

FACULTY OF AGRICULTURE

Undergraduate Programmed Offered:

Bachelor Programme

1. *Bachelor of Agricultural Science*
2. *Bachelor of Horticultural Science*
3. *Bachelor of Science in Agribusiness*
4. *Bachelor of Agriculture-Aquaculture*
5. *Bachelor of Agriculture-Animal Science*
6. *Bachelor of Science Plantation Management*

STUDY SCHEME (BACHELOR OF AGRICULTURAL SCIENCE)

NOTES : L = LECTURE , L/T = LAB/TUTORIAL							
SEMESTER 1				SEMESTER 2			
1 ST YEAR							
CODE	COURSE NAME	L	L/T	CODE	COURSE NAME	L	L/T
SKP2101	Malaysian Nationhood	3	0	SKP2204	Ethnic Relations	2	0
SKP2203	Islamic Civilization and Asian Civilization	2	0	BBI2423	Academic Interaction and Presentation	2	1
EPT3102	Agricultural Economics	2	1	AGR3301	Crop Physiology	2	1
PRT2008	Agriculture and Man	2	0	PRT3403	Agricultural Chemistry and Biochemistry	333	1
AGR3101	Agricultural Botany	2	1	FCE3204	Thinking Skills	2	0
KOM3403	Public Oration	2	1	AGR3502	Food Crops	2	0
	Co-curriculum	0	1	AGR3001	Farm Practice: Food Crops	0	1
TOTAL		14	3	Co-Curriculum		0	1
				TOTAL		13	5
2 ND YEAR							
CODE	COURSE NAME	L	L/T	CODE	COURSE NAME	L	L/T
AGR3501	Plantation Crops	2	0	TKP3201	Agricultural Extension	2	1
AGR3204	Plant Breeding	2	1	PPT3701	Agricultural Entrepreneurship	1	2
AKU3201	Principles of Aquaculture	2	1	PLP3204	Fundamentals of Plant Pathology	2	1
SST3005	Fundamentals of Soil Science	2	1	SHW3002	Animal Agriculture	2	1
PLP3104	Fundamentals Of Entomology	2	1	AGR3102	Principles of Weed Science	2	1
BBI2424	Academic Writing	2	1	TOTAL		13	5
AGR3002	Farm Practices: Plantation Crops	0	1				
TOTAL		12	6				
3 RD YEAR							
CODE	COURSE NAME	L	L/T	CODE	COURSE NAME	L	L/T
AGR3701	Experimentation and Agriculture Biometry	3	1	PRT4959A	Bachelor Dissertation	0	3
TKP3501	Agricultural Mechanisation and Irrigation	2	1	TOTAL			3
SST3603	Soil Fertility Management	2	1				
TOTAL		7	3				
4 TH YEAR							
CODE	COURSE NAME	L	L/T	CODE	COURSE NAME	L	L/T
PRT4959B	Bachelor Dissertation	0	3	PRT4901	Industrial Training	0	12
TOTAL			3	TOTAL			12

STUDY SCHEME (BACHELOR OF HORTICULTURAL SCIENCE)

NOTES : L = LECTURE , L/T = LAB/TUTORIAL							
SEMESTER 1				SEMESTER 2			
1 ST YEAR							
CODE	COURSE NAME	L	L/T	CODE	COURSE NAME	L	L/T
KOM3403	Public Oration	2	1	BBI2423	Academic Interaction and Presentation	2	1
PRT2008	Agriculture and Man	2	0	SKP2101	Malaysian Nationhood	3	0
SST3005	Fundamentals of Soil Science	2	1	AGR3301	Crop Physiology	2	1
AGR3101	Agricultural Botany	2	1	EPT3102	Agricultural Economics	2	1
HRT3402	Plant Propagation and Nursery Management	2	1	HRT3430	Farm Practice: Ornamental and Landscape Horticulture	0	1
PRT3402	Agricultural Biochemistry	2	1	HRT3431	Ornamental and Flower Production	2	0
Co-Curriculum		0	1	PLP3106	Horticultural Plant Entomology	1	1
TOTAL		12	5	Co-Curriculum		0	1
				TOTAL		14	4
2 ND YEAR							
CODE	COURSE NAME	L	L/T	CODE	COURSE NAME	L	L/T
BBI2424	Academic Writing	2	1	FCE3204	Thinking Skills	2	0
SKP2204	Ethnic Relations	2	0	HRT3441	Turf Science	2	0
AGR3204	Plant Breeding	2	1	HRT3440	Farm Practice: Turf	0	1
HRT3410	Farm Practice: Vegetable Production	0	1	PPT3301	Principles of Agricultural Management and Marketing	3	0
HRT3420	Farm Practice: Fruit Production	0	1	TKP3501	Agricultural Mechanisation and Irrigation	2	1
HRT3411	Vegetable Production	2	0	Elective			
HRT3421	Pomology	2	0	TOTAL		13	5
PLP3205	Horticultural Plant Pathology	1	1				
TOTAL		11	5				
3 RD YEAR							
CODE	COURSE NAME	L	L/T	CODE	COURSE NAME	L	L/T
SKP2203	Islamic Civilization and Asian Civilization	2	0	PPT3701	Agricultural Entrepreneurship	1	2
AGR3701	Experimentation and Agriculture Biometry	3	1	PRT4959A	Bachelor Dissertation	0	3
TKP3201	Agricultural Extension	2	1	Elective			
Elective				TOTAL		1	5
TOTAL		7	2				
4 TH YEAR							
CODE	COURSE NAME	L	L/T	CODE	COURSE NAME	L	L/T
PRT4959A	Bachelor Dissertation	0	3	PRT4901	Industrial Training	0	12
Elective				TOTAL		0	12
TOTAL		0	3				

STUDY SCHEME (BACHELOR OF SCIENCE IN AGRIBUSINESS)

NOTES : L = LECTURE , L/T = LAB/TUTORIAL							
SEMESTER 1				SEMESTER 2			
1 ST YEAR							
CODE	COURSE NAME	L	L/T	CODE	COURSE NAME	L	L/T
AGR3001	Farm Practice: Food Crops	0	1	BBI2423	Academic Interaction and Presentation	2	1
FST3003	Introduction to Food Science	3	0	PPT3201	Principles of Agribusiness Management	3	0
KOM3403	Public Oration	3	0	PPT3401	Agribusiness Accounting	3	1
PPT3001	Introduction to Malaysia Agribusiness System	3	0	PRT3003	Agriculture, Environment And Food System	3	0
PRT2008	Agriculture and Man	2	0	SKP2204	Ethnic Relations	2	0
MTH3004	Introduction to Mathematics Economics and Business	3	1	SST3005	Fundamentals of Soil Science	2	1
SKP2203	Islamic and Asian Civilization	2	0	Co-Curriculum		0	1
Co-Curriculum		0	1	TOTAL		15	4
TOTAL		16	3				
2 ND YEAR							
CODE	COURSE NAME	L	L/T	CODE	COURSE NAME	L	L/T
BBI2424	Academic Writing	2	1	FCE3204	Thinking Skills	2	0
EPT3102	Agricultural Economics	2	1	MGM3351	Commercial Laws	3	0
PPT3302	Principle of Agribusiness Marketing	3	0	PPT3801	Statistics in Agribusiness	2	1
PPT3402	Agribusiness Cost and Management Accounting	2	1	SKP2101	Malaysian Nationhood	3	0
PRT3007	Agriculture Production System	3	0	TKP3002	Farm Practice : Aquaculture	0	1
Elective		3	0	Elective		3	0
TOTAL		15	3	Elective		3	0
				TOTAL		16	2
3 RD YEAR							
CODE	COURSE NAME	L	L/T	CODE	COURSE NAME	L	L/T
PPT4602	Agribusiness Research Methods	2	1	PPT4204	Agribusiness Economics	3	0
PPT4701	Keusahawanan Perniagaantani/ Agribusiness Entrepreneurship	1	2	PPT4999	Final Year Academic Project	0	3
SHW3003	Farm Practice: Livestock Production	0	1	Elective		3	0
Elective		3	0	Elective		3	0
Elective		3	0	Elective		3	0
Elective		3	0	TOTAL		12	3
TOTAL		12	4				
4 TH YEAR							
CODE	COURSE NAME	L	L/T	CODE	COURSE NAME	L	L/T
PPT4304	Food Product Supply Chain Management	2	1	PPT4901	Agribusiness Industrial Training	0	12
PPT4999	Final Year Academic Project	0	3	TOTAL		0	12
Elective		3	0				
Elective		3	0				
TOTAL		8	4				

