

UNIVERSITY MALAYSIA SABAH



UMS
UNIVERSITI MALAYSIA SABAH

List of Course Offered

Inbound Mobility



LIST OF COURSES OFFERED FOR EXCHANGE STUDENTS PROGRAMME (INBOUND MOBILITY)

FACULTY OF SCIENCE AND NATURAL RESOURCES

No	Course Code	Course Name	Course Description	Credit Hour	Year / Semester Offered
1	FP10203	Forest Hydrology	This course will exposed students to the field of physical hydrology in the forest ecosystem. Detail discussion on the water cycle components will help students to understand the importance of each process involved, and able to apply the knowledge further in the management of forest or specifically in water catchment area. Students will also be trained to do hydrological data observation for example, rainfall, interception, infiltration, evaporation and river discharge. Other topics that will also be discussed are variation in the weather, climate change, monitoring and water quality analyses and human impacts on hydrological regime.	3	1/2
2	FP10403	Nature Park Planning and Management I	This course is an introductory course to the background establishment and development of protected areas or nature parks such as National Park and Wildlife Sanctuary. The initial discussion will include topics on historical aspects, concept and park categories. Other relevant topics such as various framework examples, agreements, laws and policies both at national and international level will also be discussed. Based on relevant study cases, issues of park establishment in the perspective of land use at regional scale, as well as social issues on park planning and management, related to local community will be given more attention during further discussion.	3	1/2
3	FP20103	Nature Park Planning and Management II	This course requires the completion of Park Planning and Management I. This course discusses important elements in park planning and management. The component and procedure of preparation of a management plan will be discussed. Management plan and zoning of a park will be emphasized. Inventory of recreation resources, trail assessment planning and visitors management are the important topics in this course. Issues of effective park management will also be emphasized.	3	2/1
4	FS20103	Forest Survey	Theory and practice of forest surveying is an important aspect in forestry. Lecture topics include the theory of land surveying and mapping using the field and office tools. Understanding the aspects of spatial technology in forest survey and assessment of natural resources will be covered. Emphasis will be given on developing individual skills in the use of survey equipment in the field and laboratory. Students will acquire technical competence in computer applications in the field survey and forestry. Case studies will be used to increase student understanding of the course.	3	2/1



No	Course Code	Course Name	Course Description	Credit Hour	Year / Semester Offered
5	FP20203	Zoology and Wildlife Management	Wildlife management is an application of ecological knowledge on wildlife populations and their relationship with plants and other living things. This relationship is important to achieve a balance between human needs and wildlife resources. This course focuses on the concepts and principles of wildlife management. After learning the basics of zoology and wildlife extinction, students will gain an understanding of the selection, design and management of protected areas of wildlife, threats to the species, methods of management and protection to minimize the threat of species extinction. Students will prepare a management plan in group and to be presented at the end of the semester.	3	2/2
6	FP20401	Landscape Drawing Technique	The course comprise two main topics namely graphic and information. Information fundamental such as the concept of space, critical considerations and practical elements for construction will be the materials delivered to students. The second topic will focus on geometric and angle technique, as well as layers and surface. Also included are the principles for problem solving, graphic, skills and communication integration. Students will also be introduced to certain tools in designing concept development and three-dimensional view solution.	1	2/2
7	FP20603	Eco-tourism	This course introduces the concept of sustainable nature tourism and principles in planning and managing tourism activities, especially in protected areas. This course also emphasizes on the issues facing protected areas and management techniques to mitigate negative impacts from the tourism activities. At the end of the course, student should be able to understand the important role of planning and managing tourism activities in protected areas. Other than lectures, field trip would be useful to enhance students' understandings on the theoretical and practical aspects of sustainable tourism.	3	2/2
8	FS20603	Forest Inventory	This course is designed to give students a comprehensive knowledge of the methods commonly used in measuring the standing trees and logs as well as forest stands. This course will focus on tree and forest measurement techniques for evaluating income from timber with detailed coverage of products such as logs, attribute measurement for standing trees, conduct inventory of forest stand volume and prediction of individual tree growth and stand of trees. Sampling technique using plot sampling and point sampling will be taught. The main emphasis of this course is to impart adequate knowledge and understanding to students on how to apply the measurement procedures to solve problems in forestry. Experience in field operations for the techniques taught in this course will be achieved through exercises in a real forest. Methods in problem solving solution are taught and applied to actual problems and forestry data.	3	2/2



No	Course Code	Course Name	Course Description	Credit Hour	Year/ Semester Offered
9	FP20803	Remote Sensing	This course teaches introductory level of Geographic Information Systems (GIS). Students are exposed to the importance of GIS as a tool for planning and management of forest ecosystems. GIS data visualization, database construction and analyses are taught in this course. Integration of results from satellite remote sensing into GIS is also taught. Lectures on GIS are accompanied by practical works to ensure better understandings of students on the use of the technologies.	3	2/2
10	FP30103	Geographic Information System	This course teaches introductory level of Geographic Information Systems (GIS). Students are exposed to the importance of GIS as a tool for planning and management of forest ecosystems. GIS data visualization, database construction and analyses are taught in this course. Integration of results from satellite remote sensing into GIS is also taught. Lectures on GIS are accompanied by practical work to ensure better understandings of students on the use of the technologies.	3	3/1
11	FP30303	Arboriculture	Arboriculture is primarily concerned with the planting and care of trees, shrubs and vines. It involves management activities for both single trees and those in small group especially those found in parks and cities. This course aims to introduce students to the basic of arboricultural principles and practices such as site preparation, species selection, planting techniques, pre-planting and post-planting maintenance. The analytical approach to analyze problems and situations and selecting the most appropriate solution is emphasized here. Hands-on activities have been developed as a supplemental requirement for this course.	3	3/1
12	FP30503	Landscape Architecture and Recreation Facility Design	Landscape architecture is a field consisted of arts, planning, design, management, preservation and conservation, as well as human development. The course will introduce to the students the basic concept of design and planning in landscape architecture field, as well as provision of infrastructures and facilities. This includes pattern, type, and design of recreation facilities, as well as consideration regarding its surroundings. Emphasize is given to the design process in recreation and urban forest area. The course will be conducted according to the teaching standard format which comprise two hours introduction lecture, followed by three hours studio session every week.	3	3/1



No	Course Code	Course Name	Course Description	Credit Hour	Year / Semester Offered
13	FP30703	Environmental Service Evaluation	This course enables students to learn and apply the basic concept of environmental valuation. Natural environment provides human with resources and commodities such as mineral, timber, and clean water. Students will learn several main approaches in estimating the value of environment service and commodity such as clean water, recreation, forest products, and non-timber forest products. The selection of environmental valuation method is highly dependent on the type of environmental service or commodity being valued and also the availability of data resource, time and budget. In this course, five environmental valuation methods will be stressed out; market price-based; surrogate market-based; hypothetical market-based; cost-based; and benefits transfer. Study cases will be given to increase students' understanding about the environmental valuation methods. Additionally, methodology on decision making related to environmental and social value will also be highlighted.	3	3/1
14	FP30202	Recreation Psychology	This course emphasizes on the society's awareness, acknowledgement and appreciation towards recreation. The symbolic understanding and design of leisure activities are also discussed, as well as the appreciation of therapeutic values of recreation through physical activities, aesthetic values and forest aromas. The creativity in designing, planning and changing of lifestyle through leisure activities and recreation is also discussed. Also included is the relationship between recreation and the societies or institution's perception, mental health and conservation culture.	2	3/2
15	FP30403	Urban Forestry	Urban Forestry is specialized in management of trees that grow wild and cultivated in the urban environment. In this course, students will be given emphasis on management aspect such as arboriculture practices and silvicultural treatments. Course content is divided into three parts, namely the importance and benefits existence of trees in urban areas; technical inventory and assessment of landscape plants, and planning and management of the street trees, parks and green corridors. Principles of planning and management of privately owned plants will also be explained.	3	3/2
16	FP30602	Tourism Economy	Knowledge and skills in tourism economics are essential in providing the basic concepts and mechanism in the approach of solving business problems such as costing, pricing, revenue, profit and competitive advantage. The main topics of this course include estimation and projection in supply and demand, pricing, valuation, potential profit maximization and cost minimization, exploration of local and regional economic analysis, use of economic analysis, application of occupation and money value in the daily operation of tourism industry. Economic impact of tourism at the macro-economic as well as micro-level will be also stressed out in the cost and profit analysis. In this course, students are able to learn the economic theory and issues related to tourism industry.	2	3/2



No	Course Code	Course Name	Course Description	Credit Hour	Year / Semester Offered
17	FP40103	Outdoor Recreation	This course aims to prepare the students with physical activities, especially in outdoor recreation such as kayaking, wall climbing, jungle trekking, mountaineering and camping. Apart from lectures, practical works are compulsory to provide comprehensive training and skills to the students. At the end of the course, students should be able to handle the recreational equipment and gadgets such as kayaks, climbing and mountaineering gears.	3	4/1
18	FP40302	Marketing of Recreation Resource	Parks, recreation and leisure time involve an extensive experience in order to have a different purpose and meaning for each participant. Thus, marketing is essential to meet the needs of different participants. This course will focus on the marketing of parks and recreation, especially related to tourism and nature recreation. This will involve identifying and understanding the users / participants and the need or benefit they expect by participating in recreational activities. Marketing aspects of demand and supply of specialized programs and services to meet the demands of users/participants to plan the implementation of recreational activities will also be emphasized.	2	4/1
19	FP40502	Resort and Human Resource Management	Resort management and human resource is one element to ensure profitability and sustainability of the resort industry. This course will focus on key topics in the planning, design and facility management, development, maintenance and operations, specifically in the management requirements, finance, risk management, budgeting, profitability, pricing and revenue management, front desk, advertising, public relations, food & beverage service management, guest activities, event management and direction of the resorts in the context of current environmental changes in the management of the resort. The main concepts that lead to quality assurance principles and techniques applied in the evaluation of hospitality services are also discussed. This course will also focus on human resource issues and explore the various levels of management, but emphasis is given to supervisors and middle management level. This section also assesses the strategic approach in human resource management (HRM), and outlines the strategic thinking in the method of producing sustainable competitive advantage through human resources. The main topics including health and workplace safety, employee relations, selection and recruitment, development and training, human resource planning and human resource management system.	2	4/1



No	Course Code	Course Name	Course Description	Credit Hour	Year / Semester Offered
20	FP40702	Ecology and Landscape Management	This course provides students with an introduction to the discipline of landscape ecology. It is focusing on the interplay between spatial patterns and processes that specifically characterize spatial pattern and how it changes through time. This course provides student with the knowledge on detecting and define the elements of pattern and how these aspects of pattern are interrelated in various landscape. It assist students to relate the structure, function and change in a heterogeneous land area composed of interacting ecosystems. Questions on how human activities can cause impacts on land will be discussed under the agents of pattern formation. Other relevant topic of discussion includes the aspect of change in tropical environment with urban development, extinction and habitat fragmentation aspects and population growth related to planning of landscape management.	2	4/1
21	FX20303	Nature Interpretation	Interpretation is a communication process that builds emotional and intellectual relationship between the audience interest and resources. This course introduces students to the act, principles, tools and practices of interpretation. It includes making effective interpretation, arranging, writing, designing and interpretation evaluation. Students will also learn related planning skills and how to conduct guided visit, how to interact with visitors so they are able to comprehend the exhibits, as well as presenting educational program for a recreational area.	3	2/1
22	FX30303	Climate and Environmental Issues	This course discusses on topics such as climate change phenomenon and its impact based on the current scenario. In the beginning of the course, students will be introduced to what is weather, climate and methods in meteorological data monitoring and data interpretation. Green house phenomenon, desertification, policy and climate change framework and REDD mechanism will also be discussed. Visits to the meteorological station will be organized to enhance the understanding of the students on the subject matter.	3	3/1



No	Course Code	Course Name	Course Description	Credit Hour	Year/ Semester Offered
23	FS20303	Management and Conservation of Biodiversity	This course will expose students on the importance of biodiversity and tropical forest towards nature environment and the influence of human in biodiversity destruction. Issues on biodiversity threats which includes endangered species and problems faced in terrestrial and aquatic ecosystems will be discussed. Emphasize will be given towards biodiversity assessment, design planning of protected areas and management of protected areas in an effort to conserve biodiversity at the species, population and community level. The role of Environmental Impact Assessment (EIA) in the management of protected areas and biodiversity, efforts in conserving biodiversity at the government and international level, as well as issues pertaining conservation and future challenges will also be discussed	3	2/1
24	FS30303	International and Regional Forestry	Forestry issues at the international level are important and increasingly prominent along with the development of globalization. Various international institutions involved directly or indirectly, take part in various initiatives and cooperation on the global forestry. Issues and the role of the international regime have influences in terms of agreement, the implementation of forest policy and forest management at the international, regional, national and local level. This course will also introduce an overall understanding of the forestry resources in ASEAN countries with the focus on forest management in the broader context of political, ecological, economic and social issues. The programs and conservation of forest resources at the national and international level will also be discussed. Topics on international initiatives in forestry as well as involvement and establishment of national initiatives will also be highlighted.	3	3/1
25	FS40103	Community Forestry and Forest Extension	Community forestry refers to any situation in which rural communities participate in the planning and implementation of forest resource use on community land, on land owned by the state, or on private land. These activities are based on their socio-economic needs, skills and knowledge and are integrated into the overall livelihood system of the communities with the objective to improve their living conditions on a sustainable basis. The course will impart the importance of community forestry in the context of rural development, introduce the characteristics of different community forestry concepts applied in Southeast Asia, and explain the role of forestry extension.	3	4/1
26	FX20103	Fundamentals of Forest Entomology	This course will expose students on the fundamentals of insect science and study. Students will be taught about methods in identification and insect biology by introducing important insect groups in the forest ecosystem based on its habitat and feeding group. Interaction of human and insects in the environment will also be discussed. Emphasize will be given on the diagnosis of the effect of insect pests towards forest trees, landscape trees and forest resources. At the end of the course, students will learn how to manage and control insect pests of economic importance.	3	2/1



