/ <i>Feeds and Feeding</i>	3	3	0

SHW4404	Pemakanan Haiwan Gunaan/ <i>Applied Animal Nutrition</i>	3	2	1
SHW4500	Rekabentuk dan Infrastruktur Ladang Ternakan/ <i>Livestock Farm Design and Infrastructure</i>	3	2	1
SHW4501	Produksi Ruminan Kecil/ <i>Small Ruminant Production</i>	3	2	1
SHW4502	Produksi Tenusu/ <i>Dairy Production</i>	3	2	1
SHW4511	Sains Babi Lanjutan/ <i>Advanced Swine Science</i>	3	2	1
SHW4512	Produksi Ayam Penelur/ <i>Layer Production</i>	3	2	1
SHW4513	Produksi Ayam Pedaging/ <i>Broiler Production</i>	3	2	1
SHW4540	Pengurusan Ekuin/ <i>Equine Management</i>	3	2	1
SHW4600	Metodologi Penyelidikan/ <i>Research Methodology</i>	3	2	1
SHW4703	Teknologi Pemprosesan Daging/ <i>Meat Processing Technology</i>	3	2	1
SHW4801	Perancangan Dan Penilaian Sumber/ <i>Resource Planning and Evaluation</i>	3	2	1
KOC3301	Pengenalan Komunikasi Korporat/ <i>Introduction to Corporate Communication</i>	3	3	0
RSB4630	Metodologi Inovasi/ <i>Innovation Methodology</i>	3	1	2
BBx2xxx	Bahasa Asing I/ <i>Foreign Language I</i>	3	3	0
BBx2xxx	Bahasa Asing II/ <i>Foreign Language II</i>	3	3	0

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

Nota/ Note :

1. Pelajar mesti memilih **26 kredit kursus elektif** kursus jabatan yang tersenarai dan **6 kredit** dipilih daripada kursus luar Fakulti (sains sosial dan sains kemasyarakatan) dengan persetujuan Ketua Jabatan. Pembentukan kursus baharu Jabatan akan digubal dari semasa ke semasa mengikut keperluan terkini dan pelajar yang sedang mengikuti program ini boleh mengambil kursus tersebut sebagai kursus elektif bagi memenuhi keperluan bergraduasi dengan persetujuan Ketua Jabatan.
2. 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
3. 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	Graduation Requirements for 4-year programmes
1 & 2	3 BBI + 3 CEL + 24 LAX points
3 & 4	2 BBI + 2 CEL + 36 LAX points
5 & 6	3 CEL + 36 LAX points

**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
BBI2423	<i>Academic Interaction and Presentation</i>	3	2	1
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>Islamic Civilization and Asian Civilization</i>	2	2	0
PRT3007	Sistem Pengeluaran Pertanian/ <i>Agriculture Production System</i>	3	3	0
SHW 3200	Anatomi dan Fisiologi Haiwan Domestik I/ <i>Anatomy and Physiology of Domestic Animals I</i>	3	2	1
	Kokurikulum/ <i>Co-Curriculum</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
BBI2424	<i>Academic Writing</i>	3	2	1
EPT3100	Prinsip Ekonomi Pertanian/ <i>Principles of Agricultural Economics</i>	3	3	0
PRT3402	Biokimia Pertanian/ <i>Agricultural Biochemistry</i>	3	2	1
SKP2204	Hubungan Etnik/ <i>Ethnic Relations</i>	2	2	0
SHW3602	Statistik Sains Haiwan/ <i>Statistics for Animal Science</i>	3	2	1
SHW3201	Anatomi dan Fisiologi Haiwan Domestik II/ <i>Anatomy and Physiology of Domestic Animals II</i>	3	2	1
	Kokurikulum/ <i>Co-Curriculum</i>	1	0	1
	<b>JUMLAH/ TOTAL</b>	<b>18</b>	<b>13</b>	<b>5</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
FCE3204	Kemahiran Berfikir/ <i>Thinking Skills</i>	2	2	0

SHW3403	Pemakanan Haiwan Asas/ <i>Basic Animal Nutrition</i>	3	2	1
SHW3103	Kelakuan dan Kebajikan Haiwan/ <i>Animal Behaviour and Welfare</i>	3	3	0
SHW3203	Reproduksi Haiwan/ <i>Animal Reproduction</i>	3	2	1
SHW3303	Genetik Haiwan/ <i>Animal Genetics</i>	3	2	1
SHW3405	Sains Pastura/ <i>Pasture Science</i>	3	2	1
<b>JUMLAH/ TOTAL</b>		<b>17</b>	<b>13</b>	<b>4</b>

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

KOD KURSUS/ COURSE CODE	NAMA KURSUS/COURSE NAME	Kr	K	A
PPT3301	Prinsip Pengurusan dan Pemasaran Pertanian/ <i>Principles of Agricultural Management and Marketing</i>	3	3	0
SHW3304	Pembiakbakaan Ternakan/ <i>Livestock Breeding</i>	3	2	1
SHW3501	Sains Haiwan Pedaging/ <i>Meat Animal Science</i>	3	2	1
SHW3502	Sains Tenusu/ <i>Dairy Science</i>	3	2	1
SHW3510	Sains Poltri/ <i>Poultry Science</i>	3	2	1
SHW3511	Sains Babi/ <i>Swine Science</i>	3	3	0
<b>JUMLAH/ TOTAL</b>		<b>18</b>	<b>14</b>	<b>4</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
PPT3701	Keusahawanan Pertanian/ <i>Agricultural Entrepreneurship</i>	3	1	2
SHW3104	Pengurusan Kesihatan Haiwan/ <i>Animal Health Management</i>	3	2	1
KOM3403	Pengucapan Awam/ <i>Public Oration</i>	3	3	0
	Elektif/ <i>Elective</i>	9	6	3
<b>JUMLAH/ TOTAL</b>		<b>18</b>	<b>13</b>	<b>5</b>

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

KOD KURSUS/ COURSE CODE	NAMA KURSUS/COURSE NAME	Kr	K	A
SHW3700	Pengurusan Sisa Ternakan/ <i>Livestock Waste Management</i>	3	2	1

SHW4999A	Projek Ilmiah Tahun Akhir/ <i>Final Year Project</i>	3	0	3
	Elektif/ <i>Elective</i>	12	11	1
	<b>JUMLAH/ TOTAL</b>	<b>18</b>	<b>13</b>	<b>5</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
SHW4999B	Projek Ilmiah Tahun Akhir/ <i>Final Year Project</i>	3	0	3
	Elektif/ <i>Elective</i>	12	9	3
	<b>JUMLAH/ TOTAL</b>	<b>15</b>	<b>9</b>	<b>6</b>

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

KOD KURSUS/ COURSE CODE	NAMA KURSUS/COURSE NAME	Kr	K	A
SHW4901	Latihan Industri/ <i>Industrial Training</i>	12	0	12
	<b>JUMLAH/ TOTAL</b>	<b>12</b>	<b>0</b>	<b>12</b>

## STRUKTUR KURIKULUM/ CURRICULUM STRUCTURE

Nama Program	:	<b>Bachelor Sains Pengurusan Perladangan/ <i>Bachelor of Science Plantation Management</i></b>
Jumlah Kredit Bergraduat	:	<b>126 Jam Kredit/ <i>Credits Hours</i></b>
Tempoh Pengajian	:	<b>8 Semester/ <i>Semesters</i> ( 4 Tahun/ <i>Years</i> )</b>

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

KOD KURSUS/ <i>COURSE CODE</i>	NAMA KURSUS/ <i>COURSE NAME</i>	Kr	K	A
BBI2423	<i>Academic Interaction and Presentation</i>	3	2	1
BBI2424	<i>Academic Writing</i>	3	2	1
FCE3204	<i>Kemahiran Berfikir/ <i>Thinking Skills</i></i>	2	2	0
KOM3403	<i>Pengucapan Awam/ <i>Public Oration</i></i>	3	3	0
PPT3701	<i>Keusahawanan Pertanian/ <i>Agricultural Entrepreneurship</i></i>	3	1	2
PRT2008	<i>Pertanian dan Manusia/ <i>Agriculture and Man</i></i>	2	2	0
SKP2101	<i>Kenegaraan Malaysia/ <i>Malaysian Nationhood</i></i>	3	3	0
SKP2203	<i>Tamadun Islam dan Tamadun Asia/ <i>Islamic Civilization and Asian Civilization</i></i>	2	2	0
SKP2204	<i>Hubungan Etnik/ <i>Ethnic Relations</i></i>	2	2	0
	<i>Kokutikulum/ <i>Co-curriculum</i></i>	1	0	1
	<i>Kokutikulum/ <i>Co-curriculum</i></i>	1	0	1

Pelajar yang mendapat MUET band 1 atau 2 perlu mengambil kursus BBI2422 Reading for Academic Purposes sebagai pra-syarat untuk mengambil kursus BBI2423 pada semester pertama. Pelajar yang mendapat MUET band 5 atau 6 adalah dikecualikan mengambil kursus BBI2423 dan BBI2424.

### 2. Kursus Teras/ *Core Courses* ( 80 kredit/ *credits* )

KOD KURSUS/ <i>COURSE CODE</i>	NAMA KURSUS/ <i>COURSE NAME</i>	Kr	K	A
AGR3002	<i>Amalan ladang: Tanaman Perladangan/ <i>Farm Practices: <i>Plantation Crops</i></i></i>	1	0	1
AGR3101	<i>Botani Pertanian/ <i>Agricultural Botany</i></i>	3	2	1
AGR3102	<i>Prinsip Sains Rumpai/ <i>Principles of Weed Science</i></i>	3	2	1
AGR3302	<i>Fisiologi Tanaman Saka/ <i>Perennial Crop Physiology</i></i>	3	2	1
AGR3501	<i>Tanaman Perladangan/ <i>Plantation Crops</i></i>	2	2	0
PLP3104	<i>Entomologi Asas/ <i>Fundamentals of Entomology</i></i>	3	2	1

PLP3204	Patologi Tumbuhan Asas/ <i>Fundamentals of Plant Pathology</i>	3	2	1
PRT3204	Biometri/ <i>Biometri</i>	4	3	1
SST3005	Sains Tanah Asas/ <i>Fundamentals of Soil Science</i>	3	2	1
SST3604	Pengurusan Tanah Tanaman Perladangan/ <i>Soil Fertility for Plantation Crops</i>	3	1	2
SST4999	Projek Ilmiah Tahun Akhir/ <i>Final Year Project</i>	6	0	6
TKP3205	Komunikasi Pengembangan dan Demonstrasi Kaedah Pertanian/ <i>Agriculture Extension Communication and Method Demonstration</i>	3	2	1
TKP3501	Mekanisasi Pertanian/ <i>Agriculture Mechanization</i>	3	2	1
AGR3503	Tanaman Perladangan Industri Minor/ <i>Minor Industrial Plantation Crops</i>	3	1	2
AGR4510	Pengurusan Perladangan Kelapa Sawit/ <i>Oil Palm Plantation Management</i>	3	1	2
AGR4511	Pengurusan Perladangan Getah/ <i>Rubber Plantation Management</i>	3	1	2
EPT3102	Ekonomi Pertanian/ <i>Agricultural Economics</i>	3	2	1
MGM3113	Gelagat Organisasi/ <i>Organisational Behavior</i>	3	3	0
PPT3201	Prinsip Pengurusan Perniagaantani/ <i>Principles of Agribusiness Management</i>	3	3	0
PPT3401	Perakaunan Perniagaantani/ <i>Agribusiness Accounting</i>	4	3	1
PPT4209	Sistem Pengurusan Perladangan/ <i>Plantation Management Systems</i>	3	3	0
PRT4901	Latihan Industri/ <i>Industrial Training</i>	12	0	12
PRT3008	Keselamatan dan Kesejahteraan Ladang/ <i>Plantation Safety and Security</i>	3	1	2

3. Kursus Elektif/ *Elective Courses* ( 21 kredit/ *credits* )

KOD KURSUS/ COURSE CODE	NAMA KURSUS/COURSE NAME	Kr	K	A
<b>Kursus Elektif (Sains)-9 kredit</b>				
AGR3204	Pembiakbakaan Tumbuhan/ <i>Plant Breeding</i>	3	2	1
AGR4104	Sains Racun Herba/ <i>Herbicide Science</i>	3	2	1
AGR4509	Pengeluaran Tanaman Makanan/ <i>Production of Food Crops</i>	3	2	1
PLP4601	Sains Racun Perosak/ <i>Pesticide Science</i>	3	2	1
PRT4002	Pertanian Presisi/ <i>Precision Agriculture</i>	3	2	1

SST4202	Survei Tanah dan Pengkelasan Kesesuaian Guna Tanah/ <i>Soil Survey and Land Use Suitability Classification</i>	3	2	1
SST4303	Pemuliharaan Tanah/ <i>Soil Conservation</i>	3	2	1
TKP3001	Teknologi Pertanian Moden/ <i>Modern Agricultural Technology</i>	3	2	1
TKP3503	Pemprosesan Tanaman Perladangan/ <i>Plantation Crop Processing</i>	3	2	1
<b>Kursus Elektif (Pengurusan) -12 kredit</b>				
AGR4103	Pengurusan Rumpai Perladangan/ <i>Plantation Weed Management</i>	3	1	2
BBXXX1	Bahasa Asing 1/ <i>Foreign Language 1</i>	3	3	0
FHU3209	Perhutanan Tani/ <i>Agroforestry</i>	3	2	1
KOC3301	Pengenalan Komunikasi Korporat/ <i>Introduction to Corporate Communication</i>	3	3	0
MGM3351	Undang-undang Komersil/ <i>Commercial Law</i>	3	3	0
PLP4004	Pengurusan Perosak Tanaman Perladangan/ <i>Pest Management of Plantation Crops</i>	3	2	1
PPT4202	Perancangan dan Pengurusan Projek Perniagaantani/ <i>Agribusiness Project Planning and Management</i>	3	2	1
PPT4210	Pembangunan Sumber Manusia dalam Sektor Pertanian/ <i>Human Resource Development in Agricultural Sector</i>	3	3	0
PPT4302	Pemasaran Perniagaantani Antarabangsa/ <i>International Agribusiness Marketing</i>	3	2	1
SST4602	Kelestarian Perladangan dan Pengurusan Kualiti/ <i>Plantation Sustainability and Quality Management</i>	3	2	1

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

Nota/ Note :

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	Graduation Requirements for 4-year programmes
1 & 2	3 BBI + 3 CEL + 24 LAX points
3 & 4	2 BBI + 2 CEL + 36 LAX points
5 & 6	3 CEL + 36 LAX points

**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
AGR3101	Botani Pertanian/ <i>Agricultural Botany</i>	3	2	1
FCE3204	Kemahiran Berfikir/ <i>Thinking Skills</i>	2	2	0
PRT2008	Pertanian dan Manusia/ <i>Agriculture and Man</i>	2	2	0
AGR3302	Fisiologi Tanaman Saka/ <i>Perennial Crop Physiology</i>	3	2	1
SST3005	Sains Tanah Asas/ <i>Fundamentals of Soil Science</i>	3	2	1
SKP2203	Tamadun Islam dan Tamadun Asia/ <i>Islamic Civilization and Asian Civilization</i>	2	2	0
	Kokurikulum/ <i>Co-Curriculum</i>	1	0	1
	<b>JUMLAH/ TOTAL</b>	<b>16</b>	<b>12</b>	<b>4</b>