STUDY SCHEME (BACHELOR OF AGRICULTURE-AQUACULTURE)

NOTES : L = LECTURE , L/T = LAB/TUTORIAL							
SEMESTER 1				SEMESTER 2			
1 ST YEAR							
CODE	COURSE NAME	L	L/T	CODE	COURSE NAME	L	L/T
AKU3103	Ichthyology	2	1	PRT2008	Agriculture and Man	2	0
BBI2423	Academic Interaction and Presentation	2	1	AKU3106	Aquatic Botany	2	1
AKU3105	Agriculture Production System	2	1	BBI2424	Academic Writing	2	1
AKU3602	Aquatic Ecology	2	1	AKU3109	Fish Physiology and Biochemistry	3	1
SKP2101	Malaysian Nationhood	3	0	SKP2204	Ethnic Relations	2	0
SKP2203	Islamic Civilization and Asian Civilization	2	0	QKxxxxx	Co-Curriculum	0	1
QKS2112	Basic Swimming	0	1	PPT3301	Principles of Agricultural Management and Marketing	3	0
TOTAL		13	5	TOTAL		14	4
2 ND YEAR							
CODE	COURSE NAME	L	L/T	CODE	COURSE NAME	L	L/T
PPT3701	Agricultural Entrepreneurship	2	1	TKP3206	Aquaculture Extension	1	1
AKU3201	Principles of Aquaculture	2	1	AKU3301	Fish Genetics and Breeding	2	1
AKU4402	Live Food Production in Aquaculture	2	1	AKU3302	Fish Seed Technology and Fry Management	2	1
AKU3601	Water and Soil Quality in Aquaculture	2	1	AKU3401	Aquaculture Nutrition	2	1
AKU3501	Fish Health Management	2	1	AKU3210	Finfish Culture	1	2
EPT3102	Agricultural Economics	2	1	Elective		2	1
TOTAL		13	5	TOTAL		10	7
3 RD YEAR							
CODE	COURSE NAME	L	L/T	CODE	COURSE NAME	L	L/T
AKU3802	Innovation in Aquaculture	1	2	AKU4959A	Bachelor Dissertation	0	3
AKU3108	Statistics and Research in Aquaculture	3	1	Elective		8	6
AKU3801	Postharvest In Aquaculture	1	1	TOTAL		8	9
Elective		2	1				
Elective		2	1				
TOTAL		9	6				
4 TH YEAR							
CODE	COURSE NAME	L	L/T	CODE	COURSE NAME	L	L/T
AKU4959B	Bachelor Dissertation	0	3	AKU4901	Industrial Training	0	12
Elective		7	3	TOTAL		0	12
TOTAL		7	6				

STUDY SCHEME (BACHELOR OF AGRICULTURE-ANIMAL SCIENCE)

NOTES : L = LECTURE , L/T = LAB/TUTORIAL							
SEMESTER 1				SEMESTER 2			
1 ST YEAR							
CODE	COURSE NAME	L	L/T	CODE	COURSE NAME	L	L/T
BBI2423	Academic Interaction and Presentation	2	1	BBI2424	Academic Writing	2	1
PRT2008	Agriculture and Man	2	0	EPT3100	Principles of Agricultural Economics	3	0
SKP2101	Malaysian Nationhood	3	0	PRT3402	Agricultural Biochemistry	2	1
SKP2203	Islamic Civilization and Asian Civilization	2	0	SKP2204	Ethnic Relations	2	0
PRT3007	Agriculture Production System	3	0	SHW3602	Statistics for Animal Science	2	1
SHW 3200	Anatomy and Physiology of Domestic Animals I	2	1	SHW3201	Anatomy and Physiology of Domestic Animals II	2	1
Co-Curriculum		0	1	Co-Curriculum		0	1
TOTAL		14	3	TOTAL		13	5
2 ND YEAR							
CODE	COURSE NAME	L	L/T	CODE	COURSE NAME	L	L/T
FCE3204	Thinking Skills	2	0	PPT3301	Principles of Agricultural Management and Marketing	3	0
SHW3403	Basic Animal Nutrition	2	1	SHW3304	Livestock Breeding	2	1
SHW3103	Animal Behavior and Welfare	3	0	SHW3501	Meat Animal Science	2	1
SHW3203	Animal Reproduction	2	1	SHW3502	Dairy Science	2	1
SHW3303	Animal Genetics	2	1	SHW3510	Poultry Science	2	1
SHW3405	Pasture Science	2	1	SHW3511	Swine Science	3	0
TOTAL		13	4	TOTAL		14	4
3 RD YEAR							
CODE	COURSE NAME	L	L/T	CODE	COURSE NAME	L	L/T
PPT3701	Agricultural Entrepreneurship	1	2	SHW3700	Livestock Waste Management	2	1
SHW3104	Animal Health Management	2	1	SHW4999A	Final Year Project	0	3
KOM3403	Public Oration	3	0	ELive		11	1
ELive		6	3	TOTAL		13	5
TOTAL		13	5				
4 TH YEAR							
CODE	COURSE NAME	L	L/T	CODE	COURSE NAME	L	L/T
SHW4999B	Final Year Project	0	3	SHW4901	Industrial Training	0	12
ELive		9	3	TOTAL		0	12
TOTAL		9	6				

STUDY SCHEME (BACHELOR OF SCIENCE PLANTATION MANAGEMENT)