No	Course Code	Course Name	Course Description	Credit Hour	Year/ Semester Offered
27	FS20203	Forest Fire Management	Forest fire is one of the factors contributing towards the degradation and extinction of flora and fauna diversity. Besides, it is also a factor that causes haze that contributes to air pollution which leads towards disasters in the environment and human life. However, forest fires also contribute to the natural succession process in the dynamics of a forest. Therefore, the importance of learning this course is to know the basic concept knowledge in forest fire management especially in the tropics.	3	2/2
28	FS30403	Forest Valuation	This course begins with an introduction of the array of goods and services that forest provides, and highlights the need to subscribe appropriate values to them in light of competing forest land uses. Recent advances in valuation techniques will be presented in this course using market price approach, surrogate market price approach, production function approaches, stated preference approaches and cost-based approach. The strengths and weaknesses of these valuation approaches will be discussed using case studies found in the region.	3	3/2
29	FS20403	Silviculture	This course will cover two areas namely Plantation silviculture and natural forest silviculture. Plantation silviculture includes areas in nursery and plantation establishment. Topics on nursery will include types, establishment and management. Plantation silviculture will include aspects of establishment, planting distance, fertilizing, protection, thinning, pruning and rotation. Fundamentals of natural forest silviculture practices entails areas such as general silviculture systems in the tropics, development of silviculture in Malaysia and current silviculture system, scope and future challenges.	3	2/2
30	FS30603	Forest Management II	This course covers the essentials of preparing a forest management plan that subscribes to multiple-use concept. Key topics will include forest zoning, resource inventory, annual allowable cut calculation, forest management prescription, human resource planning and budgeting into practice. Students will translate their theoretical learning into practice by preparing a forest management plan using primary and secondary data.	3	3/2
31	FX30403	Environmental Land Use	This course discusses the legal framework and related processes based on the ability of land use planning and consideration of environmental functions. The aspects discussed are the importance of soil as a natural resource to the country, methods of land use management. Land use decision-making process is participatory, policies and laws related. Applications using GIS technology is also being emphasised.	3	3/2



No	Course Code	Course Name	Course Description	Credit Hour	Year/ Semester Offered
32	FX20403	Foresters Knowledge and Skills	As a forester, the respected individual is always involved in outdoor activities such as camping in a forest, scientific expedition, exploration and forest operation which engage the application of foresters' knowledge and skills in the completion of such tasks. These tasks require particular psychomotor skills with attitude and self-esteem that is needed in a forester. The course will emphasize on embedding the forester knowledge through theoretical learning in classroom and theory application through practical and field operation. Students will be taught on knowledge and skills of survival, safety and outdoor's first aid and camping skills. Other than that, special skills for forester such as swimming, tree climbing and usage of forest operation equipments such as tree felling equipment and navigation (GPS, compass and map) will be taught through practical and series of skill tests. Mechanism to inculcate the forester attitude and self-esteem will be accomplished by theory and discussion as well as assignment and group project.	3	2/2
33	SB13103	Introduction To Conservation Biology	This course discusses the importance of conservation and/or protection of environmental and biological components to mankind and several ecosystems. The relationship between man and the environment along with their related problems will be discussed from local and global perspectives. The importance of biological diversity and its relationship with environmental factors and impact of human activities on them will be put forward. Methods of conservation by in-situ or ex-situ will also be discussed, followed by strategic approaches in environmental management encompassing the protection of biological diversity. The final part of this course will touch on several variables in conservation biology such as knowledge on taxonomy, the existing rules and regulations and influence of politics on the management initiatives.	3	1/1
34	SB23103	Entomology	This course is an introduction to biodiversity of the arthropods. This course revolves around the emergence of the arthropods in the animal kingdom millions of years ago and its evolution since it first appeared on the terrestrial realm into various groups to the present time. Vast diversity and variables of the arthropods among the animal kingdom will be explained. Detailed discussions on various topics (diversity, morphology, anatomy and physiology, sensory systems and behavior, reproduction and development, arthropod plant interactions, parasitism, communication and sociality) will be carried out taking into account every group of the arthropods.	3	2/1
35	SB23303	Population Biology And Evolution	A course designed to introduce students to the topic of population biology. The lectures will cover population ecology, population genetics and evolution, with an emphasis on ecological and evolutionary principles. Understanding of basic genetics is essential as is a familiarity with ecology of organisms (plants and animals). Reading will also be assigned on a regular basis from other major texts and the primary literature. Group work will be assigned and presentation required.	3	2/1



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36	SB23503	Plant Diversity	This course will cover the variety of plants in discussing taxonomic characteristics that divide one group of plants from another. Evolution pattern from the most primitive group, namely, algae, bryophytes, ferns, gymnosperms to most advance plants, which are angiosperms will be covered. Variety of species of plants, evolution pattern on vegetative structure, reproduction of plants and of anatomical structures will be presented during practical classes.	3	2/1
37	SB33102	GIS In Conservation Biology	This course aims to introduce the basic concepts, data interpretation applications of remote sensing and GIS in the biodiversity of conservation biology. This is to equip students with ICT knowledge in monitoring and assessments of various biodiversity. This course concentrates on the technical aspects, e.g. skills on usage of remote sensing and GIS software like ERDAS and ARCGIS. Most of the classes are carried out in laboratory that involves data and satellite images interpretation	2	3/1
38	SB33303	Biochemistry	This course is designed as an introduction to the organic structure of living systems. This course allows students to develop an understanding of the major classes of biochemical compounds found in living organisms and the metabolism of these compounds. The course design provides a fundamental understanding of protein structure, and the link between protein structure and its functions as an enzyme catalysts, in ion transport in energy metabolism and recognize DNA and RNA structure, DNA and RNA metabolism will be described. The chemical and physical nature of structures and functions within living cells is studied. This course also covers amino acids, the fundamentals of carbohydrates, protein structure, aerobic and anaerobic conditions and photosynthesis.	3	3/1
39	SB33502	Ecological Methodology	Research in ecology requires knowledge in biological aspect and also analytical skills in quantifying the parameter in biological system. The course combines the basic and practical knowledge of biology theories, and techniques and research methods in the measurement, estimation and monitoring in biological system. Among the issues that will be covered include sampling and survey methods, and estimation of population size for animals and plants; the species richness and diversity of species, and distribution pattern. Techniques in recording and measuring various type of environment variables will be shown. The advantages and limitation of some techniques or methods and other caveats of these techniques should be considered, in order to obtain the optimum measurement. Software like Species Richness and Diversity, Distance Sampling and Estimate will be used.	2	3/1



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40	SB33703	Policies And Legislations Of Biodiversity Conservation	This subject encompasses state, federal and international policies and legislations in relation to conservation of biodiversity and natural environment. These existing legislations include ordinances, enactments and acts and rules and regulations by relevant local authorities. This course will explain the definition, respective government agencies, enforcement, licensing and permits, dos and don'ts, fines and penalties. International policy and legislation like CITES, etc are also integral components. Students are expected to understand the government and international policies and legislations so that they won't go against the rules and regulations as stipulated in the by-laws	3	3/1
41	SB23803	Aquatic Ecology	This course introduces to biological, chemical and physical features of freshwater rivers and lakes and relates them to general ecological concepts. There are two primary ways of monitoring ecological state of aquatic ecosystems: physico-chemical water quality analysis and analysis of biological components. This course will concentrate both on physico-chemical and biotic composition of freshwater rivers and lakes. Another focus of the course is the research methodologies in aquatic ecology. The laboratory work is designed to complement and expand on topics discussed in lectures while providing students with hands-on experience in sampling, analysing, and interpretation of freshwater aquatic ecosystems.	3	3/1
42	SB34102	Ehtnobiology	This course will cover the aspects of natural resources by the ethnic groups worldwide in general. The focus will be on the ethnic groups in Malaysia, specifically in Sabah. Students will learn the existence of various ethnic groups, culture, traditional beliefs and practices, and the connection of natural resources. Students will be given the basic knowledge on ethnobiology with the emphasis on ethnobotany and ethno zoology discipline. This course will also introduce the basic of anthropology and focus to the relevant scientific aspects. Traditional practices that are relevant to conservation biology and environment learned from the ethnic groups will be discussed. This course requires lectures and fieldwork to selected location.	2	3/1
43	SB34302	Primate Conservation	This course combines the theoretical and practical teachings and emphasis on hands-on experience for students. The first part of the course will be concentrating on the foundation of primatology, primates diversity, ecology, behavior and conservation. In the second part of the course, students will be exposed to the research methodology on primates. Sampling and data analysis will be covered during practical besides preparation of a proposal with primate conservation as its theme. Students will be evaluated with continuous assessments, proposal presentation and final exam.	2	3/1



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44	SB34502	Instrumental Methods	The course is designed to discuss the basic theory, methodology and maintenance of instruments used by biologist/chemists. The instruments including centrifuge, pH meter, microscope, spectrophotometer, chromatography, electrophoresis, nuclear magnetic resonance and infrared spectra. Hands on practical and demonstrations of the instruments will also be conducted in lab sessions.	2	3/1
45	SB43002	Sustainable Environmental Development	Environmental sustainable development strongly relates to the capability in natural resource management to gain ecological, economic and social benefits sustainably. Via a highly multidisciplinary approach, this course introduces the concept of sustainable development at the local and international levels. The course explains on management trends that are being practiced in environmental development. The course scrutinizes different levels of development in relation to sustainability by using case studies. Undergraduates who have gone through the course are expected to be able to master good comprehension on various issues and challenges related to environmental sustainable development.	2	4/1
46	SB43503	Wildlife Management	A course designed to introduce students to wildlife ecology and principles of wildlife management. A background of ecology, population biology and elementary statistics is essential to fully understand the topics discussed in this course. Although much information on wildlife management principles is required from research carried out elsewhere, wildlife management techniques as practiced in southeast Asia will be discussed in greater details.	3	4/1
47	SB43703	Genetic For Conservation	This course is a combination of ecological biology, molecular biology, population genetics, mathematical methods and evolutionary systematics. It is both basic and applied sciences. Students will be taught basic knowledge of genetic relationships of organisms and management techniques that involves conservation of biological diversity in related species. The studied organisms are from endangered population or those facing extinction. Factors that cause extinction of population will be discussed from population, demography, loss of gene variation, inbreeding, degradation of population migration, stress increment and community behavior and metapopulation structure. The usage of molecular variation as the basic of naming and preference of targeted taxa and a few strategic results in maximization of genetic variants in conserved population is analyzed.	3	4/1
48	SB43902	Selected Topics In Conservation Biology	This course aims to give holistic understanding on the importance of conservation and the cause to problems. Active participations and discussions in finding the solution and overcome problems will build the leadership quality of students. Invited lecturers and speakers from various backgrounds will discuss issues and challenges in the field of conservation biology. This course will also promote volunteering spirit among the students.	2	4/1



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49	SB44102	Canopy Biology	The canopy of tropical rainforest at about 70m above ground level is the richest biological varieties of sub-ecosystem in the world. The canopy of tropical rainforest is least studied due to the difficulties to assess the area. The role, functions and importance of canopy has not been explored and known fully. This course will give introduction to the sub-ecosystem of the canopy of tropical rainforest from the aspect of research history, variation of organisms including insects, vertebrates and plants. The importance of the sections of forest canopy from the ecosystem services, ecological processes occurrence like flowering and herbivores, and influences of canopy on the micro climate and global weather will be discussed. A few methods to assess and study the canopy of tropical rainforest including climbing method using twin rope and remote sensing will be shown.	2	4/1
50	SB44302	Protected Areas Management	Protected areas are viewed as critical to the survival of species and ecosystems. This course will introduce students to the science and management of protected areas on land. It covers topics such as the international and national policies related to protected areas, and approaches in management of protected areas. It will also show how important protected areas are for the livelihood of the local communities. Case studies of local organisms such as proboscis monkey and Sumatran rhinoceros will be discussed to give the students insights of local issues in protected areas.	2	4/1
51	SQ12103	Principles of aquaculture	This course is designed to provide a basic account of the various types of aquaculture systems and of the concepts of sustainable aquaculture management. Topics that are given special emphasis include aims and scope of aquaculture practices, biology principles underlying the aquaculture development, desired qualities of cultivated organisms, and socio-economic importance of aquaculture for Malaysia.	3	1/1
52	SQ12303	Biology of aquaculture animals-I (Fish)	This course is intended to provide an account of some aspects of the biology of fish. Students will learn outline classification, diversity, structural organization, essential life functions and an introduction to the various links in the life cycle of fishes. Methods of determining food and feeding habits, age, growth and breeding will be given special emphasis. Application of biological data in aquaculture of the target animals will be elaborated. Practical work will be carried out in the laboratory, aquarium, hatchery and in the field.	3	1/1
53	SQ22103	Hatchery system, design and management	This course discusses the design and management of fish hatcheries, including the equipment and accessories needed for their effective operation. Topics of discussion also include water supply, water storage and distribution, water recirculation and reconditioning facilities; operation and maintenance of hatcheries; brood stock management, spawning and seed production; handling, feeding and rearing of larvae and juveniles and harvesting.	3	2/1