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

KOD KURSUS/ COURSE CODE	NAMA KURSUS/COURSE NAME	Kr	K	A
BBI2423	<i>Academic Interaction and Presentation</i>	3	2	1
KOM3403	Pengucapan Awam/ <i>Public Oration</i>	3	3	0
EPT3102	Ekonomi Pertanian/ <i>Agricultural Economics</i>	3	2	1
PLP3104	Entomologi Asas/ <i>Fundamentals of Entomology</i>	3	2	1
SKP 2204	Hubungan Etnik/ <i>Ethnic Relations</i>	2	2	0
SKP2101	Kenegaraan Malaysia/ <i>Malaysian Nationhood</i>	3	3	0
	Kokurikulum/ <i>Co-Curriculum</i>	1	0	1
	<b>JUMLAH/ TOTAL</b>	<b>18</b>	<b>14</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
AGR3102	Prinsip Sains Rumpai/ <i>Principles of Weed Science</i>	3	2	1
PPT3201	Prinsip Pengurusan Perniagaantani/ <i>Principles of Agribusiness Management</i>	3	3	0
BBI2424	<i>Academic Writing</i>	3	2	1

PPT3701	Keusahawanan Pertanian/ <i>Agricultural Entrepreneurship</i>	3	1	2
PLP3204	Patologi Tumbuhan Asas/ <i>Fundamentals of Plant Pathology</i>	3	2	1
MGM3113	Gelagat Organisasi/ <i>Organisational Behavior</i>	3	3	0
<b>JUMLAH/ TOTAL</b>		<b>18</b>	<b>13</b>	<b>5</b>

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

KOD KURSUS/ COURSE CODE	NAMA KURSUS/COURSE NAME	Kr	K	A
AGR3002	Amalan ladang: Tanaman Perladangan/ <i>Farm Practices: Plantation Crops</i>	1	0	1
AGR3501	Tanaman Perladangan/ <i>Plantation Crops</i>	2	2	0
AGR3503	Tanaman Perladangan Industri Minor/ <i>Minor Industrial Plantation Crops</i>	3	1	2
PRT3204	Biometri/ <i>Biometri</i>	4	3	1
PPT3401	Perakaunan Perniagaantani/ <i>Agribusiness Accounting</i>	4	3	1
	Elektif (Pengurusan I)/ <i>Elective</i>	3	3	0
<b>JUMLAH/ TOTAL</b>		<b>17</b>	<b>12</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
	Elektif (Pengurusan II)/ <i>Elective</i>	3	3	0
	Elektif (Pengurusan III)/ <i>Elective</i>	3	3	0
	Elektif (Pengurusan IV)/ <i>Elective</i>	3	3	0
	Elektif (Sains I)/ <i>Elective</i>	3	2	1
	Elektif (Sains II)/ <i>Elective</i>	3	2	1
	Elektif (Sains III)/ <i>Elective</i>	3	2	1
<b>JUMLAH/ TOTAL</b>		<b>18</b>	<b>15</b>	<b>3</b>

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

KOD KURSUS/ COURSE CODE	NAMA KURSUS/COURSE NAME	Kr	K	A
SST4999A	Projek Ilmiah Tahun Akhir/ <i>Final Year Project</i>	3	0	3
AGR4510	Pengurusan Perladangan Kelapa Sawit/ <i>Oil Palm Plantation Management</i>	3	1	2

AGR4511	Pengurusan Perladangan Getah/ <i>Rubber Plantation Management</i>	3	1	2
PPT4209	Sistem Pengurusan Perladangan/ <i>Plantation Management Systems</i>	3	3	0
SST3604	Pengurusan Tanah Tanaman Perladangan/ <i>Soil Fertility for Plantation Crops</i>	3	1	2
<b>JUMLAH/ TOTAL</b>		<b>15</b>	<b>6</b>	<b>9</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
SST4999B	Projek Ilmiah Tahun Akhir/ <i>Final Year Project</i>	3	0	3
PRT3008	Keselamatan dan Kesejahteraan Ladang/ <i>Plantation Safety and Security</i>	3	1	2
TKP3205	Komunikasi Pengembangan dan Demonstrasi Kaedah Pertanian/ <i>Agriculture Extension Communication and Method Demonstration</i>	3	2	1
TKP3501	Mekanisasi Pertanian/ <i>Agriculture Mechanization</i>	3	2	1
<b>JUMLAH/ TOTAL</b>		<b>15</b>	<b>9</b>	<b>6</b>

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

KOD KURSUS/ COURSE CODE	NAMA KURSUS/COURSE NAME	Kr	K	A
PRT4901	Latihan Industri/ <i>Industrial Training</i>	12	0	12
<b>JUMLAH/ TOTAL</b>		<b>12</b>	<b>0</b>	<b>12</b>



AKU3106      Botani Akuatik/ *Aquatic Botany*      3 (2+1)

Prasyarat : Tiada

Kursus ini meliputi taksonomi dan pengelasan pelbagai tumbuhan akuatik; alga, makrofit air tawar dan angiosperma marin (rumput laut dan bakau), pengumpulan, pengawetan dan ciri persekitarannya. Penggunaan dan kepentingan ekonomi tumbuhan akuatik, masalah dan kaedah pengawalan dibincangkan.

*This course covers the taxonomy and classification of diverse aquatic plants; algae, freshwater macrophytes and marine angiosperms (seagrass and mangrove), collection, preservation and its environmental characteristics. Utilization and economic importance of aquatic plants, problems and methods of control are discussed.*

AKU3201      Prinsip Akuakultur/ *Principles Of Aquaculture*      3 (2+1)

Prasyarat : Tiada

Kursus ini merangkumi kepentingan, sejarah dan status akuakultur terkini, pemilihan spesies, tapak dan sistem kultur, pengurusan pengeluaran, pengeluaran benih ikan dan kelestarian akuakultur.

*This course covers the importance, history and current status of aquaculture, selection of species, site and culture system, production management, seed production and sustainability of aquaculture.*

AKU3301      Genetik dan Pembiakbakaan Ikan/ *Fish Genetics And Breeding*      3 (2+1)

Prasyarat : Tiada

Kursus ini merangkumi konsep genetik dan pembiakbakaan ikan, pewarisan kualitatif dan kuantitatif, genetik populasi, penghibridan, kejuruteraan genetik dan manipulasi gen.

*This course covers concepts of fish genetics and breeding, qualitative and quantitative inheritance, population genetics, hybridization, genetic engineering and gene manipulation.*

AKU3302      Teknologi Pembenihan Ikan dan Pengurusan Fri/ *Fish Seed Technology And Fry Management*      3 (2+1)

Prasyarat : Tiada

Kursus ini merangkumi biologi pembiakan ikan, teknik pembenihan ikan, larvikultur, penyediaan kolam pendederan, pengurusan, pembungkusan dan pengangkutan fri.

*This course covers fish reproductive biology, fish seed production techniques, larviculture, nursery pond preparation, management, packaging and transportation of fry.*

AKU3401      Pemakanan Akuakultur/ *Aquaculture Nutrition*      3 (2+1)

Prasyarat : Tiada

Kursus ini merangkumi keperluan nutrien dalam makanan ikan, penghadaman dan metabolisme serta jenis, pemrosesan, penyimpanan, penilaian dan piawai diet. Amalan pemberian makanan yang betul ditekankan.

*This course covers nutrient requirements in fish feed, digestion and metabolism, and types, processing, storage, evaluation as well as standardization of diets. Good feeding practices are emphasized.*

AKU3501      Pengurusan Kesihatan Ikan/ *Fish Health Management*      3 (2+1)

Prasyarat : Tiada

Kursus ini merangkumi kepentingan amalan pengurusan yang baik, pengawalan dan pencegahan penyakit dalam akuakultur. Konsep patologi, mikrobiologi dan parasitologi berhubung dengan penyakit ikan, tatacara diagnosis, kawalan dan rawatan dibincangkan.

*This course covers the importance of good husbandry, control and prevention of diseases in aquaculture. Concepts of pathology, microbiology and parasitology in relation to fish diseases, diagnostic procedures, control and treatment are discussed.*

AKU3601      Kualiti Air dan Tanah dalam Akuakultur/ *Water and Soil Quality in Aquaculture*      3 (2+1)

Prasyarat : Tiada

Kursus ini meliputi analisis dan tafsir kualiti kimia dan fizik air tanah untuk akuakultur. Teori asas dalam kaedah analisis diberi penekanan.

*This course encompasses analysis and interpretation of chemical and physical qualities of water and soil for aquaculture. Fundamental theory in analytical methodology is emphasized.*

AU3602      Ekologi Akuatik / *Aquatic Ecology*      3 (2+1)

Prasyarat : Tiada

Kursus ini meliputi komponen utama ekologi akuatik termasuk struktur, proses dan fungsi pada tahap spesies, populasi, komuniti dan ekosistem. Pengeksploitan habitat serta sumber, pencemaran dan pemantauan serta teknik pemulihan dan pemuliharaan ekosistem akuatik dibincangkan.

*This course covers the major components of aquatic ecology including structure, processes and functions at species, population, community and ecosystem levels. Habitat and resource exploitation, pollution and monitoring as well as restoration and conservation techniques of aquatic ecosystems are discussed.*

AKU4101      Penilaian dan Pengurusan Sumber Perikanan/ *Fisheries Resource Assessment and Management*      3(2+1)

Prasyarat : Tiada

Kursus ini merangkumi pengelasan sumber perikanan, teknik dan dasar eksploitasi ikan, dinamik populasi dan pengurusan perikanan. Aplikasi perisian komputer dalam penilaian stok ikan dan pengurusan sumber perikanan yang lestari dibincangkan.

*This course covers the classification of fishery resources, fishing techniques and policies, population dynamics and management of fisheries. Application of computer software in fish stock assessment and sustainable fisheries resource management are discussed.*

AKU4102      Limnologi/ *Limnology*      3 (2+1)

Prasyarat : Tiada

Kursus ini merangkumi komponen biotik dan produktiviti biologi dalam sistem air tawar serta proses fiziko-kimia yang mempengaruhinya. Kepentingan dan aplikasi limnologi dalam pengurusan akuakultur air tawar ditekankan.

*This course covers the biotic components and biological productivity of freshwater systems, and the physico-chemical processes affecting it. The importance and application of limnology in fisheries management of freshwater aquaculture are emphasized.*



AKU4401      Teknologi Makanan Akuakultur/ *Aquafeed Technology*      3 (1+2)

Prasyarat : Tiada

Kursus ini meliputi proses pembuatan makanan akuakultur, pemilihan bahan, perumusan, pemprosesan dan kawalan mutu. Faktor yang mempengaruhi setiap proses tersebut ditekankan.

*This course covers processes in the making of aquafeed, selection of feed ingredients, formulation, processing and quality control that affect each of these processes are emphasized.*

AKU4402      Pengeluaran Makanan Hidup dalam Akuakultur/ *Live Food Production in Aquaculture*      3 (2+1)

Prasyarat : Tiada

Kursus ini merangkumi kepentingan makanan hidup dalam industri akuakultur, jenis makanan hidup, teknik pengeluaran serta pembungkusan produk.

*This course covers the importance of live food in aquaculture industry, types of live food, production techniques and product packaging.*

AKU4501      Mikrobiologi Akuatik  
*Aquatic Microbiology*

Kursus ini merangkumi peranan, kesan, teknik pengenalpastian dan kaitan mikroorganisma ke atas ternakan akuakultur. Kepentingan, aplikasi dan isu semasa mengenai mikrobiologi dalam persekitaran akuatik juga dibincangkan.

*This course covers the roles, effects identification techniques and relations of microorganisms in aquaculture farming. The importance, applications and current issues of fish microbiology in aquaculture are also discussed.*

AKU4502      Imunologi Ikan  
*Fish Immunology*

Kursus ini merangkumi konsep, jenis, tindakbalas dan pengawal ubah imun dalam sistem imuniti ikan. Kepentingan dan aplikasi imunologi ikan untuk pencegahan penyakit dalam akuakultur dibincangkan.

*This course covers the concepts, types, responses and immunomodulators in fish immune system. The importance and application of fish immunology for diseases prevention in aquaculture are discussed.*

AKU4601      Ekologi dan Pengurusan Tanah Basah/ *Ecology and Management of Wetlands*      3 (2+1)

Prasyarat : Tiada

Kursus ini merangkumi pengelasan dan jenis ekosistem tanah basah. Pengurusan, kepentingan ekologi dan sosioekonomi tanah basah dibincangkan.

*This course covers the classification and types of ecosystems of wetlands. Management, ecological and socioeconomic importance of wetlands are discussed.*

AKU4701      Teknologi Maklumat dan Komunikasi Dalam Akuakultur/ *Information and Communications Technology in Aquaculture*      3 (1+2)

Prasyarat : Tiada

Kursus ini merangkumi kegunaan teknologi maklumat dan komunikasi dalam pemilihan tapak, pengurusan kolam atau tangki, memantau kualiti air, jaringan kerja dan pemasaran hasil akuakultur.

*This course encompasses on the use of information and communications technology for site selection, pond or tank management, water quality monitoring, networking and marketing of aquaculture produce.*

AKU4801      Perikanan Rekreasi Dalam Ekopelancongan Perairan Darat/      3 (2+1)  
*Recreational Fisheries in Inland Waters Ecotourism*

Prasyarat : Tiada

Kursus ini merangkumi hubungkait antara ekopelancongan dan perikanan rekreasi perairan darat serta pengurusannya sebagai alternatif dalam pengurusan sumber. Penekanan diberi kepada pendekatan pelbagai dimensi dalam pengurusannya.

*This course covers the relationship between ecotourism and inland recreational fisheries and its management as an alternative in resource management. It emphasizes multidimensional approach in recreational fisheries management.*

AKU4802      Biologi Molekul Dalam Akuakultur  
*Molecular Biology in Aquaculture*

Kursus ini merangkumi konsep dan teknik biologi molekul dalam sel tumbuhan, haiwan dan mikrob akuatik. Manipulasi gen melalui teknologi DNA rekombinan, PCR dan analisis jujukan DNA, aplikasi dan isu semasa biologi molekul dalam akuakultur dibincangkan.

*This course covers concepts and techniques of molecular biology in plants, animals and aquatic microbial cells. Gene manipulation through DNA recombinant technology, PCR and DNA sequencing analyses, applications and current issues of molecular biology in aquaculture are discussed.*

AKU4901      Latihan Industri/ *Industrial Training*      12 (0+12)

Prasyarat : Persetujuan Penyelaras

Kursus ini melibatkan penempatan belajar di ladang akuakultur, dan/atau unit penetasan swasta atau kerajaan. Pendedahan praktik kepada keadaan pekerjaan dan amalan pengurusan sebenar yang dijalankan dan/atau unit penetasan itu diberikan.

*This course involves student attachment at a private or government aquaculture farm and/or hatchery. A practical exposure to the actual working conditions and management practices carried out in the farm and/or hatchery is emphasized.*

AKU4999      Projek Ilmiah Tahun Akhir/ *Final Year Project*      6 (0+6)

Prasyarat : Tiada

Kursus ini merangkumi sorotan bahan rujukan, penggunaan teknik penyelidikan yang sesuai, pengumpulan dan analisis data, penafsiran keputusan, perbincangan dan kesimpulan kajian saintifik dalam projek penyelidikan

*This course covers literature review, use of appropriate research techniques, data collection and analyses, interpretation of results, discussion and conclusion of scientific studies in research.*

**Jabatan Sains Haiwan/ Department of Animal Science**

SHW3001 Prinsip Pengeluaran Ternakan/ *Principle Of Livestock Product* 3 (3+0)

Prasyarat : Tiada

Kursus ini merangkumi prinsip pengeluaran ternakan, pengurusan pastura, bahan sampingan pertanian sebagai makanan ternakan, faktor yang mempengaruhi pemakanan, reproduksi, pengurusan ternakan ruminan dan bukan ruminan serta hasil dan hasil sampingan ternakan.