NOTES : L = LECTURE , L/T = LAB/TUTORIAL							
SEMESTER 1				SEMESTER 2			
1 ST YEAR							
CODE	COURSE NAME	L	L/T	CODE	COURSE NAME	L	L/T
AGR3101	Agricultural Botany	2	1	AGR3102	Principles of Weed Science	2	1
AGR3302	Perennial Crop Physiology	2	1	BBI2423	Academic Interaction and Presentation	2	1
PRT2008	Agriculture and Man	2	0	TKP3205	Extended Communication and Agricultural Method Demonstration	2	1
QKxxxxx	Co-Curriculum	0	1				
SKP2203	Islamic Civilization and Asian Civilization	2	0	PLP3104	Fundamentals of Entomology	2	1
SKP2204	Ethnic Relations	2	0	QKxxxxx	Co-curriculum	0	1
SST3005	Fundamentals of Soil Science	2	1	SKP2101	Malaysian Nationhood	3	0
TOTAL		12	4	TOTAL		13	3
2 ND YEAR							
CODE	COURSE NAME	L	L/T	CODE	COURSE NAME	L	L/T
AGR4507	Production of Plantation Crop – Oil Palm	2	1	AGR3503	Minor Industrial Plantation Crops	1	2
BBI2424	Academic Writing	2	1	EPT3102	Agricultural Economics	2	1
PLP3204	Fundamentals of Plant Pathology	2	1		Elective		
PPT3701	Agricultural Entrepreneurship	1	2		Elective		
	Elective				Elective		
	Elective				Elective		
TOTAL				TOTAL			
3 RD YEAR							
CODE	COURSE NAME	L	L/T	CODE	COURSE NAME	L	L/T
AGR4511	Rubber Plantation Management	1	2	PPT3401	Agribusiness Accounting	3	1
PRT3204	Biometri	3	1	Elective			
	Elective			Elective			
	Elective			TOTAL			
	Elective						
TOTAL							
4 TH YEAR							
CODE	COURSE NAME	L	L/T	CODE	COURSE NAME	L	L/T
SPP4905	Plantation Management and Operation	0	14	PRT4901	Industrial Training	0	12
TOTAL		0	14	TOTAL		0	12

COURSE SYNOPSIS

Department of Aquaculture

AKU3103	Ichthyology	3 (2+1)
Prerequisite : None		
This course covers the diversity of fish biology and ecology. Comparison in structural, behavioural and adaptive ability of fishes in diverse geographical spaces are discussed		
AKU3104	Fish Physiology	3 (2+1)
Prerequisite : None		
This course covers the biology of organ and cell, blood circulation, sensory, nerve, movement, digestion, reproduction and endocrine in fish. The physiological reaction in the process to achieve equilibrium level in aquatic environment are discussed.		
AKU3105	Biology of Aquatic Invertebrates	3 (2+1)
Prerequisite : None		
The course covers diversity and biological characteristics of groups and species of aquatic invertebrates living in marine and freshwater ecosystems. Relationship between adaptation and survival of invertebrates with its structure and biological system is emphasised.		
AKU3106	Aquatic Botany	3 (2+1)
Prerequisite : None		
This course covers the taxonomy and classification, important characteristic for each main group of aquatic plants based on the freshwater and marine environments. Utilization, importance and threats to aquatic plants are discussed.		
AKU3108	Statistics and Research in Aquaculture	4 (3+1)
Prerequisite : None		
This course covers the fundamental of statistics and data analysis in aquaculture and fisheries. This course emphasises on interpretation of results of data analysis in the real-life situation, besides emphasises on the experimental design using appropriate statistical formulation		
AKU3109	Fish Physiology and Biochemistry	3 (2+1)
Prerequisite : None		
This course covers the main system, function and physiological components for continuous homeostasis in aquatic life. Biochemical and fish physiological processes relevant to the environment and various metabolic pathways in aquatic organisms are emphasised		
AKU3201	Principles Of Aquaculture	3 (2+1)
Prerequisite : None		
This course covers basic principle of aquaculture for food security. The processes involved in pre-production, production and post-production of sustainable aquaculture according to standard practices are discussed		
AKU3210	Finfish Culture	3 (2+1)
Prerequisite : None		
This course covers culture and management of food fish both in fresh and seawater. This course emphasises husbandry, feed management, water management, good aquaculture practices and post harvest handling		
AKU3301	Fish Genetics And Breeding	3 (2+1)
Prerequisite : None		
This course covers concepts of fish genetics, breeding, hybridisation and genetic engineering. Problem solving for selective breeding in fish are discussed		
AKU3302	Fish Seed Technology And Fry Management	3 (2+1)
Prerequisite : None		
This course covers fish reproductive biology, fish seed production techniques, larviculture, management, packaging and transportation of fry. Issues in fish breeding are discussed		
AKU3401	Aquaculture Nutrition	3 (2+1)
Prerequisite : None		
This course covers preparation and feeding practices in aquaculture. Nutrition in feed ingredients for optimal growth of aquatic animals, current issues and limitations in aquaculture nutrition are emphasized		

AKU3501	Fish Health Management	3 (2+1)
Prerequisite : None		
This course covers concepts of pathology, microbiology and parasitology in relation to fish diseases, diagnostic procedures, control and treatment. The importance of good husbandry, control and prevention of diseases in aquaculture are discussed		
AKU3601	Water and Soil Quality in Aquaculture	3 (2+1)
Prerequisite : None		
This course covers theory and determination of water and soil quality for site seLion. Analysis and interpretation of physico chemical of water and soil are emphasised		
AKU3602	Aquatic Ecology	3 (2+1)
Prerequisite : None		
This course covers the major components of aquatic ecology and ecological parameters measurement techniques. Negative impacts towards aquatic ecosystem as well as the monitoring and the remediation techniques are discussed.		
AKU3801	Postharvest In Aquaculture	3 (2+1)
Prerequisite : None		
This course covers handling of various types of aquatic produce, processing and quality control. Value added product and byproduct of aquatic produce are discussed		
AKU3802	Innovation in Aquaculture	3 (2+1)
Prerequisite : None		
This course covers theory and product innovation, constraint and challenges in aquaculture sector. Creativity and innovation of product and aquaculture technology are emphasised		
AKU4101	Fisheries Resource Assessment and Management	3 (2+1)
Prerequisite : None		
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	Limnology	3 (2+1)
Prerequisite : None		
This course covers the biotic components and biological productivity of fresh water ecosystems and the physico-chemical processes affecting them. The importance and application of limnology in inland fisheries and aquaculture management are emphasised		
AKU4103	Oceanography	3 (2+1)
Prerequisite : None		
This course covers physical, chemical and biological factors in marine ecosystems. Impacts of anthropogenic activities, climate change and the solutions are discussed for the sustainability of fisheries and aquaculture		
AKU4202	Culture of Ornamental Fish and Aquatic Plants	3 (2+1)
Prerequisite : None		
This course covers the cultures of seLed ornamental fishes and aquatic plants. Methods and manipulation of cultures as well as management of potential ornamental fishes and plants for commercialization are discussed		
AKU4203	Aquaculture Production Systems	3 (2+1)
Prerequisite : None		
This course covers design, basic equipment seLion and construction of various aquaculture systems. The management and efficiency of the systems for optimal operation are discussed		
AKU4204	Unique Species Culture	3 (2+1)
Prerequisite : None		
The course encompasses the culture techniques and management of various unique aquatic species in Malaysian waters. Marine and fresh water unique species which are yet to be cultured commercially in Malaysian aquaculture industry are emphasised. Usage of product from each unique species are discussed		
AKU4221	Crustacean Culture	3 (2+1)
Prerequisite : None		
This course covers the biology and skills of culture on seLed commercial crustaceans. Issues and problems in crustacean culture industry are discussed		