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54	SQ22303	Broodstock management and seed production	This course discusses the broodstock management and seed production of several commercially important aquatic organisms in Malaysia and the Southeast Asia region. Selected species are: tilapia (<i>Oreochromis niloticus</i>), patin (<i>Clarias gariepinus</i>), African catfish, (<i>Pangasius hypophthalmus</i>) seabass (<i>Lates calcarifer</i>), groupers, tiger prawn, giant freshwater prawn, crabs, lobsters, abalones, oysters and sea cucumber.	3	2/1
55	SQ22503	Grow-out system and management	This course will provide understanding about farming system with various system and techniques. Topic selected for discussion include freshwater fish farming, marine fish farming, prawn farming, feedings for aquaculture farm and products of aquaculture farms. Detail knowledge on site selection, topography, design and construction of farm. Environmental criteria and production efficiency of aquaculture farm will be explained. Important facilities in fish farm such as aeration system, water re-circulation and management will also be covered in detail.	3	2/1
56	SQ32103	Seaweed Culture	This course aims to introduce economically important seaweed species and their biology; to highlight the abundance of seaweed species in Malaysia and its potentials; to teach some basic culture techniques, and an understanding of the challenges and problems in the seaweed industry. Lectures will focus on the fundamentals of phycology and introduction of varieties of economically important seaweed species that are being cultivated around the world. An in-depth preview of seaweed diversity in Malaysia with emphasis on the availability of seaweed resources as a lucrative seaweed-based industry will be given. Selected topics on seaweed variety, distribution and the biological features of local seaweeds; seaweed culture practices and state-of-the-art protoplast generation techniques; harvesting, seaweed diseases and post-harvest practices; extraction of commercially important carrageenan and the problems faced in this industry will be discussed.	3	3/1
57	SQ32303	Crustacean Culture	This course provides comprehensive coverage on several aquaculture economically important crustacean species including marine shrimp, freshwater prawn and mangrove crab. Topics cover for discussion and practical training are the biology and identification of aquaculture crustacean species, crustacean aquaculture management and methods, environmental requirements for aquaculture of crustacean, breeding and seed production of crustacean in hatchery, nursery and grow-out system, health care and disease, nutrition, and elements of sustainable culture management.	3	3/1

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58	SQ32503	Fish Health and Diseases	This course discusses the types of common diseases affecting aquaculture animals including fish and shrimp. It focuses on non-infectious diseases (environmental, nutritional and genetic) and infectious diseases such as caused by viruses, bacteria, fungi and parasites. It describes the clinical signs of each disease, mode of infection and life cycle of the pathogen.	3	3/1



			It covers prevention and treatment options that are required for a holistic fish health and disease management.		
59	SQ42303	Fish Post-Harvest and Processing	The course is designed to introduce the need for post-harvest handling of fish/aquaculture products; to highlight parameters that contribute to the food spoilage and devaluation of food products; and to emphasize proper measures that need to be taken to avoid food spoilage. Post-harvest handling and processing of fish, with emphasis to aquaculture products will be discussed in this course. Basic concepts pertaining to moisture, water activity and spoilage will be given weight. Main topics will be factors contributing to food spoilage, damage control, salting, dehydration, antibiotic treatment, deep-freezing, cold and heat sterilization, canning and quality control. Basic principles on the bacterial and fungal activities on the food and principles of controlling them will be taught. On the whole, this course will delve upon the processes and utilization of marine food resources via scientific methods	3	4/1
60	SQ42503	Fisheries Stock Enhancement and Sea Ranching	This course is designed to include discussion of concepts, objectives, methods and practices of stock enhancement and sea ranching. Topics that will receive special attention are: responsible and effective stock enhancement strategies, modern approaches to restoring depleted marine fish populations and augmenting fisheries production, determining the role of habitat improvement and artificial habitat structures in population enhancement, and measuring effectiveness of sea ranching as a tool of sustainable fisheries management. Constraints and opportunities for different types of sea ranching and methods economic evaluation for different species of marine animals will also be elaborated.	3	4/1



LIST OF COURSES OFFERED FOR EXCHANGE STUDENTS PROGRAMME (INBOUND MOBILITY)

FACULTY SUSTAINABLE AGRICULTURE

No	Course Code	Course Name	Course Description	Credit Hour	Year/Semester Offered
1	RT10402	Introduction To Agriculture	The course introduces students to the importance of agriculture to mankind, history and development of agriculture, current issues and challenges in agriculture ranging from environment, food security and needs, food safety, to biotechnology and genetically modified organisms. Shifts in Malaysian agriculture policies, objectives and strategies over several decades since independence will be highlighted. Sustainable agriculture and management practices which are widely accepted and adopted by farmers and nations around the world will be introduced. Prospects and opportunities in the agriculture sector will also be discussed.	2	1/1
2	RT10303	Agricultural Chemistry	This is an introductory course specifically on topics needed for an understanding of the basic chemistry of agriculture. Topics covered will include basic atomic, physical and organic chemistry, mole concept, solutions, states of matter, acids-bases and salts, chemical reactions, water and air chemistry, surface and colloidal chemistry, and agrochemicals (fertilizers and pesticides). Students will be made aware of the use of isotopes and nuclear techniques in agriculture.	3	1/1
3	RT10503	Agricultural Ecology	This course will introduce students to the basics and principles of ecology implemented in agriculture systems. The important elements in agricultural ecology include interactions between weather, soils, energy, water, plants and biological populations. Application of the concepts and knowledge in agricultural ecology enables students to practice sustainable agriculture.	3	1/1



No	Course Code	Course Name	Course Description	Credit Hour	Year/Semester Offered
4	RT10203	Genetics	<p>This course introduces the basic principles of inheritance in plant and animal organisms. Discussion encompasses the</p> <p>concepts of gene and chromosome, mitosis and meiosis, Mendelian laws of inheritance, factors that contribute to modification of Mendelian patterns, molecular genetics (DNA structure, replication, gene expression and gene mutation) and population genetics. The role of genetics in agriculture will be shown in related topics.</p>	3	1/2
5	RT10403	Soil Science	<p>This is a fundamental soil science course which introduces students to the basic physical, chemical, biological and morphological properties of soils and functions in relation to agriculture. Emphasis will be placed in the context of tropical conditions with particular reference to Malaysian soils. Soils will be perceived as a product of various processes acting over time on parent materials. The wide variety of soils resulting from the soil-forming processes and their classification using the standard USDA and local (Malaysian) soil classification systems will be highlighted. The importance of appropriate</p> <p>management and land use practices to ensure conservation and sustainability for agriculture will be discussed.</p>	3	1/2
6	RT20101	Fieldwork	<p>This is an on and off campus practical training course to familiarise students with basic tools, skills and knowledge in crop and livestock farming, and landscaping, nursery and field planting techniques will be introduced. Cultural practices such as nursery bed preparation, planting, potting, preparation of soil or planting medium, weeding, fertilizing, watering, pruning, thinning, and composting as well as the handling and care of livestock in pen houses, free range and paddocks will be done.</p>	1	2/3
7	RT20303	Agricultural Biotechnology	<p>This course will introduce students to the application of recombinant DNA technology to agriculture. Methods of introducing foreign DNA into plant and animal cells and generation of</p>	3	2/3



			stable transformed plants and animals will be studied. Students consider specific examples of the use of transgenic plants and animals which are resistant to pathogens and tolerant to specific herbicides. Since recombinant agricultural products are released into the environment or consumed as foods, students will be familiarised with environmental safety issues.		
8	RT20102	Organic Farming	This is an introductory course to the principles of soil fertility, crop and livestock management by organic methods in contrast to conventional chemical methods of farming. Students will gain an understanding of the role of organic agriculture in society in relation to environmental, social and economic sustainability. This course will cover topics such as meeting crop nutrition needs using organic materials, on-farm compost production, the use of cover crops, organic methods of weed, pest and disease control, organic livestock production, organic certification, and the marketing of organic farm products.	2	3/3
9	RT20203	Agricultural Microbiology	This course offers the basic knowledge on microbes and their roles in ecosystems. The early parts of the lecture are related to morphology and structures, microbial diversity and growth. Microbial genetics and the manipulation of microbial plasmid in genetic engineering for enhancement of crop and animal production are discussed. Their functions related to the soil fertility and crops productivity is discussed. Roles of microbes in biogeochemical cycles, environments, food production and bioremediation are discussed.	3	2/4

No	Course Code	Course Name	Course Description	Credit Hour	Year/Semester Offered
10	RT20402	Biometry	This course focuses on statistical analysis and its application in agriculture. The course will show how statistics are being used to evaluate the results of agricultural research. The course will cover both descriptive statistics, which summarize the data obtained in research, and inferential statistics, which are used to decide whether the results of research confirm the researcher's	2	2/4



			hypotheses. Specific topics to be covered include sampling and estimation, hypothesis testing, t-tests, analysis of variance, correlation, regression analysis, and non-parametric methods of statistical analysis.		
11	RT20603	Introduction To Agricultural Engineering	Students will be acquainted with a wide range of fundamental engineering concepts, principles and applications in agriculture (pre-harvest to post-harvest) with a strong emphasis on problem solving. Aspects of mechanics, hydraulics and electronics will be covered. The principles and applications of pumps and the internal combustion engine will be discussed.	3	2/4
12	RT30301	Agro-Intepreneurship Practice 1	This is a farm practical course dealing with the field practices in crop production, horticulture and livestock production. Students will have the opportunity to get hands on experience of the day to day activities and real problems and challenges that are encountered in the farm and field conditions. Student will work in groups to plan and execute an agro-enterprise until marketing.	1	3/5
13	RT30302	Experimental Design And Analysis	Students will learn concepts, principles and methods/steps in setting up an agricultural experiment. Students will also learn statistical analysis based on the experimental design used. The experimental designs included are Completely Randomized, Randomized Complete Block, Latin Square and Split Plot Designs as well as factorial experiments. Suitable ways and methods of analyzing data for these experimental designs will also be taught.	2	3/5
14	RT30103	Agricultural Extension	This course teaches students on the concepts, philosophy and methodology of agricultural extension. They would also be exposed to the scope of agricultural extension. They would also undertake practical extension training/fieldwork in a number of communities and report their personal	3	3/6



			experiences during those training.		
15	RT30202	Scientific Writing And Communication	This course provides students the opportunity to acquire the necessary skills in scientific writing – writing a research proposal, a dissertation or a journal article in accordance with the specified format.	2	3/5



No	Course Code	Course Nam	Course Description	Credit Hour	Year/Semester Offered
16	RT30401	Agro-Entrepreneursihp Practice 2	<p>This is a farm practical course dealing with the field practices in crop production, horticulture and livestock production.</p> <p>Students will have the opportunity to get hands on experience of the day to day activities and real problems and challenges that are encountered in the farm and field conditions. Student will work in groups to plan and execute an agro-enterprise until marketing.</p>		3/6
17	RT40103	Precision Farming	<p>This course intends to introduce students to the concepts, technologies and applications involved in precision agriculture. This entails the theory and use of some high-technology equipment for assessing field conditions and applying inputs such as seeds, chemicals, fertilizers and pest & disease management - to name a few. Students will also be exposed to precision technologies in Livestock production such as in feeding, reproduction and health management. The course will also cover topics such as measuring parameters through various sampling procedures, nutrient, yield and other mapping. The study of</p> <p>geo-statistics, spatial patterns, the use of GPS, DGPS, GIS, Remote sensing and aerial photography for soil and crop mapping. The use of ICT as a tool in precision farming will be covered. The use of enabling hardware and software in precision</p> <p>farming applications will be some of the hands-on experience in which students will participate.</p>		4/7

No	Course Code	Course Name	Course Description	Credit Hour	Year/Semester Offered
18	RT40303	Agricultural Economics And Agribusiness	<p>This course discusses the basic agricultural economic principles to assist the students to make decision how to choose the combination of inputs and outputs that will generate the most profit to their businesses. This course also</p>	3	4/7