*This course encompasses the principles of livestock production, pasture management, agricultural by-products as feed, factors that influence feeding, reproduction, management of ruminant and non-ruminant livestock, and livestock product and by-products.*

SHW3003 Amalan Ladang : Pengeluaran Ternakan/ *Farm Practice: Livestock Production* 1 (0+1)

Prasyarat : Tiada

Kursus ini merangkumi amalan pengurusan asas ternakan ruminan dan poltri. Aspek pemakanan, sumber makanan dan infrastruktur lading ditekankan.

*This course encompasses basic management practices of ruminant and poultry. Aspects of nutrition, feed resources and farm infrastructures are emphasized.*

SHW3103 Kelakuan dan Kebajikan Haiwan/ *Animal Behaviour and Welfare* 3 (3+0)

Prasyarat : Tiada

Kursus ini meliputi pelbagai aspek kelakuan haiwan, penyebab kelakuan dan implikasinya ke atas pengurusan, produksi, kesihatan dan kebajikan. Penekanan akan diberi ke atas masalah, penilaian dan peningkatan kebajikan haiwan. Pengaruh interaksi manusia-haiwan, domestikasi dan persekitaran fizikal yang disediakan oleh manusia ke atas kelakuan dan kebajikan haiwan dibincangkan.

*This course covers various aspects of animal behaviour, causes of behaviour and their implications on management, production, health and welfare. Emphasis will be given to the problems, assessment and improvement of animal welfare. The influence of human-animal interaction, domestication and physical environment provided by human beings on behaviour and welfare of animals are discussed.*

SHW3104 Pengurusan Kesihatan Haiwan/ *Animal Health Management* 3 (2+1)

Prasyarat : Tiada

Kursus ini merangkumi konsep asas kesihatan dan penyebab serta kesan penyakit terhadap haiwan makanan. Elemen fisiologi, epidemiologi, mikrobiologi, parasitologi, pemakanan dan pengurusan pengeluaran diintegrasikan dalam pendekatan pengurusan kesihatan haiwan. Amalan perladangan baik, penyakit pekerjaan berkaitan industri haiwan, dan prinsip zoonosis dibincangkan.

*This course encompasses basic concepts of health and causes including effects of diseases on food animals. Elements of physiology, epidemiology, microbiology, parasitology, nutrition, and production management are integrated with the approach of animal health management. Good farming practices, occupational diseases related to the animal industry, and principles of zoonosis are discussed.*

SHW3200 Anatomi dan Fisiologi Haiwan Domestik I/ *Anatomy and Physiology of Domestic Animals I* 3 (2+1)

Prasyarat : Tiada

Kursus ini merangkumi pengajian tentang bentuk dan fungsi sel, tisu, organ dan sistem haiwan domestik. Ia memperkenalkan pelajar kepada anatomi normal dan prinsip asas fungsi badan haiwan,

sistem endokrin, reproduksi, laktasi dan saraf.

*This course encompasses the study of form and functions of cells, tissues, organs and systems of the domestic animals. It introduces students to normal anatomy and basic principles of animal body functions, the endocrine, reproduction, lactation and nervous systems.*

SHW3201 Anatomi dan Fisiologi Haiwan Domestik II/ *Anatomy and Physiology of Domestic Animals II* 3 (2+1)

Prasyarat : Tiada

Kursus ini merangkumi struktur anatomi normal dan prinsip asas fungsi badan haiwan berhubung sistem pencernaan, otot, pernafasan, kardiovesel, imun dan urinari, dan fisiologi persekitaran.

*This course encompasses the normal anatomical structures and basic principles of animal body functions in relation to digestive, muscular, respiratory, cardiovascular, immune and urinary systems, and environmental physiology.*

SHW3203 Reproduksi Haiwan/ *Animal Reproduction* 3 (2+1)

Prasyarat : Tiada

Kursus ini meliputi proses fisiologi reproduksi haiwan ladang termasuk faktor yang mempengaruhi fertiliti dan infertiliti. Ia merangkumi penggunaan bioteknologi untuk meningkatkan prestasi reproduktif dan meningkatkan produksi ternakan secara menyeluruh.

*This course covers the physiological processes of reproduction in farm animals, including factors influencing fertility and infertility. It encompasses the use of biotechnology to improve reproductive performance and to increase livestock production as a whole.*

SHW3303 Genetik Haiwan/ *Animal Genetics* 3 (2+1)

Prasyarat : Tiada

Kursus ini memperkenalkan prinsip asas genetik yang berkaitan dengan haiwan. Kursus ini menekankan asas pemindahan dan ekspresi gen, terutamanya merujuk kepada sifat kualitatif. Topik yang dibincangkan akan juga merujuk asas pembiakbakaan ternakan dan variasi kromosom dan molekul dan faktor-faktor yang mempengaruhi struktur genetik populasi.

*This course introduces the basic principles of genetics as applied to animals. The course emphasises the fundamentals of gene transmission and expression, especially with reference to qualitative traits. The topics discussed will also address chromosomal and molecular basis of variation and the factors influencing genetic structure of populations*

SHW3304 Pembiakbakaan Ternakan/ *Livestock Breeding* 3 (2+1)

Prasyarat : SHW3303

Kursus ini memperkenalkan prinsip asas genetik kuantitatif. Ia tertumpu kepada aplikasi prinsip genetik dalam peningkatan prestasi ternakan. Prinsip untuk meramal respons terhadap pemilihan dan mengenalpasti ternakan pembiak yang unggul ditekankan.

*This course introduces the basic principles of quantitative genetics. It focuses on the application of genetic principles to improve livestock performance. Principles to predict the response to selection and to identify superior breeding animals are emphasised*

SHW3403 Pemakanan Haiwan Asas/ *Basic Animal Nutrition* 3 (2+1)

Prasyarat : Tiada

Kursus ini meliputi topik mengenai ciri-ciri kepentingan pelbagai nutrien dan bahan aditif dalam pemakanan haiwan. Ia merangkumi pengambilan makanan voluntari, penggunaan nutrien dan keperluan nutrien haiwan ternakan, bahan makanan ternakan, pemprosesan dan kaedah formulasi rangsum.

*This course covers topics on the characteristics and importance of various nutrients and feed additives in the nutrition of animals. It encompasses voluntary intake, nutrient utilization, nutrient requirements of farm animals, feedstuffs, processing and methods of ration formulation.*

SHW3405 Sains Pastura/ *Pasture Science* 3 (2+1)

Prasyarat : Tiada

Kursus ini merangkumi kepentingan tanaman pastura sebagai sumber makanan ruminan. Ia termasuk pembentukan tanah, sifat kimia, fizik dan biologi tanah, ciri spesies rumput dan kekacang, serta kaedah penubuhan dan pengurusan pastura. Kaedah penggunaan dan penyimpanan pastura diliputi.

*This course encompasses the importance of pasture plants as a ruminant feed source. It includes soil formation, physical, chemical and biological properties of soil, the characteristic of grasses and legumes species, methods of establishment and management of pasture. Methods of utilization and conservation of pasture are covered.*

SHW3406 Prinsip Pemakanan Ternakan/ *Principles Of Livestock Nutrition* 3 (2+1)

Prasyarat : SHW3001

Kursus ini merangkumi pengelasan, fungsi, penggunaan, dan keperluan nutrien untuk saraan, pertumbuhan dan pengeluaran haiwan dan perumusan rangsum.

*This course encompasses classification, functions, nutrient utilization and requirement for maintenance, growth and production, and ration formulation.*

SHW3501 Sains Haiwan Pedaging/ *Meat Animal Science* 3 (2+1)

Prasyarat : SHW3200, SHW3201, SHW3403

Kursus ini meliputi prinsip dan amalan pengurusan pengeluaran haiwan pedaging. Ia merangkumi aplikasi konsep fisiologi, pemakanan, pembiakan, kesihatan gerompok, ekonomi dan pengurusan di bawah sistem peternakan di humid tropika.

*(This course covers the principles and management practices for meat animal production. It encompasses the application of concepts in physiology, nutrition, breeding, herd health, economics and management for production systems in humid tropics.)*

SHW3502 Sains Tenuku/ *Dairy Science* 3 (2+1)

Prasyarat : SHW3200, SHW3201, SHW3400

Kursus ini meliputi pengurusan ternakan tenusu dari lahir hingga dewasa. Penekanan ke atas pengurusan reproduksi, pemakanan dan pemberian makanan, masalah penyakit metabolisme, pengurusan sistem pemerahan susu, pengendalian susu di ladang dan perkembangan industri tenusu.

*This course covers management of dairy animals from birth until adulthood. Emphasis on reproductive management, feed and feeding, problems of metabolic diseases, management of milking systems, handling of milk on the farm and development of the dairy industry*



- SHW3513      *Produksi Babi/ Swine Production*      3 (2+1)  
 Prasyarat : SHW3001  
 Kursus ini merangkumi sistem pengeluaran babi, amalan am, pengurusan di semua peringkat, pemakanan dan sistem pembiakbakaan.  
*This course encompasses pig production systems, general farm practices, management at all stages, nutrition and breeding systems.*
- SHW3602      *Statistik Sains Haiwan / Statistics for Animal Science*      3 (2+1)  
 Prasyarat : Tiada  
 Kursus ini merangkumi konsep asas dalam statistik, kebarangkalian, frekuensi taburan, statistik lokasi dan serakan. Ia juga meliputi pengumpulan, persembahan dan analisis data, ujian hipotesis dan pengulasan keputusan.  
*This course encompasses basic concepts in statistics, probability, frequency distribution, statistics of location and dispersion. It also covers data gathering, display and analysis, hypothesis testing and analysis of results.*
- SHW3700      *Pengurusan Sisa Ternakan/ Livestock Waste Management*      3 (2+1)  
 Prasyarat : Tiada  
 Kursus ini merangkumi prinsip dan aplikasi pengurusan sisa peternakan dalam sistem intensif. Penekanan diberi kepada sistem dan teknologi di kawasan humid tropika. Kualiti alam sekitar, polisi dan perundangan terhadap pengurusan sisa peternakan dibincangkan.  
*This course encompasses the principles and application of livestock waste management in intensive system. Emphasis is given on systems and technologies in the humid tropics. Environmental quality, policy and legislation on livestock waste management is discussed.)*
- SHW4100      *Hidupan Liar dan Haiwan Rekreasi/ Wildlife and Recreational Animals*      3 (2+1)  
 Prasyarat : Tiada  
 Kursus ini merangkumi pelbagai aspek pengurusan haiwan liar dan domestik dalam peliharaan di institusi zoologikal, pusat pemulihan dan taman rekreasi. Asas pengurusan spesies haiwan khusus dibincangkan  
*This course encompasses various aspects of managing wild and domestic animals in captivity at zoological, rehabilitation and recreational establishments. Basic aspects of species specific animal management are discussed.*
- SHW4105      *Sains Daging/ Meat Science*      3 (2+1)  
 Prasyarat : Tiada  
 Kursus ini merangkumi prinsip pembentukan dan komposisi daging, faktor penentuan kualiti daging, kaedah penyimpanan dan pemprosesan daging dan prinsip *Hazard Analysis Critical Control Point* (HACCP).  
*This course incorporates the principles of meat formation and composition, factors determining meat quality, meat storage and processing methods, and principle of Hazard Analysis Critical Control Point (HACCP).*

- SHW4201 Fisiologi Persekitaran/ *Environmental Physiology* 3 (3+0)
- Prasyarat : Persetujuan Penyelaras
- Kursus ini meliputi pengajian respons fisiologi oleh haiwan dalam pelbagai iklim persekitaran termasuk cara haiwan menyesuaikan diri terhadap persekitaran dan tegasan.
- This course covers the study of physiological responses by animals in various climatic environments including the ways animals adapt to the environments and stresses.*
- SHW4300 Genetik dan Pembiakbakaan Ternakan Gunaan/ *Applied Livestock Genetics and Breeding* 3 (2+1)
- Prasyarat : Tiada
- Kursus ini meliputi prinsip asas genomik haiwan dan pembiakbakaan ternakan. Kursus ini menekankan aplikasi praktik prinsip-prinsip tersebut dalam analisis genetik populasi dan produksi ternakan.
- This course covers the basic principles of animal genomics and animal breeding. The course emphasizes on the practical application of these principles in population genetic analysis and livestock production*
- SHW4301 Sitogenetik Haiwan/ *Animal Cytogenetics* 3 (2+1)
- Prasyarat : SHW3303
- Kursus ini memberi penekanan ke atas morfologi kromosom, proses mitosis dan meiosis, kromosom jantina, penentuan jantina, dan keaberranan struktur dan bilangan kromosom. Kepentingan, kegunaan dan implikasi sitogenetik dalam bidang produksi dan pembiakan ternakan dibincangkan.
- This course emphasises on chromosome morphology, mitotic and meiotic processes, sex chromosome, sex determination, and structural and numerical chromosomal aberrations. The importance, use and implication of cytogenetics in animal production and breeding are discussed.*
- SHW4401 Teknologi Pemprosesan Makanan Haiwan/ *Feed Processing Technology* 3 (3+0)
- Prasyarat : SHW3403
- Kursus ini meliputi kaedah pemprosesan bahan makanan untuk meningkatkan nilai pemakanan melalui proses fizikal, kimia dan biologi. Teknik pemprosesan dan kesannya terhadap nilai pemakanan dibincangkan.
- This course covers methods of feed processing to enhance the nutritive value through physical, chemical and biological processes. Processing techniques and its effects on the nutritive value are discussed*
- SHW4402 Bioteknologi Dalam Makanan Haiwan/ *Biotechnology in Animal Feed* 3 (3+0)
- Prasyarat : SHW3403
- Kursus ini meliputi aplikasi bioteknologi dalam makanan dan pemberian makanan haiwan. Penggunaan aditif makanan haiwan, tanaman transgenik, protein dan asid amino, enzim, antibakteria, prebiotik dan probiotik, dan pengawalan pencemaran melalui penggunaan aditif makanan diberi penekanan.
- This course covers the application of biotechnology in animal feeds and feeding. The use of feed additives, transgenic plants, proteins and amino acids, enzymes, antibacterials, prebiotics and probiotics, and control of pollution through the use of feed additives are emphasised.*

SHW4403 Makanan dan Pemberian Makanan/ *Feeds and Feeding* 3 (3+0)

Prasyarat : Tiada

Kursus ini merangkumi pengkelasan, kualiti, pemprosesan dan penilaian pemakanan bahan makanan, keperluan nutrien untuk saraan dan pengeluaran, dan kaedah perumusan makanan haiwan.

*This course incorporates classification, quality, processing and nutritive evaluation of feedstuff, nutrient requirement for maintenance and production, and ration formulation for animals.*

SHW4404 Pemakanan Haiwan Gunaan/ *Applied Animal Nutrition* 3 (2+1)

Prasyarat : SHW3403

Kursus ini meliputi konsep dan aplikasi lanjutan pemakanan untuk produksi ruminan dan bukan ruminan. Sistem pemberian makanan dan perumusan rangsum untuk memenuhi keperluan haiwan ditekankan.