AKU4231	Mollusc Culture	3 (2+1)
Prerequisite : None		
The course covers the culture of commercial mollusc species. Improvement of cultured species through genetic selection and manipulation of culture procedures are emphasised. Conservation and management in organic extractive aquaculture are discussed		
AKU4243	Algae Culture	3 (2+1)
Prerequisite : None		
This course covers various propagation and culture techniques for microalgae and macroalgae culture. Selected commercial algae based on ecological and economical importance are discussed		
AKU4301	Fish Endocrinology	3 (2+1)
Prerequisite : None		
This course covers the chemical biosynthesis, structures and functions of hormones from the endocrine glands. Problems related to fish endocrinology are emphasised. Reaction and roles of hormones on physical and chemical stresses in aquatic environment are discussed		
AKU4401	Aquafeed Technology	3 (2+1)
Prerequisite : None		
This course covers various formulation and technologies for fish feed production. Every stage of feed processing and quality control for aquaculture industry are emphasized		
AKU4402	Live Food Production in Aquaculture	3 (2+1)
Prerequisite : None		
This course covers the importance of live food production in aquaculture. Types, production techniques and preparation of live food in aquaculture industry are emphasized		
AKU4501	Aquatic Microbiology	3 (2+1)
Prerequisite : None		
This course covers the roles, effects, identification techniques and relations of microorganisms in aquaculture. The importance, applications and current issues of microbiology in aquaculture are discussed		
AKU4502	Fish Immunology	3 (2+1)
Prerequisite : None		
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	Ecology and Management of Wetlands	3 (2+1)
Prerequisite : None		
This course covers the various natural and constructed wetland ecosystems, function and their importance. Management of various wetland ecosystems and factors affecting their living resources due to climate change and environment are discussed		
AKU4701	Information and Communications Technology in Aquaculture	3 (2+1)
Prerequisite : None		
This course covers the utilization and importance of information and communications technology in aquaculture. The suitability of communications and information technology in aquaculture operation and management is discussed		
AKU4801	Recreational Fisheries in Inland Waters Ecotourism	3 (2+1)
Prerequisite : None		
This course covers on the concept of biology and socio-economic in recreational fisheries management as alternatives for resource management. Implementation and operation of recreational fisheries in Malaysia and aspect of eco-tourism are discussed		
AKU4802	Molecular Biology in Aquaculture	3 (2+1)
Prerequisite : None		
This course covers concepts and molecular biology techniques for cells of plants, animals and aquatic microbes. Application of genetic engineering and current issues of biotechnology in aquaculture are discussed		
AKU4804	Policy and Acts for Fisheries and Aquaculture	3 (2+1)
Prerequisite : None		
This course covers the policy, act and legislation in fisheries and aquaculture. Implementation of rules and law in fisheries and aquaculture are emphasised. The importance of enforcement in fisheries and aquaculture resource management are discussed		

AKU4901	Industrial Training	3 (2+1)
Prerequisite : None		
This course involves student attachment at a private or government aquaculture farm. A practical exposure to the actual working conditions and management practices carried out in the field of aquaculture and fisheries are emphasised through short term projects		
RSB4630	Innovation Methodology	3 (2+1)
Prerequisite : None		
The course covers the philosophy of innovation, theories of creativity, idea and process in design and the components in the innovation and commercialization process. Emphasis is on human governance and ethics in innovation		
AKU4959	Bachelor Dissertation	6 (0+6)
Prerequisite : None		
This course covers literature review, use of appropriate research techniques, data collLion and analyses, interpretation of results, discussion, conclusion and originality of scientific studies in research project		

SHW3406	Principles Of Livestock Nutrition	3 (2+1)
Prerequisite : SHW3001		
This course encompasses classification, functions, nutrient utilization and requirement for maintenance, growth and production, and ration formulation.		
SHW3501	Meat Animal Science	3 (2+1)
Prerequisite : SHW3200, SHW3201, SHW3403		
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	Dairy Science	3 (2+1)
Prerequisite : SHW3200, SHW3201, SHW3400, SHW3403		
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		
SHW3503	Meat Livestock Production	3 (2+1)
Prerequisite : SHW3001		
This course encompasses meat livestock production management. Aspects of slaughter management, handling, processing, quality and marketing of meat and meat products are emphasized.		
SHW3504	Dairy Production	3 (2+1)
Prerequisite : SHW3001		
This course encompasses dairy livestock husbandry, management of milking systems, handling of milk on the farm and development of the industry.		
SHW3510	Poultry Science	3 (2+1)
Prerequisite : SHW3200, SHW3201, SHW3403		
This course covers principles of commercial poultry meat and egg production. It emphasizes aspects of reproductive and environmental physiology, genetic and breeding, nutrition, general management, product processing, waste management and welfare of poultry. This course will also discuss problems in poultry production in hot humid tropical climate.		
SHW3511	Swine Science	3 (3+0)
Prerequisite : SHW3200, SHW3201, SHW3403		
This course covers the main aspects of modern pig production including production systems, general farm management and practices, nutrition and breeding systems. Issues on pig farming are discussed		
SHW3512	Poultry Production	3 (2+1)
Prerequisite : SHW3001		
This course encompasses poultry production systems, general farm practices, management at all age stages, nutrition and breeding systems, and egg production.		
SHW3513	Swine Production	3 (2+1)
Prerequisite : SHW3001		
This course encompasses pig production systems, general farm practices, management at all stages, nutrition and breeding systems.		
SHW3602	Statistics for Animal Science	3 (2+1)
Prerequisite : None		
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	Livestock Waste Management	3 (2+1)
Prerequisite : None		
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	Wildlife and Recreational Animals	3 (2+1)
Prerequisite : None		
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	Meat Science	3 (2+1)
Prerequisite : None		
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	Environmental Physiology	3 (3+0)
Prerequisite : Coordinator Approval		
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	Applied Livestock Genetics and Breeding	3 (2+1)
Prerequisite : None		
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	Animal Cytogenetics	3 (2+1)
Prerequisite : SHW3303		
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	Feed Processing Technology	3 (3+0)
Prerequisite : SHW3403		
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	Biotechnology in Animal Feed	3 (3+0)
Prerequisite : SHW3403		
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	Feeds and Feeding	3 (3+0)
Prerequisite : SHW3403 or VPP3130		
This course incorporates classification, quality, processing and nutritive evaluation of feedstuff, nutrient requirement for maintenance and production, and ration formulation for animals.		
SHW4404	Applied Animal Nutrition	3 (2+1)
Prerequisite : SHW3403		
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	Livestock Farm Design And Infrastructure	3 (2+1)
Prerequisite : SHW3003 , SHW3502, SHW3510, SHW3511		
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	Small Ruminant Production	3 (2+1)
Prerequisite : None		
This course encompasses farming systems of goats and sheep which include aspects of management, nutrition, breeding, disease control, and processing of products.		
SHW4502	Dairy Production	3 (2+1)
Prerequisite : None		
This course encompasses advanced dairy cow management, milking technology, maintaining milk quality standard, and discussion on problems commonly faced by entrepreneurs.		
SHW4511	Advanced Swine Science	3 (2+1)
Prerequisite : SHW3511		
this course covers advanced aspects in pig production including reproduction, management in early weaning, methods of feed utilization and manipulation, and application of biotechnology to enhance productivity of pigs.		
SHW4512	Layer Production	3 (2+1)
Prerequisite : SHW3510		
This course covers the management of layer farms. Emphasis is given on the important aspects of poultry science and their practical application to successfully manage layer operations.		
SHW4513	Broiler Production	3 (2+1)
Prerequisite : SHW3510		
This course covers the management and husbandry of breeder and broiler chicken. Important aspects of sustainable operations are emphasised.		
SHW4540	Equine Management	3 (2+1)
Prerequisite : SHW3200, SHW3201		
This course encompasses basic aspects in equine care and management. This includes digestive system, skeletal structure, feeds and feeding practices, health and care and management practices of stabled horses.		