			<p>will teach the</p> <p>students how to manage an agribusiness, and explain how to start-up, run and manage their own agribusiness specifically in</p> <p>financial management. Additionally, the students will be taught and guided to prepare a business plan. It also includes chapters on the basic principles of agriculture marketing, investment analysis, and economic activity and analysis.</p>		
19	RT40402	Issues And Current Developments In Agriculture	<p>This is a seminar course on current global, regional or local issues and development in agriculture which will be presented by policy makers, representatives of Government implementing agencies, industries, financial institutions as well as from</p> <p>experts, renowned researchers and academics.</p>	2	4/7
20	RC10102	Plant Nutrition	<p>An introductory course concerning a fundamental understanding of soil fertility, plant nutrition and soil nutrient management. This will include the roles and functions of nutrients to plants, deficiency & toxicity symptoms, nutrient availability and uptake by plants from the environment (aerial, soil and soil-less). Types of chemical/inorganic and organic fertilizers, an appreciation of the importance of good fertilizer management in various soils and plant production systems and how soil pH influences nutrient uptake will be discussed. Students will learn how to calculate fertilizer application amounts for any given crop based</p> <p>on fertilizer recommendation rates.</p>	2	1/1
21	RH10203	Plant Physiology	<p>Plant physiology is an examination of plant function ranging in complexity from individual cells up to the whole plant. As relatively immobile organisms, plants must adapt to the prevailing environment and consequently have unique mechanisms to deal with non-ideal growing conditions. Both normal growth and development as well as how the plant responds and adapts</p> <p>to adverse conditions are major themes in plant physiology research. This course will focus on the major physiological processes occurring in</p>	3	1/2



			plants grown under ideal conditions as well touch on the physiology of stress-adaptation.		
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No	Course Code	Course Name	Course Description	Credit Hour	Year/Semester Offered
22	RH20103	Plant Breeding	This course emphasizes the basic principles and concepts of genetic improvement of agricultural crops through application of basic qualitative and quantitative genetic principles. Different plant breeding methodologies relative to the mode of reproduction of plants will be discussed. Application of tools such as mutation, wide hybridization, tissue culture, genetic engineering and molecular markers, in the breeding of plants will also be discussed.	3	2/3
23	RC20203	Weed Science	This course is a study of weeds and their control. Principles including weed plant classification, weed biology and ecology, and plant and herbicide chemistry will be taught. Practices which prevent, control and eliminate weeds will be discussed. Herbicide formulations and safe herbicide use will be taught.	3	2/4
24	RH20303	Plant Propagation And Nursery Management	This course stresses on the principles and techniques of propagation of agricultural plants, using seeds (sexual) and vegetative (asexual) plant parts. Students will also be introduced to in vitro micro-propagation for mass plant propagation, including media composition and preparation. General nursery practices and maintenance are highlighted.	3	2/3
25	RC20403	Crop Pest Management	This course will emphasize various techniques for management of all classes of crop pests. The techniques of pest management involve cultural control, physical, chemical, genetics, host-plant resistance, insect resistance, and others. An application of integrated approaches using least destructive, economically and environmental friendly methods, and protection of non-target organisms will also be taught. Toxicology and classification of pesticides, chemical residue risks to land and aquatic environments, international quarantine system and local rules and regulations of quarantine system for controlling	3	2/4



			<p>the spread of plant pests and diseases will also be taught. Identification and symptoms of injury of major species</p> <p>of pests such as insects, mammalia, gastropoda and others, which damage major agriculture crops and control measures will be introduced in this course.</p>		
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No	Course Code	Course Name	Course Description	Credit Hour	Year/Semester Offered
26	RC20803	Pasture And Fodder Management	This course covers the botanical and agronomic characteristics of improved tropical pasture grass and legume species and their management in grazing and cut and carry systems for ruminant livestock production.	3	2/4
27	RH30103	Farm Mechanization	This course introduces the principles behind the design and operation of common types of farm machinery and mechanisms; familiarizes students with agricultural mechanization policy and strategy and its implications on agricultural development; teaches students financial costing and accounting of agricultural machinery and analyses factors that affect economic operation for effective management decisions.	3	3/5
28	RC30303	Seed Technology	<p>Seed development after fertilisation, seed structures and dispersal are taught. The physiology of seed germination, viability tests and seedling vigour are highlighted. Categories of seeds for human consumption, livestock feeds and as planting materials, seed production, collection, cleaning, processing, and storage (of orthodox and recalcitrant seeds) and cryo-preservation are included. Seed testing laboratories and protocol for seed purity and standards set by A.O.S.A. are</p> <p>included. Controlled pollination in the production of breeder seeds is also taught. Seed certification for commercial seed producers and the network in seed trade are integral parts of the course.</p>	3	3/5
29	RC30402	Cereal Crops	This course will cover the management practices and infrastructure requirements related to the cultivation of major cereal		3/6



			crops such as rice, maize, sorghum and others. Post-harvest handling, storage and processing of products will be mentioned. Utilisation of crop products for human consumption, snack food industries and industrial applications are taught.		
30	RC30503	Plantation Crops	<p>This course will cover the management of plantation crops such as rubber, cocoa, coconut, sugarcane, coffee, tea, pepper</p> <p>and others. Discussion includes basic planting practices, crop management and processing of produce. An understanding of</p> <p>the botanical characteristics, ecology, propagation and nursery techniques, land management, estate infrastructure and</p> <p>maintenance will be emphasized.</p>		3/5

No	Course Code	Course Name	Course Description	Credit Hour	Year/Semester Offered
31	RC30602	Root Crops	This course emphasizes the classification, ecology and methods of propagation and planting of root crops such as tapioca, sweet potatoes, potatoes, taro, yams and others. The management, arvesting, and processing of tubers into starch are discussed. Utilisation of tubers and starch for food, confectionery, snacks and industrial applications are highlighted.	2	3/6
32	RC30703	Plant Pathology	This course introduces to students the fundamental concepts of plant pathology. At the early week of semester the modes of action of abiotic and biotic agents to cause diseases to plants are discussed. Genetics, physiological and biochemical aspects of pathogens and host plant interactions are discussed. At the later stage of this course, non-chemical and chemical controls of plant diseases are discussed.	3	3/5
33	RC30802	Oil Palm Management	In this course students will be taught about the oil palm industry in Malaysia, the botany of the plant and the characteristics of different clones. Nursery management, land clearing, field operations, infrastructure development and	2	3/1



			planting techniques will be discussed. Aspects of hand pollination to produce Tenera clonal seeds (Durax Pisifera crosses) and production of pre-germinated seeds are taught. Harvesting of fresh fruit bunches (FFB), bunch analysis, oil extraction and utilisation of Crude Palm Oil (CPO), Crude Palm Kernel Oil (CPKO) and by-products in related industries are highlighted.		
34	RC40202	Food Processing And Preservation	This course concerns the principles and methods of processing and preservation used in the food industry. Technologies involving heating, chilling, freezing, dehydration, salt, sugar, acids, chemical preservatives, ionizing radiations and novel methods; processing methods such as refrigeration, evaporation, fermentation, extrusion, chemical and physical separation, and particle size reduction will be taught.	2	4/7

No	Course Code	Course Name	Course Description	Credit Hour	Year/Semester Offered
35	RH40302	Post-Harvest Technology	The course will highlight topics related to the causes, principles and practices that result in post-harvest losses and appropriate methods to reduce these losses. The biophysical and biochemical changes in agricultural produce and factors that influence the quality of produce during storage will be discussed.	2	4/7
36	RC30302	Farm Irrigation Systems	This course deals with the principles and practices of irrigation science and management for efficient use of water; methods and systems of irrigation application. The course will provide the skills necessary for the design and management of effective and efficient on farm irrigation systems. The soil-plant -water relations, crop water requirements and the removal of surplus water from farm fields (Drainage) will also be covered. Emphasis will be placed on automated systems and components.	2	3/6
37	RC30502	Advance Crop Science	This is an advanced level course which draws on courses done earlier in your program at the plants community scale It requires evaluation, integration and application of principles of crop	2	3/5@6



			production to develop understanding of sustainable crop production systems. The application of physiology and agronomy in crop production and the influences of environment on crop growth, and biological and economic yield will be emphasized. The use of crop growth simulation models will be examined.		
38	RC30702	Soil Fertility Management	<p>This course will cover the factors influencing soil fertility, the principles underlying sustainable soil fertility management for agricultural production and environmental guardianship, and the integrated perspectives related to water, nutrients, and organisms in soil. The processes influencing soil health and management applications are discussed from the perspective of</p> <p>major "problem" soil types in Malaysia. (Peat, acid sulphate, BRIS, coastal, sloping & highly weathered soils). Soil conservation methods with particular reference to soil erosion will be covered. Interpretation of analytical data and practical recommendations relating the maintenance and improvement of soil fertility will be covered.</p>	2	3/5@6

No	Course Code	Course Name	Course Description	Credit Hour	Year/Semester Offered
39	RC30902	Agricultural Entomology	<p>This course will familiarize the students with skills and knowledge on agricultural entomology. Learning of insect life cycle, ecology, reproductive biology and morphological structure will provide training to students on characteristic of major agricultural crop pests in Malaysia. Classification and identification using taxonomic guide key enable students to identify</p> <p>insect up to the level of species. A basic learning of entomology will provide an essential tool of knowledge before a proper</p> <p>control and management of insect pest can be carried out. This course will also expose students to some selected agricultural plant insect pests such as coconut, oil palm, rice, vegetables, fruits and others. An appropriate trapping methods using light traps, baited traps</p>	2	3/5



			etc. for surveillance and sampling of insect will also be introduced to students.		
40	RC31002	Soilless Culture	<p>This course will provide students with good background of the principles, practices, techniques, infrastructures and technologies of growing plants without soil. It covers species in several important systems such as water culture, sand culture, gravel culture, aeroponics, tube culture, nutriculture, etc. Management of soilless culture production system will also be</p> <p>discussed include use of organic, inorganic production and vertical farming.</p>	2	3/6
41	RC31102	Herbs And Spices Crops	<p>In this course, graduates will learn the progress of industry, identification and classification, propagation and cultivation,</p> <p>harvesting, and post harvest technique of herbs and spices in Malaysia. They will also learn the techniques on cultivation, production, and marketing of herbs and spices for commercial purposes.</p>	2	3/6
42	RC31202	Legumes And Miscellaneous Crops	<p>The botany of grain legumes (groundnut, soybean, etc) and miscellaneous crops (kenaf, jatropha etc) are outlined. The importance of legumes in nitrogen fixation; the grain for food, and animal feed are emphasized. Discussions include planting practices and crop maintenance, harvesting and storage of the produce. Intercropping of legumes with other food crops and the use of legume plant residue for green manure are included. Utilization of legume grains and other products are stressed.</p>	2	3/6

No	Course Code	Course Name	Course Description	Credit Hour	Year/Semester Offered
43	RC31402	Water Resource Management	<p>This course will provide a broad overview on water resources, quality, uses and management in relation to agriculture. The</p> <p>hydrologic cycle, biophysical principles and the effects of changing climate/environment factors on water resources and</p> <p>sustainable practices in water resource use in</p>	2	3/5@6



			<p>agriculture will be covered. Current issues regarding water use and agriculture will be discussed.</p>		
44	RC31502	Plant Systematics	<p>This course introduces students to conventional taxonomy, the description, identification, nomenclature, and classification of plants. They will be guided to understand the reconstruction of phylogeny, or evolutionary history, of plant life. The course is divided into four parts: introduction to systematic, evolution and diversity of plants, systematic evidence and descriptive terminology, and resources in plant systematic. Emphasis is given on the application of systematic approach to identify and select plants, from the pool of genetically related agricultural and horticultural plants, or hybrids, for further trait and quality enhancement.</p>	2	3/5@6

No	Course Code	Course Name	Course Description	Credit Hour	Year/Semester Offered
45	RH30502	Plant Molecular Biology	<p>This course will touch on the function and structure of the transposable elements and gene tagging, plant and organ development, genome chloroplasts, and lipid biosynthesis. It will also introduce the available and recent techniques used for isolation of proteins and nucleic acids, analysis of gene expression, DNA manipulation and transformation, and transfection and regeneration. These techniques are commonly applied in the agricultural and plant sciences, especially for crop improvement, genetic engineering, gene expression and its manipulation.</p>	2	3/5
46	RH30802	Plant Tissue Culture	<p>A study of the theory, application, and techniques useful for propagating tissues in the research laboratory. Topics selected for study include sterile techniques, cell nutrition, media preparation, establishment and maintenance of explant, callus and suspension cultures and growth measurement of</p>	2	3/5



			cell, tissue, and organ culture.		
47	RH30902	Controlled Environment Agriculture	In this course, students will learn about the principles, methods, and techniques related to the production of crops under protected/greenhouse conditions. The measurements and control of environmental factors affecting plant growth and development under controlled environment will be studied. Factors such as light intensity, light quality, temperatures, relative humidity, carbon dioxide, water, air current will be covered. Cultural practices for plant protection, nutrient and water delivery systems and control systems will be highlighted. Students will learn application of instrumentation in greenhouses and basic technical aspects of greenhouse design and construction. Hands-on experience will be a major aspect of this course.	2	3/5
48	RH31302	Mushroom Technology	This is an applied course. Students will initially be introduced to the introduction, history, scope of edible mushroom cultivation. Types of edible mushroom and certain mushroom species will be used as case study such as <i>Calocybe indica</i> , <i>Volvariella Volvacea</i> , <i>Pleurotus sp.</i> , <i>Agaricus bisporus</i> , <i>Shiitake</i> . Lab practicals involve preparation of pure culture, preparation of media (potato dextrose agar and oatmeal agar media), sterilization, and preparation of test tube slants to store mother culture.	2	3/5

No	Course Code	Course Name	Course Description	Credit Hour	Year /Semester Offered
49	RH20603	Turf Management	In this course, graduates will learn the botany, physiology, ecology, pests, diseases, irrigation, nutrition, cultures, and weeds of turfgrasses. They will also learn the principles of managing turfgrass field. Through practical exercise, they will learn the identification, how to study the population biology, and to observe physiological stress symptoms of turfgrasses.	3	2/4
50	RH30302	Olericulture	This course provides knowledge on principles and practices in the production and management of highland and lowland vegetable crops. It covers species in several important families such as leguminosae, solaceae.	2	3/5