*This course covers advance concepts and application of nutrition for production of ruminants and non-ruminants. Feeding systems and ration formulation for the animals' requirement are emphasised.*

SHW4500 Rekabentuk dan Infrastruktur Ladang Ternakan/ *Livestock Farm Design And Infrastructure* 3 (3+0)

Prasyarat : SHW3502, SHW3510, SHW3511

Kursus ini merangkumi prinsip pembangunan sebuah ladang ternakan moden dan efisien. Ia meliputi susunatur ladang, infrastruktur asas, perumahan, peralatan dan spesifikasi kejuruteraan dalam rekabentuk dan pembinaan untuk memenuhi keperluan haiwan dan perundangan.

*This course encompasses the principles in the development of a modern and efficient livestock farm. It includes farm layout, basic infrastructures, housing, equipment and engineering specifications in the design and construction to meet animals' and regulatory requirements.*

SHW4501 Produksi Ruminan Kecil/ *Small Ruminant Production* 3 (2+1)

Prasyarat : Tiada

Kursus ini merangkumi sistem peternakan kambing dan bebiri termasuk pengurusan, pemakanan, pembiakan, penyakit dan kawalan, serta pemprosesan hasil.

*This course encompasses farming systems of goats and sheep which include aspects of management, nutrition, breeding, disease and control, also processing of products.*

SHW4502 Produksi Tenusu/ *Dairy Production* 3 (2+1)

Prasyarat : Tiada

Kursus ini merangkumi pengurusan lembu tenusu lanjutan, teknologi pemerahan susu, penjagaan piawaian kualiti susu dan perbincangan masalah yang sering dihadapi oleh pengusaha.

*This course encompasses advanced dairy cow management, milking technology, maintaining milk quality standard, and discussion on problems commonly faced by entrepreneurs.*

SHW4511 Sains Babi Lanjutan/ *Advanced Swine Science* 3 (2+1)

Prasyarat : SHW3511

*Kursus ini meliputi aspek lanjutan di dalam produksi babi termasuk reproduksi, pengurusan dan penyapihan awal, kaedah penggunaan dan manipulasi, dan aplikasi bioteknologi untuk meningkatkan*



kawalan kualiti produk daging terproses dibincangkan.

*This course encompasses technological aspect in meat handling and processing. This includes slaughtering, handling, processing, preservation and packaging. Evaluation and quality control of processed meat products are discussed.*

SHW4801 Perancangan dan Penilaian Sumber/ *Resource Planning and Evaluation* 3 (2+1)

Prasyarat : Tiada

Kursus ini merangkumi penilaian sumber untuk perancangan dan kemajuan projek haiwan. Kaedah pendekatan sistem digunapakai melalui kombinasi komponen dalam sistem pengeluaran haiwan.

*This course encompasses the evaluation of resources for the planning and development of project in animal production. System approach method is utilised through combination of components in animal production systems*

SHW4999 Projek Ilmiah Tahun Akhir/ *Final Year Project* 6 (0+6)

Prasyarat : Tiada

Kursus ini merangkumi pengendalian sebuah eksperimen yang melibatkan perancangan, penggunaan teknik sesuai, pengumpulan dan analisis data, penafsiran keputusan, dan pembentangan dalam seminar dan laporan projek tahun akhir.

*This course covers conducting an experiment which involves planning, use of appropriate research techniques, data collection and analyses, interpretation of results and presentation in a seminar and final year project report.*

PRT4901 Latihan Industri / *Industrial Training* 12 (0+12)

Prasyarat : Tiada

Kursus ini memberi peluang kepada pelajar untuk menilai teknologi terkini dan menimba pengalaman kerja dalam persekitaran pertanian dan perladangan. Pelajar akan ditempatkan di agensi kerajaan atau swasta selama 24 minggu untuk didedahkan kepada perancangan dan penyelarasan kerja yang berkesan. Setiap pelajar akan melaksanakan tugas yang berkaitan dengan industri pertanian dan perladangan dibawah penyeliaan pegawai yang dilantik.

*This course gives student the opportunity to experience working in agriculture and plantation environment. Students will be attached to government of private agencies for 24 weeks to be exposed to the planning and coordination of efficient work. Each student will carry out assignment involving agriculture and plantation industries under the supervision of an appointed officer*

### **Jabatan Sains Tanaman/ Department of Crop Science**

AGR3001 Amalan ladang: Tanaman Makanan/ *Farm Practices: Food Crops* 1 (0+1)

Prasyarat : Tiada

Kursus ini meliputi amalan pengeluaran dan pengurusan lepas tuai tanaman makanan termasuk bijirin, tanaman berubi dan sayuran.

*This course covers practices in the production and postharvest management of food crops including cereals, tubers and vegetables.*

AGR3002 Amalan ladang: Tanaman Perldangan/ *Farm Practices: Plantation Crops* 1 (0+1)

Prasyarat : Tiada

Kursus ini merangkumi amalan pengeluaran, pengurusan dan pemprosesan tanaman perladangan utama.

*This course covers practices in production, management and processing of major plantation crops.*

AGR3101 Botani Pertanian/ Agricultural Botany 3 (2+1)

Prasyarat : Tiada

Kursus ini merangkumi morfologi, anatomi dan taksonomi tanaman pertanian. Morfologi vegetatif dan reproduktif struktur dan fungsi sel dan tisu dan identifikasi, pemberian nama dan klasifikasi tanaman dibincangkan

*This course covers morphology, anatomy and taxonomy of agricultural crops. Vegetative and reproductive morphology, structure and function of plant cells and tissue and the identification, nomenclature and classification of plants are discussed*

AGR3102 Prinsip Sains Rumpai/ *Principles Of Weed Science* 3 (2+1)

Prasyarat : Tiada

Kursus ini meliputi prinsip, konsep, serta ekologi rumpai dalam pendekatan pengurusan rumpai, yang merangkumi pencaman, klasifikasi, pertapakan dan kesesuaian habitat serta strategi mengawal dan mengurus rumpai di kawasan pertanian dan bukan pertanian.

*This course covers principles, concepts, and ecology of weed and their management approach, which includes identification, classification, establishment and habitat requirement, and control and management strategies of weeds in agricultural and non-agricultural areas.*

AGR3204 Pembiakbakaan Tumbuhan/ *Plant Breeding* 3 (2+1)

Prasyarat : Tiada

Kursus ini meliputi sistem pembiakan tumbuhan, pewarisan sifat kuantitatif dan kualitatif, heritabiliti, kaedah pemilihan tanaman terdebunga sendiri dan kacuk, kaedah pembiakbakaan melalui kacukan, mutasi, kacukan antara individu berpertalian genetik jauh, dan kaedah pembiakbakaan yang lain.

*The course covers plant reproduction system, inheritance of qualitative and quantitative characters, heritability, selection methods for self- and cross-pollinated crops, breeding through hybridization, mutation, wide hybridization, and other breeding methods.*

AGR3301 Fisiologi Tanaman/ *Crop Physiology* 3 (2+1)

Prasyarat : Tiada

Kursus ini merangkumi fisiologi tumbesaran, perkembangan dan pembiakan, percambahan biji benih, hubungan antara air dengan tanaman, fotosintesis, translokasi asimilat, pemakanan mineral dan perkembangan buah.

*This course encompasses growth, development and reproductive physiology, seed germination, plant-water relationship, photosynthesis, assimilate translocation, mineral nutrition and fruit development.*

AGR3302 Fisiologi Tanaman Saka / *Perennial Crop Physiology* 3 (2+1)

Prasyarat : Tiada

Kursus ini merangkumi metabolisma tumbuhan dengan memberi penekanan terhadap pemakanan

tumbuhan, fotosintesis, respirasi dan fisiologi reproduktif tumbuhan. Kinetik pertumbuhan, pengawalan tumbesaran, komuniti tanaman dan perubahan iklim yang mempengaruhi fisiologi tanaman saka dibincangkan

*This course covers plant metabolism which emphasises on plant nutrition, photosynthesis, respiration and plant reproductive physiology. Growth kinetics, plant growth regulators, plant community and climate change that influence perennial crop physiology are discussed*

AGR3501 Tanaman Perladangan/ *Plantation Crops* 2 (2+0)

Prasyarat : Tiada

Kursus ini meliputi prinsip pengeluaran, pengurusan, pemasaran dan ekonomi, arah aliran dan perkembangan industri tanaman perladangan utama.

*This course covers principles of production, management, marketing and economics, trends and development of major plantation crop industry.*

AGR3502 Tanaman Makanan/ *Food Crops* 2 (2+0)

Prasyarat : Tiada

Kursus ini meliputi kepentingan, pengeluaran dan pengurusan tanaman bijirin dan berubi untuk menentukan sekuriti bekalan makanan.

*This course covers the importance, production and management of cereals and tubers in ensuring food security.*

AGR3503 Tanaman Perladangan Industri Minor/ *Minor Industrial Plantation Crops* 3 (1+2)

Prasyarat : Tiada

Kursus ini meliputi prinsip pengeluaran, pengurusan, pemprosesan, trend dan perkembangan industri tanaman perladangan minor.

*This course covers the principles of production, management, processing, trends and development of minor plantation crops industries*

AGR3609 Tanaman Industri II : Kelapa, Koko, Kopi, Teh Dan Tebu/ *Industrial Crops li: Coconut, Cocoa, Coffee, Tea And Sugar Cane* 3 (3+0)

Prasyarat : Tiada

Kursus ini merangkumi pengeluaran tanaman kelapa, koko, kopi, teh dan tebu termasuk penanaman, pengurusan tanaman dan pemprosesan.

*This course covers the production of coconut, cocoa, coffee, tea and sugarcane including their cultivation, crop management and processing.*

AGR4101 Botani Pertanian Lanjutan/ *Advanced Agricultural Botany* 3 (2+1)

Prasyarat : AGR3101

Kursus ini merangkumi mikrostruktur tumbuhan dengan menggunakan teknik biologi molekul, pembiakan mikro dan mikroskopi.

*This course covers plant microstructure and applying techniques in molecular biology, micro-propagation and microscopy.*



translokasi dan keupayaan media untuk membekal nutrien. Kesan kekurangan dan keterlebihan nutrien kepada tumbesaran, penghasilan tanaman dan alam sekitar dibincangkan.

*This course encompasses the role and function of major nutrient elements, metabolism, absorption, translocation and the capacity of media to supply nutrients. Effect of nutrient deficiency and excess on growth, yield and the environment are discussed.*

AGR4501 Pengurusan Pastura/ *Pasture Management* 3 (2+1)

Prasyarat : Tiada

Kursus ini merangkumi penilaian spesies rumput dan kekacang pastura tropika, penanaman dan pengurusan pastura untuk membekalkan makanan dalam pelbagai sistem pengeluaran ternakan ruminant.

*This course encompasses an evaluation of tropical pasture grass and legume species, planting and pasture management to provide feed in various ruminant production systems.*

AGR4503 Pengeluaran Tanaman Padi/ *Rice Crop Production* 3 (2+1)

Prasyarat : Tiada

Kursus ini merangkumi semua aspek pengeluaran dan pengurusan tanaman padi termasuk penuaian dan pengendalian lepas tuai.

*This course covers all aspects of rice production and management including harvesting and post harvest handling.*

AGR4507 Pengeluaran Tanaman Perladangan- Kelapa Sawit/ *Plantation Crop Production: Oil Palm* 3 (2+1)

Prasyarat : Tiada

Kursus ini meliputi industri kelapa sawit termasuk pengeluaran, pengurusan dan pemprosesan hasil.

*This course covers the oil palm industry including production, management and processing.*

AGR4508 Pengeluaran Tanaman Perladangan- Getah/ *Plantation Crop Production : Rubber* 3 (2+1)

Prasyarat : Tiada

Kursus ini meliputi industri getah termasuk pengeluaran, pengurusan dan pemprosesan hasil.

*This course covers the rubber industry including production, management and processing.*

AGR4509 Pengeluaran Tanaman Makanan/ *Production Of Food Crops* 3 (2+1)

Prasyarat : Tiada

Kursus ini meliputi kepentingan, amalan pengeluaran dan pengurusan lepas tuai tanaman bijirin dan berubi. Interaksi di antara faktor persekitaran, pengurusan dan fisiologi tanaman terhadap hasil juga dibincang

*This course covers the importance, production practices and postharvest management of cereal and tuber crops. The interaction between the environment, management and crop physiology on yield is discussed*

- AGR4510 Pengurusan Perladangan Kelapa Sawit/ *Oil Palm Plantation Management* 3 (1+2)
- Prasyarat : Tiada
- Kursus ini meliputi industri tanaman kelapa sawit termasuk pengeluaran, pengurusan dan pemprosesan hasil. Faktor yang mempengaruhi keberkesanan pengeluaran perladangan kelapa sawit juga dibincangkan.
- This course covers the oil palm industry including production, management and processing. Factors affecting the efficiency of oil palm plantation production are also discussed.*
- AGR4511 PENGURUSAN PERLADANGAN GETAH/ *Rubber Plantation Management* 3 (1+2)
- Prasyarat : Tiada
- Kursus ini meliputi industri getah termasuk pengeluaran, pengurusan dan pemprosesan hasil. Faktor yang mempengaruhi keberkesanan pengeluaran perladangan getah juga dibincangkan
- This course covers the rubber industry including production, management and processing. Factors affecting the efficiency of rubber plantation production are also discussed*
- HRT3000 Pengeluaran Tanaman Hortikultur/ *Horticultural Crop Production* 3 (3+0)
- Prasyarat : Tiada
- Kursus ini meliputi pengkelasan, prinsip, teknik pengeluaran dan pengendalian lepas tuai dengan member tumpuan kepada pembiakan, faktor pengeluaran, penyelenggaraan dan pengurusan tanaman hortikultur.
- This course covers classification, principles, techniques of production and postharvest handling with emphasis on plant propagation, production factors, maintenance and management of horticultural crops.*
- HRT3001 Pembiakan Tumbuhan dan Pengurusan Semaian/ *Plant Propagation and Nursery Management* 3 (2+1)
- Prasyarat : Tiada
- Kursus ini meliputi prinsip dan teknik pembiakan seks dan aseks tanaman hortikultur serta perancangan dan pengurusan tapak semaian. Pemasaran hasil semaian juga dibincangkan.
- This course covers principles and techniques of sexual and asexual propagation of horticultural crops as well as nursery planning and management. Marketing of nursery products is also discussed.*
- HRT3002 Botani dan Fisiologi Tanaman Hortikultur/ *Botany and Physiology of Horticultural* 4 (3+1)
- Prasyarat : Tiada
- Kursus ini meliputi sistematik dan struktur tumbuhan, proses fisiologi, tumbesaran dan perkembangan tanaman hortikultur.
- This course covers plant systematics and structures, physiological processes, growth and development of horticultural crops.*
- HRT3004 Amalan Ladang : Pengeluaran Buah-buahan/ *Farm Practice: Fruit Production* 1 (0+1)
- Prasyarat : Tiada
- Kursus ini meliputi amalan pengeluaran buah-buahan lapangan dan persekitaran terkawal

merangkumi pengeluaran anak benih, pengurusan tanaman, penuaian, pengendalian lepas tuai dan pemasaran.