SHW4600	Research Methodology	3 (2+1)
Prerequisite : SHW3602		
This course covers the basic concepts and techniques in conducting research and analysis of data. It includes planning a scientific experiment, analysis and interpretation of the results generated and presentation of the findings. It will cover the basic experimental designs and some advanced statistical methods useful in animal sciences.		
SHW4703	Meat Processing Technology	3 (2+1)
Prerequisite : None		
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	Resource Planning and Evaluation	3 (2+1)
Prerequisite : None		
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	Final Year Project	6 (0+6)
Prerequisite : None		
This course involves the conduct of a study that includes planning use of appropriate techniques, data collLion and analyses, interpretation of result, seminar presentation and report writing		
PRT4901	Industrial Training	12 (0+12)
Prerequisite : None		
In this course, students are exposed to real working environment in industries/organizations. Training includes application of the theoretical and practical aspects that have been studied with current practices in the workplace. Problem solving and communication skills are emphasized.		

Department of Crop Science

AGR3001	Farm Practices: Food Crops	1 (0+1)
Prerequisite : None		
This course covers practices in the production and postharvest management of food crops including cereals, tubers and vegetables		
AGR3002	Farm Practices: Plantation Crops	1 (0+1)
Prerequisite : None		
This course covers practices in production, management and processing of major plantation crops.		
AGR3101	Agricultural Botany	3 (2+1)
Prerequisite : None		
This course covers taxonomy, morphology and anatomy of agricultural crops. The basics of plant reproduction, crop ecology as well as principles of plant conservation and preservation are also discussed.		
AGR3102	Principles Of Weed Science	3 (2+1)
Prerequisite : None		
In this course covers principles, concepts and ecology of weed which includes identification, classification, establishment and habitat requirement, and control and management strategies of weeds in agricultural and non-agricultural areas.		
AGR3204	Plant Breeding	3 (2+1)
Prerequisite : None		
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	Crop Physiology	3 (2+1)
Prerequisite : None		
This course encompasses growth, development and reproductive physiology, seed germination, plant-water relationship, photosynthesis, assimilate translocation, mineral nutrition and fruit development.		
AGR3302	Perennial Crop Physiology	3 (2+1)
Prerequisite : None		
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	Plantation Crops	2 (2+0)
Prerequisite : None		
This course encompasses principles of production, management, marketing and economics of plantation. Comparisons of sustainable plantation crop management systems are discussed		
AGR3502	Food Crops	2 (2+0)
Prerequisite : None		
This course encompasses the comparison of cultivation techniques and maintenance of food crops. Elaborations on the sustainable food crop technology as well as suitable harvesting techniques and handling of produce are discussed		
AGR3503	Minor Industrial Plantation Crops	3 (1+2)
Prerequisite : None		
This course covers the principles of production, management, processing, trends and development of minor plantation crops industries		
AGR3504	Minor Industrial Crops	3 (1+2)
Prerequisite : None		
This course covers the principles of production, management, processing, trends and development of minor plantation crop industry		
AGR3701	Experimentation and Agriculture Biometry	4 (3+1)
Prerequisite : None		
This course covers systematic section of experimental designs in conducting experiments. Data analyses and techniques of interpreting experimental results in agriculture is emphasized		

AGR4100	Agrobiodiversity	3 (3+0)
Prerequisite : None		
This course covers the aspects of biodiversity, management and production of emerging and potential plants for agriculture activities. Methods of environmental manipulation for production and the commercial potential of new crops are discussed		
AGR4101	Advanced Agricultural Botany	3 (2+1)
Prerequisite : AGR3101		
This course covers plant microstructure and applying techniques in molecular biology, micro- propagation and microscopy.		
AGR4103	Plantation Weed Management	3 (2+1)
Prerequisite : None		
This course covers classification, distribution and management of weeds in plantations. Evaluation on the effectiveness of the management techniques and their impact on the agro-ecosystem is also discussed		
AGR4302	Herbicide Science	3 (2+1)
Prerequisite : AGR3102		
This course covers physico-chemical characteristics, degradation and residual effects of herbicide and plant response to herbicide. Factors affecting efficacy of herbicide are discussed		
AGR4203	Quantitative Genetics	3 (2+1)
Prerequisite : None		
This course covers population and quantitative genetic involving changes in gene and genotype frequencies in large and small populations, heritability, selection and genetic advance, analysis of combining ability, mating designs, recurrent selection, concept and mapping of Quantitative Trait Loci (QTL).		
AGR4301	Advanced Plant Physiology	3 (2+1)
Prerequisite : None		
This course covers effects of environmental stresses on photosynthesis respiration and translocation. Mineral nutrition metabolism including absorption and translocation and the physiology of selected commodity are discussed		
AGR4303	Crop Nutrition	3 (2+1)
Prerequisite : None		
Prerequisite : AGR3301 or HRT3302		
This course encompasses the role and function of major nutrient elements, absorption, metabolism, interactions amongst nutrient and the capacity of media to supply nutrients. Effect of nutrient deficiency and excess on growth, yield and the environment are discussed		
AGR4503	Rice Crop Production	3 (2+1)
Prerequisite : None		
This course encompasses rice plant life cycle, yield physiology, environmental factors and planting procedures. The modern rice production technology, grain processing and grain storage are emphasized		
AGR4507	Plantation Crop Production: Oil Palm	3 (2+1)
Prerequisite : None		
This course covers the production, management and processing of oil palm. Factors affecting the efficiency of production and management of oil palm plantation are discussed		
AGR4508	Plantation Crop Production : Rubber	3 (2+1)
Prerequisite : None		
This course covers the rubber industry including production, management and processing.		
AGR4509	Production Of Food Crops	3 (2+1)
Prerequisite : None		
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	Oil Palm Plantation Management	3 (2+1)
Prerequisite : None		
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		
AGR4511	Rubber Plantation Management	3 (2+1)
Prerequisite : None		
This course covers the rubber industry including production, management and processing. Factors affecting the efficiency of rubber plantation production are also discussed		