			<p>cucurbitaceae, cruciferae, malvaceae and liliaceae. Management factors to be discussed include use of organic and inorganic fertilizers, pest and disease control, weed control and fertigation. The use of hydroponics and net-houses for vegetable production will also be discussed.</p>		
51	RH30503	Landscape Horticulture	<p>This course highlights knowledge on softscape (trees, ornamental plants, monocots and grasses) and hardscape (paths, walls, patios, and water features) in landscaping. Emphasis is given on the application of principles and arts of landscaping</p> <p>to form a remarkable, pleasant, and living landscape.</p>	2	3/5
52	RH30602	Floriculture And Ornamentals	<p>This course discusses identification, usage, propagation, and cultural requirements of flowering plants, trees, shrubs, vines, and ground covers used in Malaysian landscapes. It also includes the physiological principles and commercial practices involved in the production of potted and bedded plants, as well as greenhouse production systems.</p>	2	3/6
53	RH30803	Landscape Design	<p>This course provides students with an understanding of design principles and practice of draughtsman ship skills and landscape construction. Theory and practice of landscape design, design themes with special application to commercial and</p> <p>public parks will be emphasized.</p>	3	3/6
54	RH31002	Pomology	<p>This course provides knowledge on aspects of fruit production from planting to harvesting with special emphasis on local fruits. Discussion will include collection and cultivation of potential indigenous fruit species for future propagation and breeding</p> <p>purposes.</p>	2	3/6



No	Course Code	Course Name	Course Description	Credit Hour	Year/Semester Offered
55	RH40302	Post – Harvest Technology	<p>The course will highlight topics related to the causes, principles and practices that result in post-harvest losses and appropriate methods to reduce these losses. The biophysical and biochemical changes in agricultural produce and factors</p> <p>that influence the quality of produce during storage will be discussed.</p>	2	4/7
56	RH40202	Garden Planning And Management	<p>The course exposes the students to the planning and management of a garden or park at a broader picture beyond the design and horticultural aspects of the garden or park. It will expose them to garden or park management on national and global perspectives.</p>	2	4/7
57	RH30702	Food Bioprocessing	<p>This course provides an overview of relations between biotechnology, its role and importance in bioprocess of the processing industry. A perspective of bioprocess advances in food production and processing will be discussed to develop and broaden</p> <p>students' knowledge in technological aspects and some related issues.</p>	2	4/5
58	RH31102	Landscape Construction And Management	<p>This course will introduce the concepts, principles and factors considered in building landscapes for public parks, recreation parks, golf gardens, natural parks and others. Students are exposed to the effective management of landscapes. Issues that will be discussed are emphasized, visitor's safety, environmental-friendly design and enhancement of existing vegetation and economics.</p>	2	3/6
59	RL10303	Intoduction To livestock Production	<p>This course discusses the scope of the livestock industry, career opportunities in animal sciences, principles of breeding, physiology and nutrition in relation to production, latest technologies in animal production with emphasis on recent livestock production systems, focusing on ways to increase productivity to provide affordable and sufficient livestock products. It also</p>	3	1/1



			covers topics on processing and marketing of animal products.		
60	RL10404	Animal Anatomy And Physiology	This course covers animal anatomy and physiology. Various systems such as the skeletal, muscular, respiratory, circulatory, nervous, endocrines, urinary and digestive systems will be discussed. The course includes the basic principles of physiology, preservation of tissues/ organs and will use tools such as anatomical models and preserved specimens.	4	1/2

No	Course Code	Course Name	Course Description	Credit Hour	Year/Semester Offered
61	RL20103	Animal Breeding	This course covers topics on genetics and statistical basis of animal improvement, selection of breeding stock, transmission of characteristics, sex determination, artificial insemination and estrous cycle. Male and female reproductive systems, reproductive failures, and biotechnology in livestock breeding will be discussed.	3	2/3
62	RL20403	Animal Behaviour And Welfare	This course covers various aspects of farm animal behaviour, their causes, and implications on management, production, health and welfare. It also discusses mechanisms, functions and evolution of behaviour as well as the importance of animal behaviour in conservation biology programs.	3	2/4
63	RL20603	Animal Nutrition	This course discusses the major functions of the basic nutrient groups, identification of feeds sources, nutritive requirements for maintenance, growth, reproduction, lactation and other body functions of farm animals. Commonly used feeds in the country will be emphasized, classification of feeds, formulation and balancing of rations and food additives will be taught.	3	2/3
64	RL21203	Poultry Production	This course covers all aspects of poultry husbandry practices including breeding, nutrition, management, housing, equipment, health and welfare. Emphasis will be on broiler and layer production.	3	2/4



65	RL30303	Monogastric Livestock Production	This course covers all aspects of swine husbandry practices including breeding, nutrition, management, housing, equipment, health and welfare. Emphasis will be on breeds, selection and judging, housing and equipment and marketing of swine. The course will also give some introduction to other monogastric farm animals such as horses and rabbit production.	3	3/5
66	RL30403	Beef And Dairy Production	This course includes important aspects of dairy and beef cattle management from birth to adult, various breeds of dairy and beef cattle, selection and judging dairy and beef cattle. It will include breeding, nutrition and management, milking management, dairy herd health, dairy housing & equipment, marketing of milk, beef cattle health management, beef cattle housing and equipment and marketing of beef.	3	3/6

No	Course Code	Course Name	Course Description	Credit Hour	Year/Semester Offered
67	RL30503	Livestock Feed Processing	This course deals with how agricultural products, by-products or wastes are processed into products that can be efficiently used by the ruminant and monogastric animals. Students will have exposure to different types of equipment and machinery used for processing, preservation of feeds and pellet making and also for analysis of feedstuff.	3	3/5
68	RL30603	Animal Diseases And Health Care	This course deals with common diseases (infectious and non-infectious) of livestock, aetiology, symptoms, effect on animal production, treatment and prevention. It will include topics such as proper handling and care of animals, hygiene, sanitation, vaccination schedule, immunization, and health monitoring.	3	3/6
69	RL31103	Small Ruminant Production	This course covers all aspects of small ruminant (sheep, goats and deer) husbandry practices, including breeding, nutrition, management, housing, equipment, health and welfare. Various breeds of sheep, goats and deer will be discussed. Emphasis will be given to ways of increasing the production of milk, meat and		3/5



			wool and the marketing of the products.		
70	RL40103	Handling And Processing Livestock Products	<p>This course will introduce students to the understanding of the ante- and post-mortem effects on livestock products quality. The topics include products collection, preservation, processing, marketing and safety, carcass evaluation, meat hygiene,</p> <p>meat selection, identification of standard cuts, meat curing and other meat preservation methods, meat structure and water holding capacity of meats. Post-harvest recontamination techniques such as chemical dehairing, hot water rinse, steam pasteurization, steam vacuum, chemical rinsing, lactoferrin and combined treatments—"Hurdle Technology" will be discussed. This course covers livestock by-products processing and utilization. The contents cover both edible and</p> <p>non-edible products of poultry and livestock. Medical and pharmaceutical processing and utilization, processing of leather,</p> <p>meat balls, woolens, slated eggs, animal feeds and others will be discussed.</p>		4/7

No	Course Code	Course Name	Course Description	Credit Hour	Year/Semester Offered
71	RL40703	Livestock Waste Management	This course covers various systems of collection, storage, treatment, transport and utilization of livestock and other agricultural organic wastes and wastewaters. Types of anaerobic digesters, gas utilization options, safety and management of digester and gas utilization equipment are discussed. The course will also discuss the physical, chemical and biological properties of livestock wastes, their impacts on the environment and measures to minimize the impact on the environment.	3	4/7
72	RL30602	Livestock Housing Systems	This course will mainly focus on the housing of dairy cattle in modern agriculture. It will cover all aspects of housing such as site selection, housing systems, loose housing, calf pens, housing for young stock and dry cows, maternity pens, bull pens, milking parlor and area for storage of manure. It will also include	2	3/5@6



			topics such as feeding area and bedding; heating and ventilation; and construction material. Housing of other livestock such as beef cattle; sheep and goats; poultry and swine will also be covered.		
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No	Course Code	Course Name	Course Description	Credit Hour	Year/Semester Offered
73	RL30702	Animal Environmental Physiology	<p>The course aims to study the effects of the environment on the physiology of mammals with emphasis on stress, behaviour, water and electrolyte balance and other adaptations to environmental variations. Attention will be placed on the problems</p> <p>associated with the improvement of livestock production in tropical climates. This course aims to develop an understanding of the environmental needs of animals including climate, social stress and shelter requirements and it should enable students to appreciate the use of animal behaviour as a measure of stress and welfare.</p>	2	3/6



LIST OF COURSES OFFERED FOR EXCHANGE STUDENTS PROGRAMME (INBOUND MOBILITY)

FACULTY OF FOOD SCIENCE AND NUTRITION

No	Course Code	Course Name	Course Description	Credit Hour	Year/Semester Offered
1	NT10102	Fundamentals of Food Science and Nutrition	The course will be focused on food requirement, function and source of nutrients in food, and quality and safety aspects of foods. The selected core subjects will be discussed in brief in other to give the students an overview on what is the field of food science/technology and nutrition all about.	2	1/2
2	NT10302	General Physics	A clear understanding of the basics of physics, i.e. the study of physical quantities, theories and calculations in translational and rotational motions, types and concepts in energy. This course will expose some background on the behavior of fluids. It will also include sections in thermal physics as well as vibration and wave.	2	1/2
3	NT10902	Organic Chemistry	This course will discuss the principles of organic chemistry and the chemical reactions found in many applications including food systems. This course includes the naming, classification, structure, use and reactions of each class/group of natural and synthetic organic compounds. The mechanisms of reactions will be given attention.	2	1/2
4	NT11202	Calculus	This course contains basic concepts of calculus as introduction to the mathematical functions which must be understood by students before taking more advance subjects such as Advance Calculus. This course also covers topics such as: limits, continuity, differentiation, integration and the applications of differentiation and integration.	2	2/2
5	NT10802	Biochemistry	The course discusses the biomolecules and their chemistries in reactions that facilitate the processes in living/biological systems. The syllabus includes amino acids, proteins, enzymes, carbohydrates, and lipids. The structures, mechanisms, kinetics, and control of these components are discussed. The energy consumption/generation and electron transfer in metabolisms such as the glycolytic pathway, the citric acid cycle, and the oxidative phosphorylation are also discussed.	2	2/2
6	NT10402	Analytical Chemistry	Analytical chemistry is the branch of chemistry that deals with the measurement of chemical samples, both qualitative and quantitative. Analytical chemistry plays an important role in many aspects of chemistry, for example, medicinal, environmental, forensic, and manufacturing. In food, analytical chemistry finds many applications, for example, in the analyses for the essential nutrients, chemical composition, level of deterioration or contamination, and authenticity.	2	2/2



			Undoubtedly, analytical chemistry forms an important part of the competency that food scientists and technologists ought to develop.		
7	NT10602	General Microbiology	This course covers basic principles of microbiology and provides an introduction to the diversity, physiology, morphology, genetics, ecology, applications and pathogenicity of microbes.	2	2/2
8	NT20703	Food Analysis & Instrumentation	This course introduces students to the importance of food analysis as chemical compositions of foods are used to determine the nutritive value, functional characteristics & acceptability of the food products. Students will be taught on preparation of chemicals & instruments to conduct the analyses. Analytical errors including those arising from impurity of chemicals, instruments & methods used will also be discussed. Students will learn how to report their laboratory results, findings & calculations. Proximate analyses, as well as the theory & suitable methods to determine moisture, ash, protein, lipid, carbohydrate, mineral and vitamin contents will also be explained. Students will also be exposed to specific instruments including AAS, GC, HPLC, etc., to analyse specific or basic components that make up our major food components.	3	1/2
9	NT20903	Food Chemistry & Biochemistry	This course covers introduction to the major food components such as water, carbohydrate, lipid, protein and other minor components, namely vitamins and mineral. Students will be exposed to the chemistry aspect, classification, characteristics and functional properties of each of the components. Fundamental knowledge of enzyme and food pigments will be taught. Basic biochemistry reactions and metabolisms relate to the major food components will also be discussed.	3	1/2
10	NT21103	Statistic	This course discusses basic statistical concepts including parametric and non-parametric tests. The practical component includes demonstrations and tutorials on statistical analyses using software. The software used is SPSS, which is one of the common statistical software used in academic research and industries. Students will be exposed to the use of syntax in statistical analyses.	3	1/2
11	NT21303	Physical Properties of Food	A course discuss on those properties of foods that lend themselves to description and quantification by physical means. It is an introduction course exposing students to various physical properties of food, including the thermal, surface, optical, mechanical (rheological), electrical and geometrical properties. The definitions, theory and principles, methods of determination, as well as effects on food products are also discussed under relevant topics. This course also provides fundamental knowledge required in understanding advance courses offered in 2nd and 3rd year, such as Unit Operation in Food Processing and Food Engineering.	3	1/2
12	NT20803	Post-Harvest Handling Technology	The course teaches subjects related to the causes, principles and practices that result in food losses and appropriate methods to reduce postharvest losses in	3	2/2