*This course covers field and protected environmental fruit production practices including seedling production, crop management, harvesting, postharvest handling and marketing.*

HRT3005 Amalan Ladang : Pengeluaran Sayur-sayuran/ *Farm Practice: Vegetable Production* 1 (0+1)

Prasyarat : Tiada

Kursus ini meliputi amalan pengeluaran lestari sayur-sayuran merangkumi pengeluaran anak benih, sistem penanaman lapangan dan persekitaran terkawal, pengkomposan, penuaian, pengendalian lepas tuai dan pemasaran.

*This course covers practices on sustainable vegetable production involving seedling production, field and protected environmental cultivation systems, composting, harvesting, postharvest handling and marketing.*

HRT3008 Amalan Ladang : Hortikultur Hiasan/ Landskap/ *Farm Practice: Ornamental and Landscape Horticulture* 1 (0+1)

Prasyarat : Tiada

Kursus ini merangkumi amalan pengeluaran dan pengurusan tanaman hiasan/ landskap meliputi pencaman, pembiakan, teknik menanam, pengurusan dan pengendalian pasca tuai.

*This course involves production and management practices of ornamental/landscape plants, which includes identification, propagation, planting techniques, management and postharvest handling.*

HRT3009 Amalan Ladang :Turf/ *Farm Practice: Turf* 1 (0+1)

Prasyarat : Tiada

Kursus ini meliputi amalan pengeluaran dan penjagaan rumput turf serta pencaman, pembiakan, teknik menanam dan pengurusan.

*This course covers practices on production and management of turf grass that includes identification, propagation, planting techniques and management.*

HRT3102 Pengeluaran Sayur- Sayuran/ *Vegetable Production* 2 (2+0)

Prasyarat : Tiada

Kursus ini meliputi klasifikasi, prinsip, teknik pengeluaran lapangan dan persekitaran terkawal dengan tumpuan kepada faktor pengeluaran, pembiakan, penanaman, pengurusan dan pengendalian pascatuai tanaman sayur-sayuran.

*This course covers classification, principles, field and protected environmental production techniques with emphasis on production factors, propagation, planting, management and postharvest handling of vegetable crops.*

HRT3202 Pomologi/ *Pomology* 2 (2+0)

Prasyarat : Tiada

Kursus ini meliputi pengelasan, prinsip, teknik pengeluaran lapangan dan struktur lindungan dengan memberi tumpuan kepada pembiakan, faktor pengeluaran, pengurusan dan pengendalian lepas tuai

tanaman buah-buahan.

*This course covers classification, principles, field and protected environmental production techniques with emphasis on production factors, propagation, planting, management and postharvest handling of fruit crops.*

HRT3302      Pengeluaran Tanaman Hiasan Dan Bunga/ *Ornamental and Flower Production*      2 (2+0)

Prasyarat : Tiada

Kursus ini meliputi klasifikasi, prinsip dan teknik dalam pengeluaran tanaman hiasan yang merangkumi pengecaman, penanaman dan pengurusan.

*This course covers classification, principles and techniques of ornamental plant production which includes identification, planting and management.*

HRT3401      Fisiologi Lepas Tuai/ *Postharvest Physiology*      3 (2+1)

Prasyarat : HRT3101 dan HRT3201 atau HRT3301

Kursus ini meliputi prinsip dan teknik pengendalian, penyimpanan, penilaian kualiti dan keselamatan komoditi hortikultur. Mekanisme fisiologi kematangan, kemasakan dan senescens dibincangkan.

*This course covers the principles and techniques of handling, storage, quality evaluation and safety of horticultural commodities. Physiological mechanisms related to maturation, ripening and senescence are discussed.*

HRT3501      Pengenalan Rekabentuk Landskap/ *Introduction To Landscape Design*      3 (2+1)

Prasyarat : Tiada

Kursus ini meliputi berbagai elemen rekabentuk, prinsip dan proses merekabentuk pelan landskap dengan menggunakan bahan lembut dan kejur. Isu semasa berkaitan pengurusan dan penyelenggaraan dibincangkan.

*This course covers various aspects of design elements, principles and landscape designing processes using soft and hardscape materials. Current issues in landscape management and maintenance are discussed.*

HRT3601      Sains Turf/ *Turf Science*      2 (2+0)

Prasyarat : Tiada

Kursus ini merangkumi pengelasan, pengecaman spesies serta kegunaannya. Keperluan pertumbuhan, pembiakan, penanaman dan pengurusan rumput turf dibincangkan.

*This course covers classification and identification of turfgrass species and their uses. Growth requirements, propagation, establishment and management of turfgrass are discussed.*

HRT4101      Kultur Tanpa Tanah/ *Soilless Culture*      3 (2+1)

Prasyarat : AGR3301 atau HRT3002

Kursus ini meliputi prinsip, teknik dan pengurusan sistem kultur tanpa tanah. Formulasi nutrien, keperluan fizikal dan kultura penanaman pelbagai sistem pengeluaran komersial bagi tanaman

hortikultur dibincangkan.

*This course covers principles, techniques and management of soilless culture system. Nutrient formulation, physical and cultural requirements of various commercial production systems for horticultural crops are discussed.*

HRT4102 Pertanian Persekitaran Terkawal/ *Controlled Environment Agriculture* 3 (2+1)

Prasyarat : HRT3000 atau HRT3002

Kursus ini merangkumi konsep pengawalan dan manipulasi faktor persekitaran, peralatan, keperluan dan pengurusan tanaman untuk pelbagai sistem tanaman persekitaran terkawal

*This course covers concept of control and manipulation of environmental factors, instrumentation, crop requirements and management of various cropping systems under controlled environment*

HRT4201 Pengeluaran Komersil Buah-buahan/ *Commercial Fruit Production* 3 (2+1)

Prasyarat : HRT3202

Kursus ini merangkumi isu dan aspek teknologi pengeluaran buah-buahan bernilai tinggi yang mempunyai impak ekonomi. Akses pemasaran global dan domestik serta logistik dibincangkan.

*This course covers issues and aspects of high value fruit production technology with economic impact. Global and domestic market access and logistics are discussed.*

HRT4301 Kultur Orkid/ *Orchid Culture* 3 (2+1)

Prasyarat : Tiada

*Kursus ini meliputi klasifikasi dan pencaman genera, penghibridan dan pewarisan, sistem pembiakan, faktor mempengaruhi tumbesaran dan perkembangan, sistem penanaman, pengurusan dan pengendalian pasca tuai orkid.*

*This course covers classification and identification of genera, hybridization and inheritance, propagation systems, factors affecting growth and development, planting systems, management and postharvest handling of orchids.*

HRT4302 Tanaman Hiasan Eksotik/ *Exotic Ornamental Plants* 3 (2+1)

Prasyarat : HRT3301

Kursus ini merangkumi aspek biologi, pengurusan dan pengeluaran tanaman hiasan eksotik dan asli untuk industri bunga keratan, pasuan dan perlandskap.

*This course covers aspects of biological diversity, management and production of exotic and indigenous ornamental plants for cut flowers, container plants and landscape industry.*

HRT4401 Pengawalatur Tumbesaran Tumbuhan/ *Plant Growth Regulators* 3 (2+1)

Prasyarat : AGR3301 atau HRT3002

Kursus ini meliputi sintesis, mekanisme dan peranan pengawalatur dalam tumbesaran tanaman. Inisiasi bunga, kejadian dan keguguran buah, pasca tuai, kesan sisabaki dan interaksi antara pengawalatur tumbesaran dengan alam sekitar dibincangkan.

*This course covers synthesis, mechanism and roles of growth regulators in plant growth. Flower initiation, fruit set and abscission, postharvest, residual effects, and their interactions with the environment are discussed.*

HRT4601 Pengurusan Rumput Turf/ *Turfgrass Management* 3 (2+1)

Prasyarat : Tiada

Kursus ini merangkumi isu semasa industri rumput turf, pengaruh alam sekitar ke atas tumbesaran, pembiakan, penubuhan dan pengurusan rumput turf untuk pelbagai fungsian.

*This course encompasses current issues of turf grass industry, influence of environment on growth, propagation, establishment and management of turf grass for various functional uses.*

HRT4701 Pembiakan Mikro Tumbuhan / *Plant Micropropagation* 3 (2+1)

Prasyarat : Tiada

Kursus ini merangkumi sistem, teknik, pengurusan dan aplikasi pembiakan tumbuhan secara *in vitro*. Aspek fisiologi pertumbuhan dan ekonomi dibincangkan.

*This course encompasses systems, techniques, management and application of in vitro plant propagation. Growth physiology and economic aspects are discussed.*

### **Jabatan Perlindungan Tumbuhan/ Department of Plant Protection**

PLP3002 Pengurusan Perosak Tanaman Hortikultur 3 (2+1)

Prasyarat : Tiada

Kursus ini meliputi pengesanan, pengenalpastian dan pemantauan perosak tanaman hortikultur dan turf serta strategi pengurusannya.

*This course covers detection, identification and monitoring pests of horticultural crops and turf as well as strategies for their management*

PLP3104 Entomologi Asas/ *Fundamentals Of Entomology* 3 (2+1)

Prasyarat : Tiada

Kursus ini merangkumi taksonomi, biologi, kaedah kawalan, pengenalpastian perosak utama tanaman dan pelaksanaan dalam konteks pengurusan tanaman bersepadu.

*This course covers taxonomy, biology, methods of control, identification of important crop pests and implementation in the context of integrated crop management.*

PLP3105 Pengurusan Perosak Bandaran/ *Urban Pest Management* 3 (2+1)

Prasyarat : Tiada

Kursus ini meliputi masalah perosak vertebrat dan invertebrat bandaran. Aspek biologi, ekologi, pengesanan, pengenalpastian, kawalan biorasional dan keberkesanannya dibincangkan.

*This course covers the problem of vertebrate and invertebrate urban pests. Aspects of biology, ecology, detection, identification, bio-rational control and effectiveness are discussed.*

PLP3204 Patologi Tumbuhan Asas/ *Fundamentals Of Plant Pathology* 3 (2+1)

Prasyarat : Tiada

Kursus ini meliputi aspek morfologi dan sifat patogen tumbuhan, prinsip patologi tumbuhan, diagnosa penyakit tumbuhan, ekologi patogen tumbuhan dan penyakit yang disebabkan. Perhubungan perumah-perasit dan epidemiologi serta kaedah kawalan penyakit tumbuhan juga dibincang.

*This course covers aspects of morphology and characteristics of plant pathogens, principles of plants*

*pathology, plant disease diagnosis, plant pathogen ecology and their diseases. Host-parasite relationship and plant disease control methods will be discussed*

PLP4001      Pengawalan Perosak/ *Pest Control*      3 (2+1)

Prasyarat : Tiada

Kursus ini meliputi kaedah pengurusan perosak tanaman utama termasuk ekologi, kaedah penilaian infestasi perosak dan kerugian tanaman.

*This course covers pest management methods of major crops including ecology, assessment methods of pest infestation and crop losses.*

PLP4002      Teknik Penggunaan Racun Perosak/ *Pesticide Application Technique*      3 (2+1)

Prasyarat : Tiada

Kursus ini merangkumi prinsip utama aplikasi racun perosak, rekabentuk, pemilihan dan penyelenggaraan alatan pemyembur, cara aplikasi racun perosak dan keselamatan.

*This course encompasses major principles in pesticide application, design, selection and maintenance of equipment, pesticide application methods and safety.*

PLP4003      Kawalan Biologi Perosak Tanama/ *Biological Control Of Crop Pests*      3 (2+1)

Prasyarat : Tiada

Kursus ini meliputi teknik pengawalan perosak tanaman menggunakan musuh semulajadi termasuk pembentukan dan penyampaian produk dan agen kawalan biologi.

*This course covers techniques of controlling crop pests utilizing natural enemies including the development and delivery of products and bio-control agents.*

PLP4004      Pengurusan Perosak Tanaman Perladangan/ *Pest Management of Plantation Crops*      3 (2+1)

Prasyarat : Tiada

Kursus ini meliputi aspek biologi, ekologi dan epidemiologi perosak dan penyakit utama tanaman perladangan penting di Malaysia dan negara Asia Tenggara yang lain. Penilaian kritis tentang pengurusan penyakit dan perosak berkenaan menggunakan kaedah perundangan, kultur, koresistensi perumah, biologi dan kimia adalah ditekankan.

*The course covers aspects of biology, ecology and epidemiology of the major pests and diseases of important plantation crops in Malaysia and other Southeast Asian countries. Critical evaluation of the management of these pests and diseases using regulatory, cultural, host resistance, biological and chemical methods is emphasized.*

PLP4101      Entomologi/ *Entomology*      3 (2+1)

Prasyarat : Tiada

Kursus ini meliputi fisiologi serangga, pemakanan dan kelakuan. Serangga entomofagus, patologi serangga, ekologi serangga, perhubungan serangga-tumbuhan dan sistematik serangga perosak utama juga dibincangkan.

*This course covers insect physiology, nutrition and behavior. Entomophagous insects, insect pathology, insect ecology, insect host-plant relationship and systematic of major insect pests are discussed.*

PLP4102 Apikultur/ *Apiculture* 3 (2+1)

Prasyarat : Tiada

Kursus ini merangkumi arah-aliran evolusi lebah, biologi, ekologi, prinsip dan teknik pengurusan perlembahan di tropika, hasil sampingan perlembahan dan kegunaannya dalam perkembangan perlembahan di rantau ini.

*This course encompasses the evolutionary trends of honey bees, biology, ecology, principles and techniques in beekeeping management in the tropics, by-products of beekeeping and their uses on the development of beekeeping in the region.*

PLP4201 Patologi Tumbuhan/ *Plant Pathology* 3 (2+1)

Prasyarat : Tiada

Kursus ini meliputi taksonomi dan fisiologi organisma patogenik tumbuhan, proses jangkitan, hubungan perumah-parasit, epidemiologi dan kawalan penyakit tumbuhan, patologi bijibenih dan pasca tuai.

*This course covers the taxonomy and physiology of plant pathogens, infection processes, host-parasite relationships, epidemiology and control of plant diseases, seed and post harvest pathology.*

PLP4601 Sains Racun Perosak/ *Pesticide Science* 3 (2+1)

Prasyarat : Tiada

Kursus ini meliputi ciri utama racun perosak, mod tindakan, keresistanan, penggunaan agen biologi, formulasi dan nasib racun dalam alam sekitar. Teknologi aplikasi racun perosak, kaedah mengkaji dan mengukur tindak balas perosak terhadap racun perosak dibincangkan.

*This course covers the main characteristics of pesticide mode of action, resistance, use of biological agents, formulations and fate of poison in the environment. Pesticide application technology, methods of studying and measuring pest response to pesticide are discussed*

### **Jabatan Perniagaantani dan Sistem Maklumat/ Department of Agribusiness and Information System**

PPT3001 Pengenalan kepada Sistem Perniagaantani Malaysia/ *Introduction To Malaysia Agribusiness System* 3 (3+0)

Prasyarat : Tiada

Kursus ini merangkumi komprehensif mengenai perniagaantani,kepentingan dan hubungannya dengan sector ekonomi secara am dan peluang pekerjaan di dalam bidang perniagaantani di Malaysia. Perbincangan merangkumi pengeluaran, pemprosesan dan pemasaran produk perniagaantani, pengguna, kredit dan kewangan, peranan kerajaan dan masa depan perniagaantani.