AGR4801	Sustainable Agriculture	2 (2+0)
Prerequisite : None		
This course covers holistic approaches to develop a sustainable agricultural project based on the functional factors of agro-ecosystem. Methods to evaluate the sustainability of agricultural systems are discussed		
AGR4802	Seed Technology	3 (2+1)
Prerequisite : AGR3301 or HRT3002		
This course encompasses the aspect of seed formation, processing and quality of seeds. Factors influencing seed quality and storage environment for commercial seed production are discussed		
HRT3001	Plant Propagation and Nursery Management	3 (2+1)
Prerequisite : None		
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	Botany and Physiology of Horticultural	4 (3+1)
Prerequisite : None		
This course covers plant systematics and structures, physiological processes, growth and development of horticultural crops.		
HRT3420	Farm Practice: Fruit Production	1 (0+1)
Prerequisite : None		
This course covers field and protected environmental fruit production practices including seedling production, crop management, harvesting, postharvest handling and marketing.		
HRT3410	Farm Practice: Vegetable Production	1 (0+1)
Prerequisite : None		
This course covers practices on sustainable vegetable production involving seedling production, composting, cultivation systems and management in the field and protected environmental. Harvesting, postharvest handling and marketing are discussed		
HRT3430	Farm Practice: Ornamental and Landscape Horticulture	1 (0+1)
Prerequisite : None		
This course involves production and management practices of ornamental/landscape plants, which includes identification, propagation, planting techniques, management and postharvest handling.		
HRT3440	Farm Practice: Turf	1 (0+1)
Prerequisite : None		
This course covers functions and uses of various turf grass species. Construction and maintenance of turf area/site, planting techniques and management of turf grass are emphasized		
HRT3422	Vegetable Production	2 (2+0)
Prerequisite : None		
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		
HRT3421	Pomology	2 (2+0)
Prerequisite : None		
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.		
HRT3431	Ornamental and Flower Production	2 (2+0)
Prerequisite : None		
This course covers classification, principles and techniques of ornamental plant production which includes identification, planting and management		
HRT3400	Horticultural Crop Production	3 (3+0)
Prerequisite : None		
This course covers classification, principles, techniques of production and postharvest handling with emphasis on plant propagation, production factors, maintenance and management of horticultural crops		
HRT3600	Postharvest Physiology	3 (2+1)
Prerequisite : None		
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		

HRT3800	Introduction To Landscape Design	3 (2+1)
Prerequisite : HRT3302 or HRT3431		
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		
HRT3441	Turf Science	2 (2+0)
Prerequisite : None		
This course covers classification and identification of turfgrass species and their uses. Growth requirements, propagation, establishment and management of turfgrass are discussed		
HRT4102	Controlled Environment Agriculture	3 (2+1)
Prerequisite : HRT3000 or HRT3002		
This course covers concept of control and manipulation of environmental factors, instrumentation, crop requirements and management of various cropping systems under controlled environment		
HRT4422	Commercial Fruit Production	3 (2+1)
Prerequisite : None		
This course covers criteria, issues and aspects of production technology for high economic value fruits. Standard operation procedure and financial aspect in production and management are discussed		
HRT4432	Orchid Culture	3 (2+1)
Prerequisite : None		
This course covers classification and identification of genera, hybridization and inheritance, propagation systems, factors affecting growth and development, planting systems, management and postharvest handling and marketing of orchids		
HRT4302	Exotic Ornamental Plants	3 (2+1)
Prerequisite : HRT3301		
This course covers aspects of biological diversity, management and production of exotic and indigenous ornamental plants for cut flowers, container plants and landscape industry.		
HRT4300	Plant Growth Regulators	3 (2+1)
Prerequisite: AGR3301 or HRT3002		
This course covers classification, synthesis, mechanism and roles of growth regulators in plant growth. Manipulation and effects of growth regulator on flower initiation, fruit set and abscission, postharvest and environment are discussed		
HRT4400	Exotic Crop	2 (2+0)
Prerequisite : None		
This course covers aspects of biodiversity, management and production of exotic plants. Preservation, conservation and industrial potential of exotic plants are discussed		
HRT4402	Urban Agriculture	2 (2+0)
Prerequisite : None		
This course covers aspects of urban agriculture and its contribution to socio-economic and urban environment. Various production systems, management and technology that will contribute to a sustainable production practices are discussed		
HRT4441	Turfgrass Management	3 (2+1)
Prerequisite : None		
This course encompasses current issues of turfgrass industry, influence of environment on growth, propagation, planning, establishment and management of turfgrass for various uses		
HRT4800	Soiless Culture	3 (2+1)
Prerequisite : None		
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		
HRT4802	Controlled Environment Horticulture	3 (2+1)
Prerequisite : HRT3000 or HRT3400 or AGR3301		
This course covers concept of control and manipulation of environmental factors, instrumentation, crop requirements and management of various cropping systems under controlled environment. Commercialization of potential crop production under controlled environment is discussed		
HRT4803	Plant Micropropagation	3 (2+1)
Prerequisite : None		
This course encompasses systems, techniques, management and application of in vitro propagation of crop. Growth physiology and economic aspects in commercial production of seedlings are discussed		

HRT4804

Medicinal Plants And Herbs

2 (2+0)

Prerequisite : None

This course covers classifications, principles, field and protected environmental production techniques with emphasis on production factors, propagation, planting, management and postharvest handling of medicinal plants and herbs

Department of Plant Protection

PLP3002	Horticultural Crops Pest Management	3 (2+1)
Prerequisite : None		
This course covers detection, identification and monitoring pests of horticultural crops and turf as well as strategies for their management		
PLP3104	Fundamentals Of Entomology	3 (2+1)
Prerequisite : None		
This course encompasses identification of damage symptoms caused by insect pests. Relationship between damage symptoms and insect species and its sustainable management are discussed		
PLP3105	Urban Pest Management	3 (2+1)
Prerequisite : None		
This course covers the problem of vertebrate and invertebrate urban pests. Aspects of biology, ecology, detection, identification, bio-rational control and effectiveness are discussed.		
PLP3106	Horticultural Plant Entomology	3 (2+1)
Prerequisite : None		
This course covers differentiation of damage symptoms by various horticultural insect pests. Environmental friendly insect pest management is discussed		
PLP3204	Fundamentals Of Plant Pathology	3 (2+1)
Prerequisite : None		
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		
PLP3205	Horticultural Plant Pathology	3 (2+1)
Prerequisite : None		
This course covers the basic principles of plant pathology and disease management of horticultural crops. Identification of important diseases and their control practices are discussed		
PLP4001	Pest Control	3 (2+1)
Prerequisite : None		
This course covers pest management methods of major crops including ecology, assessment methods of pest infestation and crop losses.		
PLP4002	Pesticide Application Technique	3 (2+1)
Prerequisite : None		
This course encompasses major principles in pesticide application, design, selection and maintenance of equipment, pesticide application methods and safety.		
PLP4003	Biological Control Of Crop Pests	3 (2+1)
Prerequisite : None		
This course covers techniques of controlling crop pests utilizing natural enemies including the development and delivery of products and bio-control agents.		
PLP4004	Pest Management of Plantation Crops	3 (2+1)
Prerequisite : None		
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.		
PLP4005	Pest Management of Turfgrass and Horticultural Crops	3 (2+1)
Prerequisite : PLP3204		
This course covers detection, identification and monitoring pests of horticultural crops and turf as well as strategies for their management		
PLP4101	Antomology	3 (2+1)
Prerequisite : None		
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	Apiculture	3 (2+1)
Prerequisite : None		
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	Plant Pathology	3 (2+1)
Prerequisite : None		
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	Pesticide Science	3 (2+1)
Prerequisite : None		
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		

Department of Agribusiness and Information System

PPT3001 Introduction To Malaysia Agribusiness System 3 (3+0)

Prerequisite : None

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 Principles of Agribusiness Management 3 (3+0)

Prerequisite : None

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.