			both the developed and developing countries in terms of technological usage. The structure, composition and biophysical and biochemical changes in fruits and vegetables will be discussed. Factors that influence the quality of fruit and vegetable during storage will also be discussed. This course will also provide exposure to students on the technology of postharvest handling of cereals, koko, legumes, dairy products, meat, chicken and fish.		
13	NT20203	Food Microbiology	The course discusses the basic principles of food microbiology, which include scope of study, classification of microorganisms, existing of microflora in various foods and their source of contamination. Characteristic and factors affecting the growth of microorganism that lead to either food spoilage or food poisoning are also discussed. An understanding to these factors is helpful in designing methods to control or stimulate their growth. Students have the opportunity to learn a wide variety of microbiological methods normally used in quality control and safety evaluation of foods. The control of microorganisms especially foodborne pathogens by various food preservation techniques and processing are also being highlighted. Apart from its detrimentally effects to food and human health, many of these microorganisms are used in the production of food and food ingredients. A series of laboratory exercises are designed to provide student with the opportunity to develop skills in the isolation, identification and enumeration of the major groups of microorganisms associated with food and food products	3	2/2
14	NT30903	Food Processing & Preservation	This course will explore and expose the students to the basic and applied methods of food processing and preservation. It describes the physical, chemical, and microbiological basis for each method of preservation. Particular emphasis is placed on the application of three of the most universally used commercial processes: thermal processing, freezing, and dehydration. Also discussed is the characterization of the heating behaviour of foods and the equipment used for thermal processing. Low temperature preservation is also demonstrated with a focus on freezing. The fundamentals of the freezing process, and the techniques and equipment used in commercial freezing operations are also explained.	3	1/2
15	NT30503	Research Methodology & Scientific Writing	This course discusses various experimental designs, and various stages in research studies from proposing a study to presenting its findings. Health and safety, study information, volunteer consent and ethics would also be discussed. This course should preferably be taken after NT10003 (Statistics).	3	1/2
16	NT30703	Food Safety & Quality	This course emphasizes on the importance of food safety and quality assurance for the food industry. Among the food safety programs discussed include Hazard Analysis Critical Control Point (HACCP), Good Manufacturing Practice (GMP), ISO 22000 and Food Hygiene. In addition, students will be introduced with various aspects of quality assurance and its roles in	3	1/2



			food industry particularly on certain high-risk foods such as poultry and meat products, dairy products and vegetables/fruits. The basic tools of statistical quality control on sampling, inspection, and data organization are made palatable by using examples from the food industry to provide students with case study and promote critical thinking on quality issues. A variety of quality attributes and analytical techniques on objective evaluation based on instrumental measurement are also discussed.		
17	NT31103	Food Sensory Evaluation	Sensory evaluation of foods is widely used in the field of food science and technology for food quality control, assurance and product development. It is the measuring of food attributes through a complex sensation that results from the interaction of our senses such as taste, smell, touch and hearing when food is eaten. In addition, the concepts, principles and protocol of widely used sensory evaluation techniques will be explained. These include discriminative tests, descriptive tests, affective tests and scaling methods. Data collection and statistical analysis will be discussed in order to obtain accurate and valid test results.	3	1/2
18	NT40103	Food Legislation and Standards	The course emphasis on food legislative systems and standards that are adopted by the food industry to ensure their products are safe and achieving minimum standard. The content covers food regulations in the country (Food Act 1983 and Food Regulation 1985) as well as a few other international standards or guidelines set by international expert committees or organizations such as Codex Alimentarius Commission (CAC), World Health Organization (WHO), Food & Drug Administration (FDA) and Food Agriculture Organization (FAO) for global trade in foods. Students are exposed to food safety and quality certification schemes (ISO 22000, Halal, etc) and guidelines on import requirements of some countries. Issues associated to intellectual properties from R&D works with an emphasis on its management in the food science and technology fields will be discussed. Graduate competency on legislative issues and standards of foods is important to ensure food produced follow strictly to the specification and standards, either for domestic uses or export markets	3	2/2
	NP20303	Human Nutrition	This course discusses the importance, function and requirements of nutrients such as carbohydrate, protein, fats, minerals, vitamin and water and their relationship to health. Students will be exposed to the digestive system and the digestion of each nutrient as related to the intake of a well-balanced diet. The structure, function, sources of food and the danger of deficiency or over consumption of various nutrients to the body will be taught to the students. Anthropometric measurement, dietary assessments and nutritional status of individuals will be discussed in lectures and laboratory sessions.	3	1/2
	NP20002	Food Habits	This is an introductory course to food habits. This course aims to provide current, evidenced based knowledge on food habits in consideration of ethnicity,	2	1/2



			race, religion, age group and economic, social and psychological circumstances which are central in understanding the impact of food habits on nutrition and well-being. This course not only emphasizes on the culture, religion and food habits of various races and ethnicities in Malaysia but also considers food habits from different parts of the world considering local and global cross-cultural influence on food habits and nutrition. This course also includes nutrition-related traditional health beliefs and practices as well as the food habits of individuals from different life stages and how these influence nutrition and health.		
	NP20003	Nutrition Through Life Cycle	This course discusses the changing physiology and nutritional requirements as well as related health and nutritional concerns occurring in the different stages of the life cycle such as in pregnancy and lactation, infancy, childhood, adolescence, adulthood and during the late years of life. Methods of nutritional assessment specific for each age group will also be covered.	3	2/2

	NP20603	Functional Food	Functional foods are foods that deliver specific non-nutritive physiological benefits that may enhance health. The growing consumer interest in functional foods is transforming the food industry, and redefining the relationship between food, nutrition, and health. Nutritionists and other health professionals need to be better educated in this area in order to counsel and provide guidance to the public on the efficacy and/or risks associated with these functional food products. The course will cover the impact of functional foods on health and disease prevention.	3	2/2
	NP30203	Nutrition Assessments	This course is designed to allow students to be able to assess the nutritional status of individuals, households, and at the country level using the A,B,C,D of nutritional assessment, i.e., anthropometry, biochemistry, clinical and dietary intake.	3	1/2
	NP30302	Food Security	This course will review the effects of social, economic, political policies and climate change on the availability, accessibility, affordability, appropriateness, and sustainability of food production to allow for attainment of optimum nutritional status. An ability to critically read various literatures and a basic understanding of Malthusian theory is expected of students. Students are also expected to write very analytical assignments based on those readings.	2	1/2
	NP31003	Food Toxicology	This course aims to give students an overview of principles in food toxicology including the application of these principles to qualitative and quantitative toxicological testing of food products. The occurrence of various natural toxicants in food either from the plants or animal origin will be discussed. Other topics cover in the course includes pesticide residues, food additives and contaminants, by product originating from food processing (or packaging materials) as well as implication of industrial waste on human health and environment. In its modern context, food toxicology	3	2/2



			draws heavily on knowledge in chemical and biological field and seeks a detailed understanding of toxic effects. Therefore, it is importance that students from food science and nutrition are familiar with the basic chemical and biological aspects of the deleterious substances present in foods especially dealing with their properties, mode of action and methods of analysis.		
	NP30803	Food Innovation	This course emphasizes the importance of creativity and innovation in the food industry in respond to the needs of the consumers. It gives students industry relevant practical experience whilst exploring the local and global trends in food processing and food innovations. It also addresses the key drivers of food industry innovation - affordability, sustainability, and tightening government regulations. Innovation in developing new food products, processes and business models is recognized as a key requirement for achieving the future vision of food graduates for the fast growing R&D demands within the food and beverage industry. The course involves real problem solving projects, with strong practical links with industry. This provides a good grounding in the creative and practical aspects of food product development, gained through teamwork using local resources.	3	2/2
	NP30403	Enzyme in Food Processing	The historical uses of enzymes to make beer, wine, cheese and bread are fine examples of the industrial exploitation on its catalytic function and selectivity. This course covers the basic and applied aspects of the enzymology important to food systems. The basic aspects of the course include the basic enzyme properties, factors that affect enzyme activity and methods of measuring enzymatic activities. In the other hand, the applied aspects focusing on the enzymes used by the food industry and methods or controlling endogenous enzyme activities.	3	2/2
	NP40503	Food Ingredients	This course is intended to give insight about the chemistry, sources and the commercial value of the various food ingredients. It will discuss both the natural and synthetic food ingredients. Issues related to the development of new food ingredient their applications in food industries including food processing and preservation technologies. Concern and risk associated with the use of various food ingredients as related to the diet and nutrition and health.	3	1/2
	NB20502	Food Enzymology	The historical uses of enzymes to make beer, wine, cheese and bread are fine examples of the industrial exploitation on its catalytic function and selectivity. This course covers the basic and applied aspects of the enzymology important to food systems. The basic aspects of the course include the basic enzyme properties, factors that affect enzyme activity and methods of measuring enzymatic activities. In the other hand, the applied aspects focusing on the enzymes used by the food industry and methods or controlling endogenous enzyme activities.	2	1/2



NB20703	Human Nutrition	This course discusses the importance, function and requirements of nutrients such as carbohydrate, protein, fats, minerals, vitamin and water and their relationship to health. Students will be exposed to the digestive system and the digestion of each nutrient as related to the intake of a well-balanced diet. The structure, function, sources of food and the danger of deficiency or over consumption of various nutrients to the body will be taught to the students. Anthropometric measurement, dietary assessments and nutritional status of individuals will be discussed in lectures and laboratory sessions.	3	1/2
NB20403	Bioprocessing Technology	Bioprocess Technology, a sub-discipline within biotechnology that combines living matter, in the form of organisms or enzymes, with nutrients under specific optimal conditions to make a desired product. It is responsible for translating discoveries of life sciences into practical and industrial products, processes and techniques that can serve the needs of society.	3	2/2
NB20603	Food Packaging	Fundamental principles in food packaging will be discussed in this course. Among the topics discussed are the functions of packaging, consumer trend, type of common raw materials used in food packaging, chemical and mechanical properties of packaging and general terminology in description of packaging characteristics and so on. Students will also be exposed to the innovations evolved in food packaging process/system to suit the market demand. The most up-to-date developments, trends and current issues in food packaging will be highlighted.	3	2/2
NB20003	Unit Operations in Food Processing	This course introduces basic units in food industry, which involves various food processing operations. This course is intended to introduce engineering concepts and to illustrate their use. Students will be exposed to important unit operations in food processing such as fluid flow, heat transfer, drying, evaporation, mechanical separations, size reduction processes, and mixing. This course will be a basis for food engineering process where selection of reasonable raw material can be carried out; plant can be conducted efficiently, safe and cost effective as well as able to meet requirements by consumers.	3	2/2
NB30703	Food Fermentation	The course covers a wide range of food fermentation processes applied worldwide either for product development or as a preservation method. Topics to be discussed in the course include importance and characteristics of microorganisms used in various fermented foods, their health benefits and microbial or enzymatic processing of food and food ingredients to achieve desirable shelf life and favour. In addition, the microbiological consideration in the production of fermented foods, their natural antimicrobial by-products, application of genetic and recombinant DNA for starter improvement as well as their impact on functional properties of foods will be discussed. Equally important is the safety issues related to fermented foods and food ingredients developed from fermentation. Students will have the opportunity to	3	1/2



			run fermentation process in laboratory and study the basic requirements of food fermentation.		
	NB30502	Food Ingredient	This course is intended to give insight about the chemistry, sources and the commercial value of the various food ingredients. It will discuss both the natural and synthetic food ingredients. Issues related to the development of new food ingredient their applications in food industries including food processing and preservation technologies. Concern and risk associated with the use of various food ingredients as related to the diet and nutrition and health.	2	1/2
	NB30903	Food Engineering	The course attempts to discuss basic principles of engineering and momentum transfer for applications in food processing operations. Discussion will be focused on general concept on fluid flow, Newton and non-Newton fluid, thermodynamics and equilibriums in momentum and energy.	3	1/2
	NB30804	Food Product Development	The importance of development of industrial food products from the aspect of consumer and manufacturer needs to be learnt. This course encompasses the study of basic strategies in food products development, starting from idea generation, experiment, product tests in experiment, prototype production, product specification, manufacturing and marketing.	4	2/2
	NB31003	Novel Food Processing	This course will discuss an overview on several non-thermal processes such as Pulsed Electric Field (PEF), High Hydrostatic Pressure (HPP), ionizing irradiation, UV light and etc. Their respective principles, potential applications, advantages and disadvantages of each technique will be discussed.	3	2/2
	NB40703	Bioseparation	This course covers the essential and importance of downstream processing as part of bioprocess in food technology industry. A variety of bioseparation approaches, from conventional to sophisticated high resolution techniques will be described and discussed. The topics herein deal with isolation and extraction of desired products from a complex mixture of starting material, reaction products and by-products, and how to concentrate, recover and purify the desired products.	3	1/2
	NF20102	Food Service Entrepreneurship	This course give student the exposure of basic principal of entrepreneurship as well as emphasis on food service entrepreneurship. Students are to prepared business plan.	2	1/2
	NF20103	Basic Food Service	This course will expose students to foodservice segmentations such as foodservice in commercial areas, noncommercial, and institutional foodservice. Students will also gain knowledge in operational and administration of foodservice operation. This includes procurement, production, and service, menu planning as well as other related aspects of foodservice management.	3	1/2
	NF20002	Molecular Gastronomy	This course explains the basic structural properties of food with the effects of methods and manipulation and types of ingredients. It explains phenomena that occur	2	2/2