*This course encompasses a comprehensive understanding of agribusiness, its importance and relationship to the general economy and employment opportunities in the field of agribusiness in Malaysia. Discussion includes agribusiness production, processing and marketing, the consumer, credit and finance, roles of government, and future of agribusiness.*

PPT3201 Prinsip Pengurusan Perniagaantani/ *Principles Of Agribusiness Management* 3 (3+0)

Prasyarat : Tiada

Kursus ini merangkumi prinsip asas pengurusan perniagaantani, fungsi pengurusan, pengurusan strategik, pengurusan inventori, pengurusan kewangan, pengurusan sumber manusia, pengurusan

pengeluaran, pemrosesan dan pemasaran dalam perniagaantani.

*This course encompasses the basic principles of agribusiness management, management functions, strategic management, inventory management, financial management, human resource management, production, processing and marketing management in agribusiness.*

PPT3302 Prinsip Pemasaran Perniagaantani/ *Principle Of Agribusiness Marketing* 3 (3+0)

Prasyarat : Tiada

*Kursus ini merangkumi prinsip asas pemasaran perniagaantani yang meliputi konsep dan proses pemasaran, pendekatan pemasaran serta pembentukan utiliti. Analisis pemasaran dan membuat keputusan terhadap peletakan produk, penjenamaan, penentuan harga, promosi dan saluran pengagihan diberi penekanan.*

*This course encompasses the basic principles of agribusiness marketing, which include the marketing concepts and processes, marketing approach as well as utility creation. Analysis of marketing and marketing decision-making in product positioning, branding, pricing, promotion and channel of distribution are emphasized.*

PPT3401 Perakaunan Perniagaantani/ *Agribusiness Accounting* 4 (3+1)

Prasyarat : Tiada

Kursus ini merangkumi proses mengenalpasti, merekod dan meringkaskan data dan maklumat untuk menyediakan penyata kewangan seperti kunci kira-kira dan penyata pendapatan. Menggunakan maklumat kewangan dan perakaunan di dalam proses membuat keputusan perniagaantani.

*This course covers the process of identifying, recording and summarizing data and information for the preparation of financial statements such as balance sheet and income statement. The use of financial and accounting information in agribusiness decision making process*

PPT3402 Perakaunan Kos Dan Pengurusan Perniagaantani/ *Agribusiness Cost and Management Accounting* 3 (2+1)

Prasyarat : PPT3401

Kursus ini memberi penekanan terhadap aspek perancangan, kawalan, penilaian prestasi dan pembuatan keputusan di dalam sesebuah syarikat perniagaantani dengan menggunakan maklumat perakaunan.

*This course emphasizes on planning, controlling, performance appraisal and decision making in an agribusiness firm by using accounting information*

PPT3701 Keusahawanan Pertanian/ *Agricultural Entrepreneurship* 3 (1+2)

Prasyarat : Tiada

Kursus ini merangkumi konsep keusahawanan, ciri usahawan, penyediaan pelan perniagaan, pelaksanaan projek, pemasaran, kredit, strategi dan pengurusan sumber serta isu semasa mengenai keusahawanan dalam pertanian.

*This course covers the concepts of entrepreneurship, the characteristics of an entrepreneur, preparation of a business plan, implementation of project marketing, credit, business strategies, management of resources and current issues of entrepreneurship in agriculture.*

PPT3801 Statistik dalam Perniagaantani/ *Statistics In Agribusiness* 3 (2+1)

Prasyarat : Tiada

Kursus ini merangkumi kaedah, prinsip dan penggunaan statistik di dalam bidang pengurusan perniagaantani. Topik meliputi statistik pemerihalhan, kebarangkalian, pensampelan, taburan pensampelan, penganggaran, pengujian hipotesis, ujian Khi-kuasa dua, analisis varian, statistik tak berparameter, regresi linear mudah, korelasi, regresi berganda dan analisis siri masa.

*This course encompasses methods, principles and applications of statistics in agribusiness management. Topics include descriptive statistics, probability, sampling, sampling distribution, estimation, hypothesis testing, Chi-square test, analysis of variance, nonparametric statistics, simple linear regression, correlation, multiple regression and time series analysis.*

PPT4202 Perancangan Dan Pengurusan Projek Perniagaantani/ *Agribusiness Project Planning And Management* 3 (2+1)

Prasyarat : ECN3100/EPT3100 /EPT3102

Kursus ini merangkumi teori dan teknik dalam merancang dan menilai projek perniagaantani. Nilai kini bersih, kadar pulangan dalaman, tempoh bayar balik, dan nisbah faedah kos sebagai indikator daya saing projek juga dibincangkan.

*This course encompasses the theory and techniques in planning and evaluating agribusiness project. Net present value, internal rate of return, pay-back period, and benefit-cost ratio as project viability indicators will also be discussed.*

PPT4203 Pengurusan Strategik Perniagaantani/ *Agribusiness Strategic Management* 3 (2+1)

Prasyarat : PPT3201

Kursus ini merangkumi strategi jangka panjang sesuatu organisasi perniagaan yang merangkumi pengenalanpastian strategi, rekabentuk organisasi, analisis industri dan persaingan, pengurusan rantaian penawaran, pilihan strategi serta kaedah mengurus sesuatu strategi

*This course encompasses the long-term strategic of a business organization which includes identifying strategy, organizational design, industry analysis and competition, supply chain management, strategy options, and methods of managing a strategy*

PPT4204 Ekonomi Perniagaantani/ *Agribusiness Economics* 3 (3+0)

Prasyarat : EPT3100/EPT3102/ECN3100

Kursus ini meliputi aplikasi konsep ekonomi perniagaantani melalui kaedah analisis permintaan dan penawaran, struktur pasaran, serta membuat keputusan dalam perniagaantani.

*This course covers the applications of agribusiness economic concepts through the demand and supply analyses, market structure, and decision making in agribusiness*

PPT4206 Pengurusan Koperasi Pertanian/ *Management Of Agricultural Cooperative* 3 (3+0)

Prasyarat : PPT3201

Kursus ini merangkumi sejarah perkembangan, teori, knsep dan akta serta bentuk koperasi pertanian di Malaysia. Kursus ini juga membincangkan fungsi, peranan, strategi pengurusan dan kepentingannya kepada industri pertanian. Perbincangan juga diperluaskan kepada persamaan dan perbezaan antara organisasi pertubuhan pertanian di negara lain.

*This course encompasses the historical development, theories, concept, Acts and types of the agricultural cooperatives in Malaysia. This course also discusses the function, role, management strategies and their importance to the agriculture industry. Discussions also extend to similarities and differences vis-a-vis other country's agricultural organizations.*

PPT4209 Sistem Pengurusan Perladangan/ *Plantation Management Systems* 3 (3+0)

Prasyarat : Tiada

Kursus ini merangkumi prinsip pengurusan perladangan dan cara membuat keputusan dalam organisasi dan operasi sektor perladangan. Isu dan cabaran dalam sektor perladangan juga akan dibincangkan.

*This course covers the principle of estate management and decision making process in organisational and farm operations. Issues and challenges in the plantation sector are also discussed.*

PPT4210      Pembangunan Sumber Manusia Dalam Sektor Pertanian/ *Human Resource Development in Agricultural Sector*      3 (3+0)

Prasyarat : Tiada

Kursus ini merangkumi teori pembangunan sumber manusia, asas keperluan kerja, program latihan, proses penilaian, dan pengurusan sumber manusia dalam organisasi sektor pertanian.

*This course covers the theory of human resource development, basic job requirement, training program, evaluation process, and management of human resource in agricultural organizations.*

PPT4301      Pemasaran Perniagaantani/ *Agribusiness Marketing*      3 (2+1)

Prasyarat : PPT3302 atau PPT3301

Kursus ini merangkumi aplikasi konsep pemasaran firma dan sistem perniagaantani, penilaian prestasi sistem pemasaran dan kefahaman persekitaran pemasaran. Ia juga meneliti pembentukan pelan pemasaran dan pengurusan campuran pemasaran.

*This course encompasses the application of marketing concept in the agribusiness firm and system, evaluation of performance of marketing systems and understanding of marketing environment. It further examines the development of a marketing plan and management of the marketing mix*

PPT4302      Pemasaran Perniagaantani Antarabangsa/ *International Agribusiness Marketing*      3 (2+1)

Prasyarat : Tiada

Kursus ini merangkumi pengenalan kepada pemasaran antarabangsa termasuk analisis persekitaran yang meliputi dimensi ekonomi, budaya, politik dan peraturan antarabangsa. Pengurusan dan pengawal-seliaan pemasaran antarabangsa juga ditekankan

*This course encompasses an overview of international marketing including its environment, economic, cultural, political and legal dimensions. The management and coordination of international marketing are also emphasized*

PPT4303      E-Perniagaantani/ *E-Agribusiness*      3 (2+1)

Prasyarat : PPT3302

Kursus ini merangkumi proses dan pelaksanaan perniagaan atas talian dalam sektor perniagaantani. Kaedah membangunkan laman sesawang perniagaan, analisis strategi pemasaran serta undang-undang siber juga ditekankan.

*This course encompasses the process and implementation of online business in agribusiness sector. Methods of developing business websites, marketing strategy analysis and cyber laws will also be emphasized.*

PPT4304      Pengurusan Rantaian Bekalan Produk Makanan/ *Food Product Supply Chain Management*      3 (2+1)

Prasyarat : Tiada

Kursus ini meliputi konsep pengurusan rantaian bekalan dalam pengeluaran, pemprosesan dan pemasaran produk makanan. Isu dan cabaran pengurusan rantaian bekalan juga diberi penekanan.

*This course covers the concept of supply chain management in production, processing and marketing of food products. Issues and challenges on supply chain management are also emphasized*

PPT4350 Pengurusan Perniagaantani Kecil Dan Sederhana/ *Small and Medium Agribusiness Management* 3 (2+1)

Prasyarat : Tiada

Kursus ini merangkumi konsep dan strategi pengurusan perniagaantani kecil dan sederhana yang berdaya saing. Kaedah penilaian daya maju perniagaan, penerokaan modal, teknik mitigasi risiko dan strategi pertumbuhan perniagaan juga akan dibincangkan

*This course encompasses the management concepts strategies of competitive small and medium agribusiness enterprises. Methods to evaluate the feasibility of business, capital procurement, risk mitigation techniques, and business growth strategies will also be discussed*

PPT4402 Pengurusan Kewangan Perniagaantani/ *Agribusiness Financial Management* 3 (3+0)

Prasyarat : ACT2112 atau PPT3401

Kursus ini meliputi penggunaan prinsip pengurusan kewangan untuk mencapai penggunaan sumber modal yang optimum dalam operasi perniagaantani. Aspek pengurusan kredit yang meliputi pembiayaan secara pinjaman, pajakan dan sewa-beli juga dibincangkan untuk meningkatkan pengetahuan pelajar dalam menganalisis masalah pengurusan kewangan perniagaantani.

*This course covers the application of financial management principles in achieving optimum use of capital resources for agribusiness operations. Credit management aspects include financing by loans, leasing and hire purchase will be discussed in order to increase students' knowledge in analyzing problems in agribusiness financial management.*

PPT4501 Polisi dan Peraturan Perniagaantani/ *Agribusiness Policy And Regulations* 3 (3+0)

Prasyarat : ECN3100 atau EPT3102

Kursus ini merangkumi polisi pertanian Negara seperti Dasar Agromakanan Negara (DAN), Dasar Komoditi Negara (DKN), dan Bidang Ekonomi Utama Negara (NKEA) pertanian. Polisi perdagangan antarabangsa, Organisasi Perdagangan Dunia (WTO) serta kawasan perdagangan bebas juga dibincang. Peraturan berkaitan pengeluaran dan pemasaran produk perniagaantani turut ditekankan. *This course encompasses national agricultural policies such as National Agro-Food Policy (DAN), National Commodity Policy (DKN), and National Key Economy Area (NKEA) Agriculture. International trade policies, World Trade Organization (WTO), and free trade areas are also discussed. Regulations related to production and marketing of agribusiness products are emphasized.*

PPT4503 Isu-isu Semasa Perniagaantani/ *Current Issues In Agribusiness* 3 (3+0)

Prasyarat : Tiada

Kursus ini meliputi isu semasa dalam sektor perniagaantani dan disampaikan melalui kuliah, tugas, pembentangan dan perbincangan oleh pelajar secara individu dan kumpulan kecil. Penceramah dari industri juga akan dijemut.

*This course covers current issues in agribusiness sector and is disseminated through lectures, assignment, presentation and discussion by students in small groups or individually. Guest speakers from the industries are also invited.*

PPT4701 Keusahawanan Perniagaantani/ *Agribusiness Entrepreneurship* 3 (1+2)

Prasyarat : Tiada

Kursus ini merangkumi konsep keusahawanan, ciri usahawan, dan pembinaan pelan perniagaan. Pelaksanaan projek, strategi pemasaran, dan isu semasa keusahawanan juga ditekankan.

*This course covers the concepts of entrepreneurship, the characteristics of an entrepreneur, and construction of a business plan. Implementation of project, marketing strategies and current issues of entrepreneurship in agribusiness are also emphasized.*

PPT4801      Teknik Kuantitatif Perniagaantani/ *Quantitative Techniques In Agribusiness*      3 (2+1)

Prasyarat : PPT3801

Kursus ini meliputi model kuantitatif sebagai alat untuk membuat keputusan yang melibatkan pembentukan model, konsep matrik dan vektor, pemrograman linear, masalah pengangkutan, tugas dan pengagihan, model rangkaian, PERT/CPM dan analisis keputusan.

*This course covers the quantitative models as tools for decision makings which include model formulation, matrix and vector concepts, linear programming, transportation, assignment and transshipment problems, network model, PERT/CPM and decision analysis.*

PPT4901      Latihan Industri Perniagaantani/ *Agribusiness Industrial Training*      12 (0+12)

Prasyarat : Tiada

Kursus ini merangkumi penempatan pelajar di syarikat berasaskan perniagaantani selama satu semester untuk mengikuti latihan dalam semua aspek pengurusan. Pelajar akan diselia oleh pegawai firma dan staf akademik. Laporan yang komprehensif perlu disediakan oleh pelajar di akhir latihan.  
*This course encompasses placement of students in agribusiness firms for one semester to undergo training in all aspects of management. The students will be supervised by the firms and academic staff. A comprehensive report will have to be prepared by students at the end of the training.*

PPT4999      Projek Ilmiah Tahun Akhir/ *Final Year Academic Project*      6 (0+6)

Prasyarat : Tiada

Kursus ini merangkumi pengetahuan dan pengalaman praktik dalam mengendalikan dan melaporkan sesuatu projek penyelidikan. Pelajar dikehendaki mengenalpasti topik untuk diselidiki dalam bidang pengkhususan dengan bimbingan seorang penyelia. Pelajar akan merancang, melaksana dan melaporkan hasil kajiannya mengikut format yang diterima pakai.

*This course encompasses knowledge and practical experience in conducting and reporting of a research project. Students are required to identify a researchable topic in their specialization area with the guidance of a supervisor. Students will also plan, implement and report the findings of the research in accordance to an acceptable format.*

EPT3100      Prinsip Ekonomi Pertanian/ *Principles of Agricultural Economics*      3 (3+0)

Prasyarat : Tiada

Kursus ini meliputi prinsip teori ekonomi serta kesan dasar kerajaan dalam sektor pertanian Malaysia.

*This course covers the principles of economic theory and the impact of government policies on the Malaysian agricultural sector.*

EPT3101      Ekonomi Sumber Asli/ *Economic Of Natural Resources*      3 (3+0)

Prasyarat : ECN3100/EPT3100/EPT3102

Kursus ini meliputi perbincangan tentang teori ekonomi dan kaedah yang digunakan untuk menganalisis isu berkaitan pengurusan sumber asli.