PPT3301 Principles of Agricultural Management and Marketing 3 (3+0)

Prerequisite : None

This course encompasses basic concepts of agricultural marketing and management, marketing environment and influence of government policies on agribusiness

PPT3302 Principle Of Agribusiness Marketing 3 (3+0)

Prerequisite : None

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 Agribusiness Accounting 4 (3+1)

Prerequisite : None

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 Agribusiness Cost and Management Accounting 3 (2+1)

Prerequisite : PT3401

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

PPT3701 Agricultural Entrepreneurship 3 (2+1)

Prerequisite : None

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 Statistics In Agribusiness 3 (2+1)

Prerequisite : None

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 Agribusiness Project Planning And Management 3 (2+1)

Prerequisite : ECN3100/EPT3100/EPT3102

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 Agribusiness Strategic Management 3 (2+1)

Prerequisite : PPT3201

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	Agribusiness Economics	3 (3+0)
Prerequisite : EPT3100/EPT3102/ECN3100		
This course covers the applications of agribusiness economic concepts through the demand and supply analyses, market structure, and decision making in agribusiness		
PPT4206	Management Of Agricultural Cooperative	3 (3+0)
Prerequisite : PPT3201		
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	Plantation Management Systems	3 (3+0)
Prerequisite : None		
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	Human Resource Development in Agricultural Sector	3 (3+0)
Prerequisite : None		
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	Agribusiness Marketing	3 (2+1)
Prerequisite : PPT3302 or PPT3301		
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	International Agribusiness Marketing	3 (2+1)
Prerequisite : None		
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-Agribusiness	3 (2+1)
Prerequisite : PPT3302		
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	Food Product Supply Chain Management	3 (2+1)
Prerequisite : None		
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	Small and Medium Agribusiness Management	3 (2+1)
Prerequisite : None		
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	Agribusiness Financial Management	3 (3+0)
Prerequisite : ACT2112 or PPT3401		
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	Policy And Regulations	3 (3+0)
Prerequisite : ECN3100 or EPT3102		
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	Current Issues In Agribusiness	3 (3+0)
Prerequisite : None		
This course covers current issues in agribusiness sector and is disseminated through Ls, assignment, presentation and discussion by students in small groups or individually. Guest speakers from the industries are also invited.		
PPT4701	Agribusiness Entrepreneurship	3 (1+2)
Prerequisite : None		
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	Quantitative Techniques In Agribusiness	3 (1+2)
Prerequisite : PPT3801		
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	Agribusiness Industrial Training	12 (0+12)
Prerequisite : None		
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	Final Year Academic Project	6 (0+6)
Prerequisite : None		
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	Principles of Agricultural Economics	3 (3+0)
Prerequisite : None		
This course covers the principles of economic theory and the impact of government policies on the Malaysian agricultural sector.		
EPT3101	Economic Of Natural Resources	3 (3+0)
Prerequisite : ECN3100/EPT3100/EPT3102		
This course covers discussion on the economic theories and methods used to analyze issues related to the management of natural resources.		
EPT3102	Agricultural Economics	3 (2+1)
Prerequisite : ECN3100		
This course covers the application of basic concept of economic theory in the field of agriculture and its relation to market structure, supply and demand, government policies, and international trade		
EPT3201	Agricultural Production Economics	3 (3+0)
Prerequisite : ECN3100 or EPT3100 or EPT3110		
This course covers the practical aspects in estimation of different functional forms, interpretation and applications in agricultural production.		
EPT3202	Farm Management	3 (3+0)
Prerequisite : ECN3100/EPT3100/EPT3102		
This course covers applications of economic theory and principles in farm management. Various approaches, methods and tools used in planning, implementing, controlling, and performance analysis for a farm business will be discussed.		
EPT4201	Agricultural Decision Analysis	3 (3+0)
Prerequisite : ECN3100/EPT3102		
This course covers the concepts and application of model in agricultural decision making process. This course also focuses on problem structuring using the four elements of a decision problem.		
EPT4204	Agriculture Project Planning and Management	3 (3+0)
Prerequisite : EPT3100/EPT3110/EPT3102/ECN3100 and PPT3701		
This course covers the theory and techniques of project evaluation and essential steps in planning an agricultural project.		
EPT4301	Agricultural Marketing	3 (3+0)
Prerequisite : EPT3100 or ECN3100		
This course covers the applications of principles of marketing in agricultural and food sector and the preparations of agricultural marketing plan.		

EPT4303	Futures And Options Trading	3 (3+0)
Prerequisite : None		
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	Agricultural Finance	3 (3+0)
Prerequisite : PPT3401		
The course covers principles of financial management and its application in achieving optimum use of capital resources for agriculture operations		
EPT4501	Economics of Agricultural Development and Policy	3 (3+0)
Prerequisite : ECN3100		
This course encompasses various agricultural development theories, policies and current issues in developed, developing and less developed countries.		
EPT4602	Research Methods In Agricultural Economics	3 (2+1)
Prerequisite : None		
This course covers discussion on the concept, purpose and importance of research in agricultural economics and writing technique of research report.		

Department of Agriculture Technology

TKP3001 **Modern Agricultural Technology** 3 (2+1)

Prerequisite : None

This course encompasses the use of agricultural technology to increase yield and quality of agricultural produce and social aspects are discussed in the context of agricultural technology.

TKP3002 **Farm Practices : Aquaculture** 1 (0+1)

Prerequisite : None

This course covers practices in pond preparation managing hatchery unit, breeding, larviculture, pond and tank management, production, feeding and harvesting of fish and prawn.

TKP3104 **Agricultural Biotechnology** 3 (2+1)

Prerequisite : None

This course encompasses agricultural biotechnology, techniques and its applications on plants and animals.

TKP3201 **Agricultural Extension** 3 (2+1)

Prerequisite : None

This course encompasses history, methods, programme planning and exposure to current status of agricultural extension.

TKP3205 **Agriculture Extension Communication and Method Demonstration** 3 (2+1)

Prerequisite : TKP3201

This course encompasses relationship between development of extension communication model and method demonstration. Implementation of method demonstration and effectiveness of agriculture extension activities and field work are discussed

TKP3206 **Aquaculture Extension** 2 (1+1)

This course covers the skills and knowledge to develop effective programs and training in aquaculture extension services to community. Extension projects in aquaculture are conducted based on economics and community development.

TKP3301 **Agriculture Recreational Park** 3 (2+1)

Prerequisite : None

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

TKP3401 **Information and Communication Technology for Agriculture** 3 (2+1)

Prerequisite : None

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

TKP3501 **Agricultural Mechanisation and Irrigation** 3 (2+1)

Prerequisite : None

This course encompasses designs, suitability, handling and operation of major machineries used for agricultural production

TKP3503 **Plantation Crop Processing** 3 (2+1)

Prerequisite : None

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 appropriate processing operations for optimum processing results

TKP4201 **Transfer Of Agricultural Technology** 3 (2+1)

Prerequisite : None

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

TKP4202 **Agricultural Communication** 3 (2+1)

Prerequisite : None

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

TKP4203 **Programme Planning In Agricultural Extension** 3 (2+1)

Prerequisite : None

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

TKP4802

Aquaculture Engineering

3 (2+1)

Prerequisite : None

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.