			during food preparation in which the effects of physical and chemical influence on food can be identified. Students will be able to understand the science and principles behind food preparation and maintenance, including the preparation of raw materials, cooking methods and the type of food commodities.		
NF20003	Eastern and Western Food	This course provides an opportunity for students to recognize and learn cooking recipes from different countries, including eastern and western cuisine. Students will also have the exposure in terms of theory and practice in the kitchen laboratory such as production area, basic cutting and cookery, baking and cleaning/hygiene.	3	2/2	
NF30103	Menu Development	A study of the principles of menu planning and design with application that discuss basic nutrition, organization, plans, and record keeping techniques. This course will include information on design aspects of the facility. This course taught the students in planning, preparing and develop the menu according to foodservice organizations. Students are introduced to type of menu, standard recipe, the calculation of standard recipe and costing of menu item. This course also explain to the student the principal in designing the menu.	3	1/2	
NF30303	Arrangement, Design and Equipment for Food Service	This course is designed to provide students with the introduction of the kitchen premises and its functions. They will be trained to plan and develop kitchen layout that suitable for food service institutions. This course is designed for students understand the importance of building safety, equipment, systems of energy use, building water systems and water systems (hot & cold), the students also learn about safety practices and HACCP.	3	1/2	
NF40102	International Business	International business introduces students to the concept and diversification component in international business. The topic of globalization, its impact and how it related to the local economy. Students will also be disclosed in the interests of international organizations and international financial policies. Students will be exposed to factors outside of control that affect the international environment and examine the changes that have occurred against the international business arena. This course also helps students to learn social and cultural factors that affect the business carried on around the world.	2	1/2	
NF40103	Commercial Food Preparation	This course is to give exposure to the student to variety of foodservice establishment. Student are taught how to entertain their customer for type of foodservice available and dining service available. Practical training will be conducted at training restaurant " mock restaurant". Student will also learn how to plan and design the layout of foodservice establishment.	3	1/2	
NF40303	Food Service System and Operation	This course provides an introduction about the system and operation of food service organizations. Students will be able to differentiate the type of food service	3	1/2	



			operations, the model/design and its components. In addition, students will gain insight on the management function of food service operations such as marketing and leadership aspects. Theory is applied through group assignment whereby students identify and look into the system of a particular foodservice organization.		
	NF40002	Quantity Purchasing	This course provides exposure on principles and theory of quantity purchasing, whereby aspects such as specifications required in the selection of meat, fish, vegetables, fruits and others. In addition on making a purchase, the students will be exposed to the method of acceptance, receiving, selection and operational costing. The exposure would be given in the use of computers when doing the purchasing.	2	2/2
	NF40003	Special Topics	This course will discuss current issues/scenario facing the food industry, new technologies of food processing, preservation research and recent changes trend in the food service industry. The development of the technological aspects in food service, type of services and commerciality (eg, such as hotels, fast food franchises are popular). Advantages and disadvantages of food service offered at long term or short term periods. Topics to be discussed in detail to understand what is food service.	3	2/2
	NF40203	Quantity Food Preparation	This course exposes the student to prepare the food in large scale food production This is the combination all food courses student learnt before. This course is to teach the student standard for planning production, carry out culinary technique, and justification of procedures and techniques involved in large-scale food preparation. It also gives the student the taste of real practices in enhancing their culinary skills and knowledge.	3	2/2



LIST OF COURSES OFFERED FOR EXCHANGE STUDENTS PROGRAMME (INBOUND MOBILITY)

FACULTY OF HUMANITIES, ARTS AND HERITAGE

NO.	COURSE CODE	COURSE NAME	COURSE DESCRIPTION	CREDIT HOUR	YEAR/ SEMESTER OFFERED
1.	AK10103	Introduction To Communication	Introduction to Communication offers students a scientific understanding of the field of communication studies. It provides an overview of the various themes, approaches and specializations offered by the Communication Programme in the School of Social Sciences. Students are introduced to the socio-historical development of scientific knowledge in the field of communication in the Western world and are offered an understanding of key concepts, models, systems and forms of practices in various cultural settings. The course encourages students to question and analyze media and cultural forms, practices, discourses, narratives and issues in Malaysia, the region of Borneo and Asia generally.	3	1/1
2.	AK21703	News Writing	News Writing introduces students to the basic concepts, principles, elements and methods of journalistic writing with an emphasis on hard news writing. Students are offered an understanding of news room culture such as punctuality, deadlines, speed, accuracy, scoop, agenda setting, ethics, herd instinct, source credibility and interview techniques. The course discusses the various news platforms and convergences taking place in journalism with the rapid rise of internet sites and new forms of mobile technology in the context of a competitive and globalizing media environment. The course attempts to foster a curious mind and 'nose for news' among students while equipping them with practical news gathering and writing skills and encouraging them to identify potential stories, pose sharp questions, seek out sources for interviews and articulate in the English language and Bahasa Malaysia.	3	2/1



3.	AA20603	Society Religion	And	This course introduces students to the role of religion in society. Theories on the origin of religion by Tylor, Durkheim and Malinowski, and theories on the function of religion by Radcliffe-Brown, Kluckhorn and Geertz are discussed. In order to also understand the role of religion in society, aspects of religion as a group phenomenon, its relation to conflict and social organization, political life, economics, class systems, and also to the position and status of women, as well as change are discussed. In the context of culture, religion as systems of meanings, rituals, myths, shamanism and worship are debated.	3	1/2
4.	AA20803	Development Environment	and	Focusing on alternative development approaches the course examines the different ideas and conditions that have driven the search for alternative development, and why such alternatives are being sought. The first session will introduce concepts of 'development', quality of life, 'Third World', North/ South and ways of looking at the environment in these contexts. We will then explore the meaning of the terms sustainable development, 'community', poverty alleviation, deforestation and reforestation, and agricultural development. Special attention will be given to the effects (gains as well as mistakes) in development programmes that have been designed for rural areas, indigenous communities as well as women. It will be further concerned with exploring the roles of local communities, state and market in achieving developmental and environmental outcomes.	3	2/2
5.	AA30903	Gender Issues		This course is intended to provide a critical perspective on how different societies construct gender inequality and how the consequences of such a construction affect institutions, culture and society. This course aim to expose students to the diverse theories that explain gender inequality in a society, develop knowledge to critically analyze inequality based on gender, develop communication skills in writings and presentation of knowledge and develop the spirit of sharing knowledge.	3	3/1
6.	AT20103	ICT For Sciences	Social	The main focus of this course is methodologies, methods and theories of research. First, the students will be exposed to the basic such as philosophy of research.	3	1/1



			Various components related to research proposal such as the research problem statement, research questions, research objectives, research purpose statement, literature review and the limitation of study will be discussed. Finally, the methods of data collection, research theories and data analysis will be given due emphasis in this course too.		
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LIST OF COURSES OFFERED FOR EXCHANGE STUDENTS PROGRAMME (INBOUND MOBILITY)

FACULTY OF ENGINEERING

No	UMS Course Offering	Year/Sem	Synopsis
1	KC31903 Environmental Engineering / KA40503 Environmental Engineering	3/1 4/1	UMS Undergraduates Prospectus CD
2	KS04403 Calculus I	1/1	
3	KM10702 Engineering Drawing	1/1	
4	KM21102 Engineering Thermodynamics	2/1	
5	KM20303 Fluid Mechanics	2/1	
6	KM31503 Measurement and Instrumentation	3/1	
7	KC11302 Engineering Chemistry I	1/1	
8	KS06603 Engineering Programming	1/1	
9	KS05503 Calculus II	1/1	
10	KM31303 Applied Thermodynamics	3/1	
11	KM41103 Tribology	4/1	



LIST OF COURSES OFFERED FOR EXCHANGE STUDENTS PROGRAMME (INBOUND MOBILITY)

FACULTY OF INTERNATIONAL FINANCE LABUAN

No	UMS Course Offering	Year/Sem	Synopsis
1	Bachelor of International Business (International Finance) with Honours	-	UMS Undergraduates Prospectus CD
2	Bachelor of International Finance (International and Offshore Banking) with Honours	-	
3	Bachelor of International Marketing with Honours	-	
4	Bachelor of International Finance (International Financial Economics) with Honours	-	
5	Bachelor of Islamic Finance with Honours	-	



LIST OF COURSES OFFERED FOR EXCHANGE STUDENTS PROGRAMME (INBOUND MOBILITY)

FACULTY OF BUSINESS, ECONOMICS AND ACCOUNTANCY

No	Code	Name	Description	Credit hour	Year/Semester offered
1	BE33103	Fundamentals of Hospitality Management	<p>This course is designed to introduce the student to the hospitality industry.</p> <p>It defines the hospitality industry as a single, interrelated industry composed of food and beverage, travel and tourism, lodging, conventions and expositions, meetings, leisure and recreation.</p> <p>Emphasis is placed on understanding the industry components and their current issues and future trends. In addition the course will cover important of management elements that will include planning, organizing, controlling and leading and how they apply to the hospitality industry.</p>	3	Year 3
2	BE31103	Food and Beverage management	<p>This course aims to introduce the students to the various aspects of F&B service. It begins with a discussion on the evolving F&B industry and service procedures, including organization of the staff members and service equipment that form an important part of the F&B department. This course emphasis on the importance of knowing and planning the menu well. The students will also learn about various kinds of covers and courses. In the rapidly evolving world of F&B service, it is necessary to keep oneself updated with the active terminology of the industry.</p>	3	Year 3
3	BE33403	Restaurant Management	<p>Restaurant Management is one of the most important managerial parts in hospitality operations; therefore this subject is to provide a basic understanding of the various challenges and responsibilities involved in managing a restaurant. This course has been designed to give an insight of the industry and the skills required in managing a restaurant and its operation. This course will provide the students with the knowledge for effective management of restaurant operations, while presenting the basic service principles and highlighting the importance of meeting and exceeding the needs of the guest.</p>	3	Year 3



4	BD20403	Investment Analysis	<p>In life, one may have to deal with making various investment decisions, regardless whether individually or in their chosen careers. Therefore, the knowledge on investments itself is considered necessary as it will guide them to recognize the investment problems, as well as knowing how to deal with them. End of the day, it will help them to be a good investment decision maker. This course therefore serves to build the strong foundation for students to be able to understand and draws on basic familiarity with investment and portfolio management, with the goal of placing their understanding in a broader and more comprehensive framework. This is an intermediate course in investments. It studies the investment alternatives available in domestic and world financial markets and the ways of thinking about analysing these investments. In particular, this course will cover the mechanics of investing through data in Stock markets, sources of investment information and advice, risk and return, the mathematics of investing analysis, growth and value of investing, fundamental and technical analysis, stock and bond valuations, closed-end and open-end investment companies (mutual funds), derivatives and portfolio management and asset allocation.</p>	3	Year 3, Semester 5
5	BT12003	Marketing Management	<p>This course will introduce the students to the marketing theory and concepts. The students will be introduced to the important elements of marketing the product, price, place and distribution (4Ps). The other aspects of marketing, such as, Marketing Strategy, Promotion, Market Planning, Retailing and Wholesaling, Target Marketing, International Marketing, Market Segmentation, Services Marketing also will be covered. All the topics will help students to be able to develop a foundation of knowledge and skills in marketing. The course aims to provide students with the basic knowledge and skills necessary to design and execute effective marketing plans and programs. Marketing is one of the core course for Faculty of Business, Economics and Accountancy</p>	3	Year 2 , Semester 3
6	BG20103	Consumer Behaviour	<p>Marketing focuses on managing profitable customer relationships, which means attracting new customers and retaining and growing current customers. Customer relationships are based on how the consumers behave, how and why they accomplish their buying decisions every day. However, understanding consumer behavior is complex because it depends on diverse factors. This course examines the theories behind consumer behavior, which are approached at a micro- and macro-level. The macro-examination investigates the cultural and sociological factors influencing consumer decision making, whereas the micro-examination explores psychological and cognitive processes affecting consumer responses. Investigating consumer behavior is not only useful for designing effective marketing strategies, but it is of interest for policy makers, consumer advocates and corporate strategists.</p>	3	Year 3, Semester 5



7	BG33203	Retail Marketing Management	The purpose of this course is to introduce students to the comprehensive overview retail industries both in Malaysia and Asia. The retail industry is one of the major sectors of Malaysia's vivacious economy which consistently requires increasing focus on creating skills and clear advancement routes to raise job professionalism, customer service and retail productivity. Students will develop skills and knowledge in retail operation and management, as well as communication and team building skills which are essential assets in levelling up the retailing service standard.	3	Year 3, Semester 5
8	BG31903	Integrated Marketing Communication	This course introduces students to the concept and application of integrating the elements of advertising, sales promotion, public relations, direct marketing and other essentials of the marketing mix to support the overall marketing strategy. IMC allows marketers to effectively and efficiently reach prospects and retain customers with consistent brand messages in the context of fragmented media and increasing customer empowerment through the Internet. This course is designed for students who will become decision makers in almost any company concerned with consumer/customer communications including: advertising, public relations, promotions, Internet, marketing, media, relationship marketing and client organizations. Students will learn and practice message and touch point integration with special attention to effectiveness and measurable results. Communication professionals are now more than ever accountable for their programs and strategies. They also have more power to shape the way in which marketing organizations do business.	3	Year 3
9	BC32333	Geographical Information System (GIS)	Spatial analysis is important in formulating economic development policies. Many of the concepts employed in economic development analysis have inherent spatial components. GIS is often the best, and sometimes only, way to handle these spatial elements. GIS is an efficient tool for economic development analysis. Therefore, this particular course aimed to equip student with extra tool so as to enable them to better understand development theories for economic planning and development policies.	3	Year 2 , Semester 4
10	BC20603	Development Economics	This course will debate various economic development and growth theories, issues in implementation of development policies, as well as various government policies to achieve sustainable development and growth. Empirical evidence on economic development in developed and developing countries will also be discussed. Student will be exposed to principles, objectives, methodologies and various economic institutions to fill development aspirations of various economic institutions.	3	Year 2, Semester 3