*This course covers discussion on the economic theories and methods used to analyze issues related*



serta penyediaan rancangan pemasaran pertanian.

*This course covers the applications of principles of marketing in agricultural and food sector and the preparations of agricultural marketing plan.*

EPT4303      Perdagangan Serahan Hadapan dan Opsyen/ *Futures And Options Trading*      3 (3+0)

Prasyarat : Tiada

Kursus ini merangkumi konsep perdagangan serahan hadapan, basis harga tunai dan serahan hadapan, analisis asas dan teknikal, opsyen ke atas serahan hadapan komoditi, strategi utama urusniaga opsyen, strategiharga dan pengurusan risiko dalam membuat keputusan pelaburan.

*This course encompasses the basics of commodity futures trading, cash-futures basis fundamental and technical analyses of futures trading, options on commodity futures and major strategies in option application, pricing strategies and the management of risk.*

EPT4401      Kewangan Pertanian/ *Agricultural Finance*      3 (3+0)

Prasyarat : PPT3401

Kursus ini merangkumi prinsip pengurusan kewangan dan aplikasinya dalam mencapai penggunaan optimum sumber modal dalam operasi pertanian.

*The course covers principles of financial management and its application in achieving optimum use of capital resources for agriculture operations*

EPT4501      Ekonomi dan Dasar Pembangunan Pertanian/ *Economics of Agricultural Development and Policy*      3 (3+0)

Prasyarat : ECN3100

Kursus ini merangkumi pelbagai teori pembangunan, polisi dan isu semasa pertanian di negara maju, negara membangun dan negara kurang maju.

*This course encompasses various agricultural development theories, policies and current issues in developed, developing and less developed countries.*

EPT4602      Kaedah Penyelidikan Dalam Ekonomi Pertanian/ *Research Methods In Agricultural Economics*      3 (2+1)

Prasyarat : Tiada

Kursus ini meliputi perbincangan tentang konsep, tujuan dan kepentingan penyelidikan dalam bidang ekonomi pertanian serta kaedah menulis laporan penyelidikan.

*This course covers discussion on the concept, purpose and importance of research in agricultural economics and writing technique of research report.*



*This course covers the concept, development and support services of agriculture recreational park.*

TKP3401      Teknologi Maklumat Dan Komunikasi Untuk Pertanian/ *Information and Communication Technology for Agriculture*      3 (2+1)

Prasyarat : Tiada

Kursus ini merangkumi ICT dan pemprosesan, pengaliran maklumat dan aplikasi ICT dalam pertanian.

*This course encompasses ICT and processing, information flows and ICT applications in agriculture.*

TKP3501      Mekanisasi Pertanian/ *Agriculture Mechanization*      3 (2+1)

Prasyarat : Tiada

Kursus ini membincangkan mengenai cara yang sistematik untuk menggunakan dan mengurus mesin dan jentera dalam pertanian bermula daripada pembukaan tanah hingga ke aktiviti lepas tuai termasuk pembangunan sistem pengairan.

*This course discusses the systematic ways of utilizing and managing machinery in agriculture beginning from land clearing to postharvest activities including the development of an irrigation system*

TKP3503      Pemprosesan Tanaman Perladangan/ *Plantation Crop Processing*      3 (2+1)

Prasyarat : Tiada

Kursus ini meliputi pengenalan kepada pemprosesan tanaman perladangan. Pengajaran akan memfokuskan kepada pemahaman terhadap operasi yang terlibat dalam pemprosesan tanaman perladangan. Pelajar juga akan didedahkan kepada pengenalan dan pemilihan operasi pemprosesan yang sesuai untuk hasil pemprosesan yang optimum.

*This course covers the introduction of plantation crop processing. The teaching will focus on the understanding of the operations involved in the processing of plantation crop. Students will also be exposed to the identification and selection of appropriate processing operations for optimum processing results*

TKP4201      Pemindahan Teknologi Pertanian/ *Transfer Of Agricultural Technology*      3 (2+1)

Prasyarat : Tiada

Kursus ini merangkumi konsep, pembangunan, penilaian, perlindungan, serta isu dan cabaran semasa pemindahan teknologi pertanian.

*This course encompasses concepts, development, evaluation, protection, current issues and challenges in agricultural technology transfer.*

TKP4202      Komunikasi Pertanian/ *Agricultural Communication*      3 (2+1)

Prasyarat : Tiada

Kursus ini merangkumi teori dan kaedah komunikasi pertanian, isu etika dan perundangan, strategi dan cabaran.

*This course encompasses theories and methods in agricultural communication, legal and ethical issues, strategies and challenges.*

TKP4203      Perencanaan Program Pengembangan Pertanian/ *Programme Planning In Agricultural Extension*      3 (2+1)

Prasyarat : Tiada

Kursus ini merangkumi konsep dan proses perencanaan program pengembangan pertanian, pelaksanaan dan penilaian program.

*This course covers concepts and process of programme planning in agricultural extension, implementation and evaluation.*

TKP4802      Kejuruteraan Akuakultur/ *Aquaculture Engineering*      3 (2+1)

Prasyarat : Tiada

Kursus ini merangkumi sistem akuakultur, pam pengudaraan, kolam dan tangki, sumber air, kualiti air, kadar alir, pengukuran aras dan rawatan air. Penekanan diberikan kepada unit penetasan, pemanenan, pemungutan dan pengangkutan tangkapan.

*This course encompasses aquaculture systems, pump, aeration, ponds and tank, water supply, water quality, water flow, water level measurements and treatments. Emphasis is given to hatchery unit, harvesting, collection and transportation of catch.*

### **Pejabat Dekan/ Dean's Office**

PRT2008      Pertanian dan Manusia/ Pertanian dan Manusia/ *Agriculture and Man*      2 (2+0)

Prasyarat : Tiada

Kursus ini merangkumi evolusi pertanian daripada permulaan kepada status masa kini sebagai aktiviti terancang dan terurus, didorong oleh kemajuan ekonomi dan teknologi. Pertanian moden dipaparkan sebagai sains, seni dan bisnes yang meliputi peranan dan impaknya terhadap pengurusan sumber dan pembangunan manusia. Perbincangan merangkumi scenario pertanian Malaysia.

*This course encompasses the evolution of agriculture from the beginnings to its present status as planned and managed activities, driven by economics and technological advancement. Modern agriculture is presented as a science, an art and a business encompassing its role and impact on resource management and human development. Discussion incorporates Malaysian agriculture scenarios.*

PRT3003      Pertanian, Persekitaran dan Sistem Makanan/ *Agriculture, Environment And Food System*      3 (3+0)

Prasyarat : Tiada

Kursus ini meliputi aktiviti pertanian yang mempengaruhi kualiti alam sekitar dan pengeluaran produk komoditi pertanian yang baik melalui sistem pengurusan persekitaran untuk mengekalkan kualiti tanah, air dan udara bersih. Isu semasa tentang kepelbagaian produk, kualiti makanan, sekuriti dan keselamatan makanan, etika serta cabaran dalam era globalisasi diliputi.

*This course covers agricultural activities influencing environmental quality and production of good agricultural product commodities through environmental management system to maintain clean soil, water and air. Current issues on product diversity, food quality, food security and safety, ethics and challenges in the era of globalization are covered.*

PRT3006 Prinsip Pertanian Lestari/ *Principles Of Sustainable Agriculture* 2 (2+0)

Prasyarat : Tiada

Kursus ini merangkumi keperluan dan perkembangan pertanian lestari. Amalan pertanian yang mengambilkira elemen pembangunan sosial, pertumbuhan ekonomi dan pemuliharaan alam sekitar dibincangkan.

*The course encompasses the need and development of sustainable agriculture. Agricultural practices that consider the elements of social development, economic growth and environmental conservation are discussed.*

PRT3007 Sistem Pengeluaran Pertanian/ *Agriculture Production System* 3 (3+0)

Prasyarat : Tiada

Kursus ini memperkenalkan konsep pengeluaran pertanian lestari yang menghubungkan antara factor pengeluaran, pengurusan dan aktiviti lepastuai. Sistem pengeluaran tanaman, penternakan dan akuakultur akan dibincangkan dengan contoh yang berkenaan.

*This course introduces the concept of sustainable agricultural production system which relates interaction of the production factors, management and post-harvest activities. Systems for crop, livestock and aquaculture production will be discussed with relevant examples*

PRT3008 Keselamatan Dan Kesejahteraan Perladangan/ *Plantation Safety and Security* 3 (1+2)

Prasyarat : Tiada

Kursus ini merangkumi prinsip keselamatan dan kesejahteraan pekerja, penilaian risiko, perancangan keselamatan dan pengurusan insiden dalam industri perladangan.

*This course covers principles of occupational safety and security, risk assessment, security planning and incident management in the plantation industry*

PRT3201 Asas Statistik Bagi Sains Pertanian/ *Elementary Statistics For Agricultural Science* 2 (2+0)

Prasyarat : Tiada

Kursus ini merangkumi kaedah statistik asas. Tajuk-tajuk termasuk statistik keperihalan, kebarangkalian, pensampelan rawak, ujian hipotesis, jangkaan, regresi linear dan korelasi.

*The course encompasses basic statistical methods. Topics include descriptive statistics, probability, random sampling, tests of hypothesis, estimation, simple linear regression and correlation.*

PRT3202 Rekabentuk Dan Analisis Eksperimen/ *Experimental Design And Analysis* 3 (2+1)

Prasyarat : Tiada

Kursus ini meliputi kaedah melaksanakan eksperimen yang merangkumi rekabentuk eksperimen, pensampelan, analisis dan interpretasi data dan membuat rumusan.

*This course covers the methods of conducting experiments including experimental design, sampling, data analysis and interpretation, and formulating conclusions.*

- PRT3204      Biometri/ *Biometri*      4 (3+1)
- Prasyarat : Tiada
- Kursus ini merangkumi kaedah statistik untuk merekabentuk eksperimen, menganalisis data dan membuat kesimpulan daripada keputusan eksperimen
- This course encompasses statistical methods to design an experiment, to analyze the data and to make conclusions from the experimental results*
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- PRT3401      Kimia Pertanian/ *Agricultural Chemistry*      3 (2+1)
- Prasyarat : Tiada
- Kursus ini merangkumi prinsip asas kimia yang penting dalam bidang pertanian termasuk proses kimia dalam pertanian, prinsip analisis bahan pertanian dan pengenalan kepada bahan kimia organik asli dan sintetik dalam pertanian.
- This course encompasses the important basic chemical principles in agriculture which includes chemical processes in agriculture, analytical principles of agricultural materials and introduction to natural and synthetic organic chemicals in agriculture.*
- 
- PRT3402      Biokimia Pertanian/ *Agricultural Biochemistry*      3 (2+1)
- Prasyarat : Tiada
- Kursus ini merangkumi proses biokimia dalam sistem eukariot, struktur dan peranan biomolekul, pemangkinan dan kawalan tindakbalas biokimia.
- This course encompasses biochemical processes in eukaryotic system, structure and roles of biomolecules, catalysis and control of biochemical reactions.*
- 
- PRT3501      Mikrobiologi Pertanian/ *Agricultural Microbiology*      3 (2+1)
- Prasyarat : Tiada
- Kursus ini meliputi prinsip mikrobiologi serta aplikasi dan peranan mikrob di dalam alam sekitar dan industri.
- This course covers principles of microbiology as well as the application and role of microbes in the environment and industry.*
- 
- PRT4002      Pertanian Persis/ *Precision Agriculture*      3 (2+1)
- Prasyarat : Tiada
- Kursus ini merangkumi konsep dan amalan lestari dalam pertanian persis yang lestari. Pengukuran variabiliti menerusi berbagai prosedur persampelan, pemetaan nutrien, hasil dan pemetaan perosak, interpolasi corak ruang, sistem maklumat geografi, permodelan dan simulasi pertumbuhan tanaman, dan penggunaan data penderiaan jarak jauh.
- This course encompasses concepts and sustainable practices in precision agriculture. Variability measurements using various sampling procedures, nutrient, yield and pest mapping, interpolation of spatial patterns, geographical information system, modelling and simulation of crop growth, and use of remote sensing data.*
- 
- PRT4041      Sistem Pengeluaran Organik/ *Organic Production Systems*      3 (2+1)
- Prasyarat : Tiada
- Kursus ini meliputi prinsip dan amalan dalam pengeluaran makanan organik dengan menitikberatkan

sistem perladangan lestari, sistem tanaman, kawalan perosak dan penyakit, piawaian organik dan pensijilan, sosioekonomi dan pemasaran.

*This course covers the principles and practices of organic food production with emphasis on sustainable farming systems, pest and disease control, organic standard and certification, socioeconomics and marketing.*

PRT4201 Penilaian Sumber Pertanian/ *Agricultural Resource Evaluation* 3 (2+1)

Prasyarat : Tiada

Kursus ini merangkumi penilaian sumber pertanian termasuk sumber tanah, air, genetik, tenaga dan sumber manusia, dan ramalan hasil pertanian.

*This course encompasses evaluation of various resources for agriculture which include soil, water, genetic, energy and human resources, and yield forecasting.*

PRT4301 Permodelan Dan Simulasi Komputer Dalam Pertanian/ *Modelling And Computer Simulation In Agriculture* 3 (2+1)

Prasyarat : Tiada

Kursus ini meliputi pemerihalan proses biofizikal dan proses mikrometeorologi tanaman dalam bentuk persamaan matematik.

*This course covers the description of biophysical and crop micrometeorological processes in the form of mathematical equations.*

PRT4999 Projek Ilmiah Tahun Akhir/ *Final Year Academic Project* 8 (0+8)

Prasyarat : Tiada

Kursus ini merangkumi perancangan, pelaksanaan, analissi dan penterjemahan data, menyedia dan membentangkan laporan saintifik.

*This course encompasses planning, implementation, data analysis and interpretation, preparation and presentation of scientific report.*

### **Jabatan Pengurusan Tanah/ Department of Land Management**

SST3005 Sains Tanah Asas/ *Fundamentals Of Soil Science* 3 (2+1)

Prasyarat : Tiada

Kursus ini merangkumi pembentukan tanah, sifat kimia, fizik dan biologi tanah, pemakanan tumbuhan dan baja, pengelasan, survei dan penilaian tanah.

*This course encompasses soil formation, physical, chemical and biological properties, plant nutrition and fertilizers, soil classification, survey and evaluation.*

SST3201 Tanah-Tanah Di Malaysia/ *Soils Of Malaysia* 3 (2+1)

Prasyarat : Tiada

Kursus ini merangkumi prinsip survei tanah, pemerihalan profil tanah, pengelasan tanah di Malaysia mengikut siri dan pengurusan am kumpulan tanah utama.

*This course encompasses the principles of soil survey, description of soil profile, classification of soils in Malaysia according to series and the general management of major soil group.*

SST3502 Ekologi Tanah/ *Soil Ecology* 3 (2+1)

Prasyarat : Tiada

Kursus ini meliputi prinsip ekologi tanah, interaksi antara organisma tanah dan persekitarannya, peranan tanah dalam ekosistem, proses biologi dan faktor mempengaruhi aktiviti organisma, kesan pencemaran terhadap organisma tanah, kawalan biologi dan bioremediasi tanah tercemar.