Dean's Office

PRT2008	Agriculture and Man	2 (2+0)
Prerequisite : None		
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	Agriculture, Environment And Food System	3 (3+0)
Prerequisite : None		
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	Principles Of Sustainable Agriculture	2 (2+0)
Prerequisite : None		
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	Agriculture Production System	3 (3+0)
Prerequisite : None		
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	Plantation Safety and Security	3 (1+2)
Prerequisite : None		
This course covers principles of occupational safety and security, risk assessment, security planning and incident management in the plantation industry		
PRT3201	Elementary Statistics For Agricultural Science	2 (2+0)
Prerequisite : None		
The course encompasses basic statistical methods. Topics include descriptive statistics, probability, random sampling, tests of hypothesis, estimation, simple linear regression and correlation.		
PRT3202	Experimental Design And Analysis	3 (2+1)
Prerequisite : None		
This course covers the methods of conducting experiments including experimental design, sampling, data analysis and interpretation, and formulating conclusions.		
PRT3204	Biometri	4 (3+1)
Prerequisite : None		
This course encompasses statistical methods to design an experiment, to analyze the data and to make conclusions from the experimental results		
PRT3401	Agricultural Chemistry	3 (2+1)
Prerequisite : None		
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	Agricultural Biochemistry	3 (2+1)
Prerequisite : None		
This course encompasses biochemical processes in eukaryotic system, structure and roles of biomolecules, catalysis and control of biochemical reactions.		
PRT3403	Agricultural Chemistry and Biochemistry	4 (3+1)
Prerequisite : None		
This course encompasses the main chemical and biochemical principles in agriculture. The structure and roles of biomolecules, enzymes and hormones, and management of chemical and biochemical information in agriculture are emphasized		

PRT3501	Agricultural Microbiology	3 (2+1)
Prerequisite : None		
This course covers principles of microbiology as well as the application and role of microbes in the environment and industry.		
PRT4002	Precision Agriculture	3 (2+1)
Prerequisite : None		
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	Organic Production Systems	3 (2+1)
Prerequisite : None		
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	Agricultural Resource Evaluation	3 (2+1)
Prerequisite : None		
This course encompasses evaluation of various resources for agriculture which include soil, water, genetic, energy and human resources, and yield forecasting.		
PRT4301	Modelling And Computer Simulation In Agriculture	3 (2+1)
Prerequisite : None		
This course covers the description of biophysical and crop micrometeorological processes in the form of mathematical equations.		
PRT4302	Agroclimatology	3 (3+0)
Prerequisite : None		
This course covers weather components, measurement methods and the effects of climate change on agriculture productivity. Impacts of human activities on climate change and suggestions of several agriculture practices to mitigate the impacts of climate change are discussed		
PRT4999	Final Year Academic Project	8 (0+8)
Prerequisite : None		
This course encompasses planning, implementation, data analysis and interpretation, preparation and presentation of scientific report.		
PRT4959	Bachelor Dissertation	6 (0+6)
Prerequisite : None		
This course covers the preparation of proposal, implementation and scientific writing of research project. Scientific approach to generate data systematically through appropriate design, data collection and analysis are emphasized		

Department of Land Management

SST3005 Prerequisite : None This course encompasses soil formation, physical, chemical and biological properties, plant nutrition and fertilizers, soil classification, survey and evaluation.	Fundamentals Of Soil Science	3 (2+1)
SST3201 Prerequisite : None 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.	Soils Of Malaysia	3 (2+1)
SST3502 Prerequisite : None 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.	Soil Ecology	3 (2+1)
SST3602 Prerequisite : None This course encompasses the concept of sustainable agriculture, methods of assessing soil fertility and fertilizer requirement, improvement and maintenance of soil quality, impacts and control of soil degradation, soil as a sink for pollutants and its management.	Sustainable Soil Management	3 (2+1)
SST3603 Prerequisite : None 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.	Soil Fertility Management	3 (2+1)
SST3604 Prerequisite : None 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).	Soil Fertility for Plantation Crops	3 (2+1)
SST3802 Prerequisite : None 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.	Agricultural Waste Management	3 (2+1)
SST4201 Prerequisite : SST3005 This course covers soil morphology, weathering and formation of soils and minerals, and soil classification.	Soil Formation And Classification	3 (2+1)
SST4202 Prerequisite : None 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.	Soil Survey and Land Use Suitability Classification	3 (2+1)
SST4302 Prerequisite : SST3005 This course encompasses the soil physical characteristics and processes such as soil water, soil erosion, and soil structure.	Soil Physics	3 (2+1)
SST4303 Prerequisite : None 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.	Soil Conservation	3 (2+1)
SST4304 Prerequisite : SST3005 This course encompasses the science of climate change, its causes and effects on food production, mitigation efforts and prediction of climate change.	Climatic Change And Agriculture	3 (2+1)

SST4402	Soil Chemistry	3 (2+1)
Prerequisite : SST3005		
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	Advanced Soil Microbiology	3 (2+1)
Prerequisite : None		
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	Advanced Soil Fertility	3 (2+1)
Prerequisite : None		
This course covers biochemical cycling of nutrient elements, mechanisms of nutrient transport in solid and liquid phases, uptake of nutrients from soil, nutrient deficiencies and toxicities, evaluation of soil fertility, fertilization especially of problem soils, interpretation of analytical data and practical recommendation regarding maintenance and improvement of soil fertility		
SST4602	Plantation Sustainability and Quality Management	3 (2+1)
Prerequisite : None		
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	Soil Mineralogy	3 (2+1)
Prerequisite : None		
This course covers the types, formation and properties of soil minerals and various methods to identify minerals		
SST4801	Environmental Soil Science	3 (2+1)
Prerequisite : SST3005		
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.		
SPP4902	Planning and Management of Planting	14 (0+14)
Prerequisite : AGR3002 and AGR3501		
This course encompasses the aspects of land survey and evaluation to set up and develop a plantation, selection of planting materials and management of plants. Aspects of financial planning and analysis involving setting up a plantation is also emphasized		
SPP4903	Plantation Management	14 (0+14)
Prerequisite : AGR3503 and PPT3401		
This course encompasses the aspects of fertilizer, pest and diseases, and weed management, mechanization and automation, soil conservation, harvesting and processing. Proposed problem solving of plantation management through scientific study in terms of appropriate design, data collection and analyses is also conducted		
SPP4904	Human Resource Management	14 (0+14)
Prerequisite : MGM3113 and TKP3205		
This course encompasses a comprehensive management of the human resources in the estate starting from recruitment right up to training and their welfare. The workers' social problems are discussed. Proposed solution to human resource problem is also conducted through scientific study in terms of appropriate design, data collection and analyses		
SST4999	Final Year Project	6 (0+6)
Prerequisite : None		
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		