11	BC20203	Fiscal Economics	This course is important to provide an overview of fiscal policy and financing activities of government. This course investigate fiscal economics issues and related government strategies for resilient domestic economy. The macro level examination evaluate the role of government in manage revenue and expenditure through fiscal policy. Investigating fiscal economics is not only useful for designing government policy, but it is more important to the future development of the country.	3	Year 2, Semester 3
12	BC30603	Project Planning and Appraisal	This course will focus on various aspects of project planning and project evaluation including project definition, project preparation method, project evaluation from financial perspective, economic and cost-benefit and relevant concepts; project life cycle; project identification, preparation, interpretation, implementation and re-evaluation will be focused. This course will examines the principles and practice underlying cost-benefit analysis (CBA) and cost-effectiveness analysis (CEA). The course will examine the technical details of economically sound cost-benefit analysis (CBA). The concept of willingness to pay, the role of time, the project boundary, shadow pricing for marketed and non-marketed goods, and the use of hedonic price indices and contingent valuation are also discussed. Examples of the use of CBA and CEA in transport, recreation, environmental and health applications are also discussed.	3	Year 3, Semester 5
13	BC30403	Economic Planning	This course focuses on various aspects and issues in development economics, particularly essential principles and concepts of economics that are particularly relevant for understanding development problems that affects economic planning and development. Special reference is given to the core problems faced by many developing and Third World countries in their pursuit for development. The rationality of the inclusion of this course is to give a grasp and understanding of the relationship between economic development and its issues faced by most developing and least developed countries.	3	Year 3, Semester 5



14	BC31403	Environmental Economics	Environmental economics is a dynamic field. This course will focus on many environmental issues. This subject has become an important focus of debate around the world, with experts as well as ordinary citizens concluding that the environment and the economy can no longer be viewed as separate entities. As a result, contemporary environmental issues are increasingly seen from the point of view of their economics effects and their consequences for human well-being now and in the future. Environmental issues have been integrated into private and public decision making. National and international policies have been developed to preserve natural resources and ecosystems. Firms have redefined their business strategies in response to new regulations and the changing demands of more environmentally conscious consumers. In other words, there has been a major shift of focus on the part of development specialists towards the many problems of the environment and development. Growth and environmental quality can be both complements and substitutes. As a society, we have come to recognize that economic activity and the natural environment are inexorably linked, and this relationship is the core of environmental economics.	3	Year 3, Semester 5
15	BC30303	Resource and Agricultural Economics	The scope of discussion in this course is divided into two parts: In the first section, the following topics will be covered: concepts for examining natural resources, natural resource scarcity, open access, private ownership, renewable and non-renewable resources, usage of static and dynamic models to examine natural resource use, as well as issues of sustainability and natural resource scarcity in the past and present. All topics related to agricultural policies and impact of globalization towards agriculture will be discussed in the Malaysian context. The second part will deal specifically on concepts and issues in agricultural economics and agri-business. The second part will focus on concepts and issues in resource economics. Topics of discussion in part one include: basic concept of economics, definition of agricultural economics, production function – single input, two inputs, cost of production, theory of consumer behaviour, consumer equilibrium and market demand, market structure, pricing, agricultural marketing, agricultural reform and policies.	3	Year 3, Semester 5
16	BT22003	Entrepreneurship	The course gives knowledge to students about the main principles related to entrepreneur and entrepreneurship concept, which serve as a basic and guidance for future entrepreneurial activities. This course is designed to monitor the new innovative approaches that help to realize the concept of entrepreneurship and the development of business venture. Besides this courses is expected to give exposure and to introduce tools and practices needed in creating successful new business venture and has competitive advantage that in line with the changes in the globalization era and trade liberation.	3	Year 2, Semester 3



17	BB20303	Franchise management	The franchising method is one of the external growth strategies in order to expand businesses through entrepreneurial development. Through an understanding on the franchising concept and how it has been applied in various retail businesses, this course can help trigger ideas to future entrepreneurs to create their own businesses or attain business ownership as franchisee.	3	Year 2, Semester 4
18	BB31603	New Venture Management	This course is about the actual process of getting a new venture started, growing the venture, successfully harvesting it and starting again. It is designed to enable students to apply the entrepreneurship concept by applying the theories to a real entrepreneurial activity. The readiness of students in terms of their thinking, action and performance in entrepreneurial activities can be increased through the experiential learning. Students will be exposed to many of the vital issues in launching and creating a business venture such as opportunity recognition which consider the element of structure, skills, people and future.	3	Year 3, Semester 6
19	BB20103	Creativity, Innovation And Entrepreneurship	This course is to present the contemporary view of innovation management. This course aims to provide students with the knowledge to understand the nature of creativity and innovation and its importance to entrepreneurship development as well as how to manage innovation. This course also will discuss the innovation process and strategy for innovation. The discussion also will include the manager's role in fostering a climate that encourages and rewards innovation.	3	Year 2, Sem 1
20	BA21003	Introduction To International Business	This course aims to provide an overall idea of the scope of international business compared to domestic business. Students will analyze the global environment to determine the opportunities, challenges and complexities faced by companies operating in the international arena. Students will conduct country analysis to identify the similarities and differences between countries and determine the opportunities and risks of specific countries. Appropriate entry strategies for companies that plan to go international will also be identified and discussion on how companies that operate internationally are managed will also be included.	3	Year 2, Sem 1



21	BA21203	Cross-Cultural Management	Globalization has brought about an increased interaction between managers from various cultures. As a result, it is important that managers of today understand culture and the implications of culture in the development of individual and group culture as well as management style. This course will emphasize on the differences in management practices as a result of differences in culture. Topics that will be discussed include the interaction between culture and organization, strategy and culture, human resource and culture, leadership and culture, as well as on communication and negotiation.	3	Year 2, Sem 2
22	BA21103	International Marketing	This course introduces the concepts and elements of marketing in a wider aspect of international environment. Discussions will focus on the importance of firms using the appropriate marketing strategy to enter foreign markets and compete globally. Students will be exposed to the process of identifying new foreign markets and formulating a marketing strategy for the chosen market. This course includes the introduction to marketing environment that influences Marketing Management.	3	Year 2, Sem 1
23	BA32303	International Trade	This course focuses on the basic theories in international trade which determine the factors that cause international trade amongst nations. The course components include classic and contemporary theory of trade liberalization and international trade.	3	Year 3, Sem 1
24	BA31403	Issues In International Business	Through the use of cases, students are exposed to making decisions confronted by real managers involved in international business using concepts they have learned throughout the course. Topics covered in this course include analysis of the global environment and foreign markets, determining the appropriate mode of entering foreign markets (e.g. exports, licensing/franchising, strategic alliances and foreign direct investments) and formulating feasible strategies to compete in the international arena.	3	year 3, Sem 2
25	BA33103	International Business Relations	This course aims to provide an overview of the international business context of doing business. Students are exposed to the challenges involved in cross-border transactions.	3	year 3, Sem 2
26	BA31103	International Human Resource Management	This course aims to provide an overview of the human resource management function in the international business context of doing business. Students are exposed to the issues, opportunities, and challenges involved in managing cross-border teams, multicultural workforce, and diversity in the business environment.	3	year 2, Sem 1
27	BA33303	Global Supply Chain Management	This course is intended to give the students greater understanding of the details of Global Supply Chain Management (GSCM), issues involve when involve with global supply chain management with different parties and different countries in different environment.	3	Year 3, Sem 2



28	BP12103	Principles of Accounting	This course aims at introducing students to the fundamentals of book keeping and principles of financial accounting. It explains the accounting equation, identifies steps to complete the accounting cycles and discusses the role of accounting records in an organisation. It further explains the differences between cash and accrual accounting, the nature of general purpose of financial statements, the role of accounting information in making economic decisions and discusses the significance of accounting systems in providing relevant and reliable information. It also exposes students to financial statement analysis and interpretation of financial ratios.	3	Year 1/ Semester 1
29	BP12203	Financial Accounting I	This is an intermediate financial accounting course and is a continuation of Principles of Accounting course. The focus is on company accounting. The course covers the regulatory and conceptual framework underlying the preparation and presentation of financial statements. Topics include accounting for current, non-current and intangible assets as well as impairment, liabilities and contingencies, deferred tax and leases. (<i>Prerequisite: A passing score of 50% in Principles of Accounting or an equivalent course.</i>)	3	Year 1/ Semester 2
30	BP17103	Financial Management	This course was designed for students to learn about the main principles in the financial management and its importance in solving problems whenever they deal with making a financial decision. To increase the understanding in analysis, case study discussions will also be used so that the students will be exposed to real world situation and enables them to implement whatever they have learnt in class.	3	Year 1/ Semester 2
31	BP21103	Management Accounting I	This course introduces the basic concepts, terminologies, principles and methods of cost accounting at operational level. This includes the introduction of cost elements, basic cost accumulation techniques and various costing methods, including contemporary approaches in arriving at the cost of products produced or services rendered. (<i>Prerequisite: A passing score of 50% in Principles of Accounting or an equivalent course.</i>)	3	Year 1/ Semester 2



32	BP24103	Taxation I	<p>This course is an introductory course in taxation, covering several aspects in taxation. The course starts off with basic concepts and then covers the philosophy and practice of taxation in general. The course will also cover Malaysia taxation in detail. Specifically, the course will offer an insight into the taxation principles, the scope of taxation, the determination of resident status, the determination of basis periods, the assessment and the calculation of tax liability on income derived from employment, business and non-business sources. Other topics covered include the administrative aspects of taxation such as assessment and collection procedures and indirect taxes currently in force in Malaysia.</p> <p><i>(Prerequisite: A passing score of 50% in Principles of Accounting or an equivalent course.)</i></p>	3	Year 3/ Semester 5
33	BP23103	Basic Auditing And Control Systems	<p>This syllabus covers the fundamental principles and concepts of auditing of financial statements. Students are required to have a good understanding of the legal and professional framework governing the proper conduct of an audit. In addition, they are expected to have a thorough knowledge of the audit process of evidence accumulation and reporting. This process would ordinarily include planning, assessment of risk and materiality, performance of tests of control and substantive procedures and the final issuance of an auditor's report. <i>(Prerequisite: A passing score of 50% in Principles of Accounting or an equivalent course.)</i></p>	3	Year 2/ Semester 4
34	BP35103	Accounting Information Systems I	<p>This course teaches conceptual, analytical and technical skills necessary to work efficiently and productively as an accountant in a computerized business information environment. The focus will be on the effect of information technology on accounting cycles and processes and designing effective internal control systems. Along the way, the students will also be exposed to the use of accounting software packages.</p> <p><i>(Prerequisite: A passing score of 50% in Principles of Accounting or an equivalent course.)</i></p>	3	Year 3/ Semester 5
35	BH20103	Human Resource Economics	<p>This course is designed to provide an introduction to the theory and practice of contemporary labour economics. The primary focus of this course will be on developing an understanding of the determinants of wage rate and employment levels in labour market. The analytical tools of neoclassical economics will be used to examine contemporary policy issues. Topics of discussion include supply and demand of labour, labour market equilibrium, wage determination and structure, and migration.</p>	3	Year 2/ Semester 4



36	BH30603	Labour In Islam	This course is designed to provide an introduction to Islamic economics in general and labor from Islamic perspectives. It involves how an organization or a nation is functioning by implementing Islamic approaches to labor market. What are the permissible and non permissible economic activities are allowed in Islam. How wage determination is different between conventional economics and Islamic economics. Discussion on minimum wage principle is also pertinent to labor market, thus, Islamic labor market have its own approaches dealing with minimum wage commonly concern blue collar jobs.	3	Year 3 / Semester 6
37	BH30403	Gender And Labour Market	This course provides introductory materials for economics status of women as compared to men in labor market. The syllabus is devoted to applications and policy and less formal economic theory and specifically concerned with the economics status of women. Most chapters include case studies (from the United States of America) illustrating how the gender differences from an economics perspective. The chapters introduce students to the economist's view of the labor force participation of women, the role of labor market discrimination, gender wage gap, non market work (time spent with children), trends in marriage, divorce and overall fertility, affirmative action and findings regarding the effectiveness of antidiscrimination legislation and women's status across broad regions of the world.	3	Year 3/ Semester 1
38	BY20103	The Principles Of Tourism	Principles of Tourism are an introductory course which introduces the key concepts that tourism student will need to understand the complexity of tourism. Students will be able to identify the main sub sectors when combine constitute the tourism sector. Besides that the focused is also on insights into the operating characteristics, trends and issues that the dominate tourism and specifically upon attractions, accommodations, intermediaries, transportation, and public sector organisation and destination and the process and application of marketing to the unique characteristic of tourism.	3	Year 1 / Semester 2
39	BY33203	Sustainable Destination Management	This course demonstrates that tourism can be managed through the processes of policy formulation and planning as well as the need for an integrated approach to the planning, development and marketing of a destination. The concept of destination is examined at the national, state, regional and local levels and issues such as destination branding, events and destinations, managing destinations in crisis, and the impacts of tourists on destinations are explored. Students also will focus on the comparative advantage and competitive positioning of tourist destinations characterized by commitment to sustainable development principles and practices.	3	Year 3 / Semester 5



40	BY30803	Special Interest Tourism Management	Upon completion of this course, students will be able to discuss the range of special interest markets which exist within the tourism spectrum. This course examines both the theoretical and practical aspects of special interest tourists and their motivations. This understanding is then linked to the need to manage these specific needs by ensuring the qualities and characteristics of the destination are aligned to the needs of targeted niche markets. Student will be exposed to a range of niche markets, both those that are popular such as adventure and marine tourism, as well as newly emerging markets such as thana tourism, health and wellness tourism, and also volunteer tourism. Students will also be exposed to the potential entrepreneurial and employment opportunities that exist within special interest tourism for the purpose of encouraging business development and employment opportunities.	3	Year 3 / Semester 5
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