*This course covers the principles of soil ecology, interactions between soil organisms and their environments, role of soils in ecosystem, biological processes and factors influencing the activities of soil organisms, the impact of pollution on soil organisms, biological control and bioremediation of polluted soils.*

SST3602 Pengurusan Tanah Lestari/ *Sustainable Soil Management* 3 (2+1)

Prasyarat : Tiada

Kursus ini merangkumi konsep pertanian lestari, cara menilai kesuburan tanah dan keperluan baja, peningkatan dan penyelenggaraan kualiti tanah, kesan dan kawalan degradasi tanah, tanah sebagai sinki untuk bahan cemar dan cara mengurusnya.

*This course encompasses the concept of sustainable agriculture, methods of assessing soil fertility and fertilizer requirement, improvement and maintainance of soil quality, impacts and control of soil degradation, soil as a sink for pollutants and its management.*

SST3603 Pengurusan Kesuburan Tanah/ *Soil Fertility Management* 3 (2+1)

Prasyarat : Tiada

Kursus ini meliputi prinsip, kepentingan dan amalan pengurusan kesuburan tanah, nutrien dan air untuk penghasilan tanaman, kesan amalan ladang terhadap kesuburan tanah untuk pengeluaran tanaman optimum.

*This course covers the principles, importance and practices in managing soil fertility, nutrient and water for crop production, effects of field management on soil fertility for optimum crop production.*

SST3604 Kesuburan Tanah Tanaman Perladangan/ *Soil Fertility for Plantation Crops* 3 (1+2)

Prasyarat : Tiada

Kursus ini meliputi prinsip, kepentingan dan amalan pengurusan kesuburan tanah, nutrien dan air untuk penghasilan tanaman perladangan, kesan amalan ladang terhadap kesuburan tanah dalam mengoptimalkan pengeluaran tanaman perladangan dengan menggunakan Amalan Pertanian Baik (GAP).

*This course covers the principles, importance and practices in managing soil fertility, nutrient and water for plantation crop production, effects of field management on soil fertility for optimum plantation crop production using Good Agricultural Practices (GAP).*

SST3802 Pengurusan Sisa Pertanian/ *Agricultural Waste Management* 3 (2+1)

Prasyarat : Tiada

Kursus ini meliputi pengenalan kepada jenis sisa pertanian, masalah pencemaran alam sekitar dan pengurusan secara mesra alam untuk pelupusan dan/atau kitaran semula, dan aspek peraturan alam sekitar.

*This course covers introduction to the different types of agricultural wastes, environmental problems*

*and environmental friendly waste management for disposal and/or recycling, and environmental regulatory aspects.*

SST4201 Pembentukan dan Pengelasan Tanah/ *Soil Formation And Classification* 3 (2+1)

Prasyarat : SST3005 atau setara

Kursus ini meliputi morfologi tanah, luluhawa dan pembentukan tanah dan mineral, dan pengelasan tanah.

*This course covers soil morphology, weathering and formation of soils and minerals, and soil classification.*

SST4202 Survei Tanah Dan Pengelasan Kesesuaian Guna Tanah/ *Soil Survey and Land Use Suitability Classification* 3 (2+1)

Prasyarat : Tiada

Kursus ini meliputi teknik survei tanah, *Legend Map* tanah dan pengelasan kesesuaian guna tanah untuk pertanian. Pelajar didedahkan kepada pelaksanaan survei tanah di agensi perladangan.

*This course covers techniques of soil survey, soil Legend Map and land use suitability classification for agriculture. Students are exposed to soil survey activity in plantation agencies.*

SST4302 Fizik Tanah/ *Soil Physics* 3 (2+1)

Prasyarat : SST3005 atau setara

Kursus ini merangkumi ciri fizik dan proses fizikal tanah seperti air tanah, hakisan tanah dan struktur tanah.

*This course encompasses the soil physical characteristics and processes such as soil water, soil erosion, and soil structure.*

SST4303 Pemuliharaan Tanah/ *Soil Conservation* 3 (2+1)

Prasyarat : Tiada

Kursus ini merangkumi proses, faktor, kaedah pengawalan, ramalan hakisan dan kepentingan pemuliharaan tanah tropika. Kesan pemuliharaan tanah ke atas tanaman dan persekitaran dibincangkan.

*This course encompasses the processes, factors, control measures, prediction of soil erosion and importance of tropical soil conservation. The impact of soil conservation on crop and the environment are discussed.*

SST4304 Perubahan Iklim Dan Pertanian/ *Climatic Change And Agriculture* 3 (2+1)

Prasyarat : SST3005 atau setara

Kursus ini merangkumi sains perubahan iklim, penyebab dan kesannya terhadap pengeluaran makanan, usaha mitigasi dan ramalan perubahan iklim.

*This course encompasses the science of climate change, its causes and effects on food production, mitigation efforts and prediction of climate change.*

SST4402 Kimia Tanah/ *Soil Chemistry* 3 (2+1)

Prasyarat : SST3005 atau setara

Kursus ini meliputi proses utama kimia dalam persekitaran tanah termasuk mineralogi lempung silikat dan proses luluhawa, kimia koloid, keasidan dan kemasinan tanah, dan tindakbalas redoks dalam tanah.

*This course covers the main chemical processes in the soil environment which include mineralogy of*

*silicate clays and weathering process, colloidal chemistry soil acidity and salinity, and redox reactions in soil.*

SST4501 Mikrobiologi Tanah Lanjutan/ *Advanced Soil Microbiology* 3 (2+1)

Prasyarat : Tiada

Kursus ini meliputi ekologi tanah, faktor yang mempengaruhi aktiviti mikroorganisma tanah, kaedah pengiraan populasi dan pengasingan mikrob, interaksi tanah-tumbuhan-mikrob, transformasi mineral, kesan ekologi racun perosak, kawalan biologi, dan bioremediasi tanah.

*This course covers soil ecology, soil factors affecting activities of soil microorganisms, methods of microbial population count and isolation, soil-plant-microbe interactions, mineral transformations, ecological effects of pesticides, biological control, and soil bioremediation.*

SST4601 Kesuburan Tanah II/ *Soil Fertility II* 3 (2+1)

Prasyarat : Tiada

Kursus ini meliputi kitaran nutrien, mobility nutrien dalam tanah, pengambilan oleh tumbuhan, kekurangan dan keracunan nutrien. Penilaian kesuburan tanah, pembajaan dan tafsiran data bagi mengekal dan membaiki kesuburan tanah juga dibincang.

*This course covers nutrient cycles, nutrient mobility in soil, plant nutrient uptake, deficiency and toxicity. Evaluation of soil fertility, fertilization and interpretation of data for sustaining and improving soil fertility are also discussed.*

SST4602 Kelestarian Perladangan Dan Pengurusan Kualiti/ *Plantation Sustainability and Quality Management* 3 (2+1)

Prasyarat : Tiada

Kursus ini menumpukan kepada amalan pertanian baik merangkumi amalan pemuliharaan tanah, air dan biodiversiti serta kualiti udara bagi mengurangkan impak kepada alam sekitar. Pengurusan kualiti merangkumi peningkatan sosial dan polisi kelestarian juga diberi penekanan.

*This course focuses on good agriculture practices emphasizing on soil, water and biodiversity conservation and air quality to reduce environmental impact. Quality management which includes social enhancement and sustainability policies are emphasized*

SST4701 Mineralogi Tanah/ *Soil Mineralogy* 3 (2+1)

Prasyarat : Tiada

Kursus ini meliputi jenis, pembentukan dan sifat mineral tanah serta pelbagai kaedah mengenalpasti mineral.

*This course covers the types, formation and properties of soil minerals and various methods to identify minerals.*

SST4801 Sains Tanah Kesekitaran/ *Environmental Soil Science* 3 (2+1)

Prasyarat : SST3005

Kursus ini merangkumi degradasi tanah, pelepasan gas rumah hijau dari tanah, pencemaran air dan udara, hujan asid dan kesan perubahan iklim. Remediasi dan pengurusan tanah untuk pertanian lestari ditekankan.

*This course encompasses soil degradation, greenhouse gas emission, groundwater and air pollution, acid rain and impact of climate change. Soil remediation and management for sustainable agriculture*

are emphasized.

SST4999 Projek Ilmiah Tahun Akhir/ *Final Year Project*

6 (0+6)

Prasyarat : Tiada

Kursus ini merangkumi sorotan bahan rujukan, perancangan, rekabentuk dan pelaksanaan kajian berkaitan dengan pengurusan dan teknologi dalam perladangan, analisis dan interpretasi data, dan penyediaan dan pembentangan laporan kajian

*This course encompasses review of literature, planning, design and implementation of a study related to management and technology in plantations, analysis and interpretation of data, preparation and presentation of a study report*

## KURSUS TAWARAN FAKULTI LAIN

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

### 1. FAKULTI BAHASA MODEN DAN KOMUNIKASI

1.1	BBI2423	<i>Academic Interaction and Presentation</i>	3 (2+1)
1.2	BBI2424	<i>Academic Writing</i>	3 (2+1)
1.4	BBI2416	Business English	3 (3+0)
1.5	KOC3301	Pengenalan Komunikasi Korporat/ <i>Introduction to Corporate Communication</i>	3 (3+0)
1.6	BBI2414	Interactive Speaking	3 (3+0)
1.7	BBI2415	Report Writing	3 (3+0)
1.8	BBC2401	Mandarin I/ <i>Mandarin I</i>	3 (2+1)
1.9	BBC2402	Mandarin II/ <i>Mandarin II</i>	3 (2+1)
2.0	BBA2401	Bahasa Arab I/ <i>Arabic I</i>	3 (2+1)
2.1	BBA2402	Bahasa Arab II/ <i>Arabic II</i>	3 (2+1)

### 2. FAKULTI EKOLOGI MANUSIA

2.1	SKP2101	Kenegaraan Malaysia/ <i>Malaysian Nationhood</i>	3 (3+0)
2.2	SKP2203	Tamadun Islam dan Tamadun Asia/ <i>Islamic Civilization and Asian Civilization</i>	2 (2+0)
2.3	SKP2204	Hubungan Etnik/ <i>Ethnic Relations</i>	2 (2+0)

### 3. FAKULTI PERUBATAN VETERINAR

3.1	VPK3101	Kesihatan dan Penjagaan Haiwan/ <i>Animal Health and Care</i>	4(3+1)
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4.	FAKULTI SAINS DAN TEKNOLOGI MAKANAN		
4.1	FST3003	Pengenalan Kepada Sains Makanan/ <i>Introduction to Food Science</i>	3 (3+0)
5.	FAKULTI SAINS KOMPUTER DAN TEKNOLOGI MAKLUMAT		
5.1	SSK3000	Teknologi Maklumat dan Penggunaannya/ <i>Information Technology and its Applications</i>	3 (2+1)
6.	FAKULTI SAINS		
6.1	MTH3002	Pengenalan kepada Kalkulus/ <i>Introduction to Calculus</i>	4(3+1)
6.2	MTH3004	Pengenalan kepada Matematik Ekonomi dan Perniagaan/ <i>Introduction to Economics And Business Mathematics</i>	4(3+1)
7.	FAKULTI BIOTEKNOLOGI DAN SAINS BIOMOLEKUL		
7.1	BCM3000	Prinsip Biokimia/ <i>Principles of Biochemistry</i>	4 (4+0)
8.	FAKULTI EKONOMI DAN PENGURUSAN		
8.1	ECN3100	Prinsip Ekonomi/ <i>Principles of Economics</i>	3 (3+0)
8.2	MGM3351	Undang-undang Komersial/ <i>Commercial Laws</i>	3 (3+0)
8.3	ACT2111	Pengantar Perancangan dan Penggunaan Maklumat Perakaunan/ <i>Introduction To Planning And Use Of Financial Information</i>	3 (3+0)
9.	FAKULTI PENGAJIAN PENDIDIKAN		
9.1	FCE3204	Kemahiran Berfikir/ <i>Thinking Skills</i>	2 (2+0)
9.2	DCE3406	Kepimpinan dalam Pengembangan dan Pembangunan Masyarakat/ <i>Leadership in Extension &amp; Community Development</i>	3 (3+0)
9.3	DCE3304	Perencanaan Program Pendidikan Dewasa/ <i>Adult Education Program Development</i>	3 (3+0)
9.4	DCE3311	Pendidikan Dewasa/ <i>Adult Education</i>	3 (3+0)
9.5	DCE3411	Pembangunan Sumber Masyarakat/ <i>Community Development</i>	3 (3+0)

## ELEx SCHEME FOR 4 YEARS PROGRAMMES FROM SEPTEMBER 2013

MUET Band	Graduation Requirements for 4-year programmes
1 & 2	3 BBI + 3 CEL + 24 LAX points
3 & 4	2 BBI + 2 CEL + 36 LAX points
5 & 6	3 CEL + 36 LAX points

Sem	4 - Years Programme					
	MUET 1 & 2		MUET3 & 4		MUET 5 & 6	
Sem 1	BBI2422	CEL101	CEL102	LAX	LAX	
Sem 2	LAX	CEL102	BBI2423		CEL103	
Sem 3	BBI2423		BBI2424		LAX	
Sem 4	BBI2424		LAX		Choose ONE : CEL104/105	
Sem 5	LAX		LAX		LAX	
Sem 6	Choose ONE : CEL105/106/107		Choose ONE : CEL105/106/107		LAX	
Sem 7	LAX		LAX		Choose ONE : CEL105/106/107	
Sem 8	LAX <u>or</u>	OPTIONS : CEL104/105/10 6/107	LAX <u>or</u>	OPTIONS : CEL104/105/10 6/107	LAX <u>or</u>	OPTIONS : CEL104/105/106/107

### Note :

Students who are away on Industrial Training in any semester need not enroll in any course or LAX for that particular semester, but they must enroll in a course LAX in subsequent semesters.

### BBI courses

- BBI2422 (Reading for Academic Purpose)
- BBI2423 (Academic Interaction and Presentation)
- BBI2424 (Academic Writing)

### CEL courses

- CEL101 (Vocabulary and Grammar for Communication)
- CEL102 (Effective Listening and Speaking)
- CEL103 (Writing Academic Texts)
- CEL104 (Oral Presentation)
- CEL105 (Spoken Communication for the Workplace)
- CEL106 (Communication for Professional Development)
- CEL107 (Written Business Communication)

### LAX

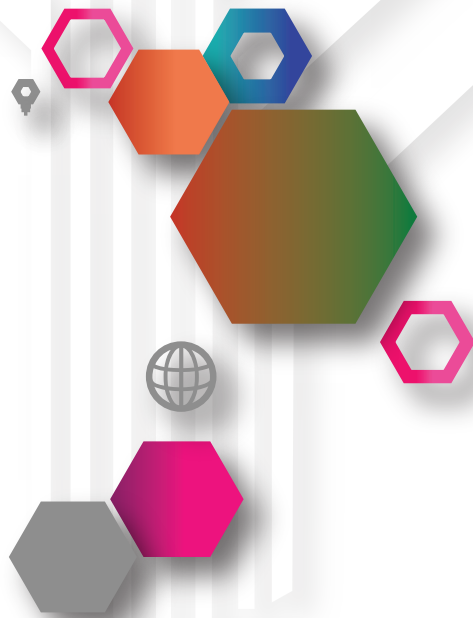
- LAX (6 points or 12 points)
- 1 point = 2 hours per week

### Pre-requisites for courses

- CEL102 : Level 2 in CEL101 or MUET Band 5-6
- CEL103 : Passed BBI2424 or MUET Band 5 - 6
- BBI2423 : Level 2 in CEL102
- BBI2424 : Passed BBI2423
- CE2104,105,106,107 :Passed BBI2424 or MUET Band 5 – 6

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