



PROGRAMME SYNOPSIS

Year 1 Semester 1

Course: ETF 3023 Biostatistics

Synopsis:

This subject covers experimental design, statistical method of quality control in the food industry, and statistical tools and strategies for process control improvement.

Course: ETF 3113 Chemistry

Synopsis:

Students will be introduced to some fundamental knowledge in chemistry and related to food science and technology field. The topic covers are structure of atom, chemical bonding, stoichiometry, solutions, acids and bases, and organic chemistry.

Course: ETF 3013 Mathematics

Synopsis:

This course covers the topics such as inequalities and absolute value, trigonometric formulas and identities, polynomial of higher degree, equations and their graphs, analytic geometry, derivatives, integration and its applications, first-order differential equations and introduction to statistics.

Course: ETF 3213 Physics

Synopsis:

This course covers some physics topics that related to food science and technology field such as physical quantities and units, properties of matter, temperature and heat, light and transmittance, basic electrical and first law of thermodynamics.

Course: MPU 3412 Co-curriculum

Synopsis:

Students participate in clubs to gain opportunity of training and learning of specific techniques and skills related to the themes of the clubs. Students are also encouraged to manage the clubs and organise events for the clubs. This allows students to practice effective communication skills, both verbally or written, polish managerial skills while

becoming leaders and managing events in the clubs, and cultivate awareness on lifelong learning while exposing to well-diversity of knowledge, skills and techniques.

Course: UCS 3112 Communication in the Workplace

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Synopsis:

This course comprises of basic knowledge and skills in workplace communication, providing a fundamental exposure and guide to the various forms of communication in the workplace covering both verbal communications and written communication. These include practice in conveying ideas and opinions, writing proposals and business letters, preparing reports, oral communication and presentation.

Course: UCS 3122 Professional English: Essential Communication Skills

Synopsis:

This course provides a comprehensive reference guide on technical communication principles, skills and practice in workplace. It explains the principles of effective communication, both written and oral, and provides solid advice and practical guidelines on how to strengthen communication skills and produce good technical and business writing. It introduces the theory, specimen documents, suggested layouts and explanations that develop skills and understanding.

Year 1 Semester 2

Course: MPU 3123 Tamadun Islam & Tamadun Asia (TITAS)

Synopsis:

This course focuses on concepts of culture and ethnic relations, specially emphasises on the latest development in Malaysia. It includes the concepts of ethnic relations, insights of ethnic relations in Malaysia in the aspects of economics, politics, constitutions and religions in Malaysia. It also discuss about the challenges for the enhancement of the ethnic relation and the roles of the government and the society.

Course: MPU 3312 Entrepreneurship Skills

Synopsis:

This course provides an understanding of an individual as entrepreneur and the process of creating and growing a new venture. The topics include theory of entrepreneurship, types of entrepreneurship, the importance of entrepreneurship and factors affecting entrepreneurship, entrepreneurship develop in Malaysia, entrepreneurial creativity and innovation, opportunity identification, business plan, business support system and form of business entities and relate legal requirements.

Course: ETF 3023 Computer Science

Synopsis:

This subject covers sequence alignment and database searching, predictive methods, primer designing, basic in proteomics and genomics, and the introduction to drug designing.

Course: ETF 3413 Introduction to Food Science and Technology

Synopsis:

This module covers basic fundamentals of food science and technology. Students will be briefly introduced to the basic principles of food chemistry, food composition, quality and regulation with the appropriate technology of food preservation, processing and food safety.

Course: ETF 3313 Microbiology

Synopsis:

Students will be introduced to the basic laboratory skills and techniques necessary to work efficiently and safely in a microbiology laboratory including the concept and use of “aseptic technique”, as fundamental to practical microbiology. Also, this course covers the written and oral communication skills through assignment and presentation. The laboratory exercises stressed the critical areas for today’s microbiologist: microscopy, culture handling and maintenance, microbial biochemistry and physiology and molecular biology.

UCS 3312 Green Technology

This subject explores the green technology with basic knowledge and fundamental green principles in recycling, green home living, green daily life, green buildings, alternative energy, green transportation, green business and green economics.

Year 2 Semester 1

Course: ETF 3143 Food Chemistry

Synopsis:

This course is designed to give students an understanding of the chemical aspects of food composition, structure and chemistry of food components. Emphasis is given to the functional properties and chemical reactions of the major components of foods: carbohydrates, lipids, proteins, enzymes, carbohydrates, water, etc., as they relate to the composition, preservation, processing, stability, flavour, and nutritional characteristics of foods.

Course: ETF 3134 Biochemistry

Synopsis:

This course integrates the knowledge of basic microbiology, molecular biology, chemistry of cells, biochemical kinetics, enzymes, metabolic pathways, bioenergetics, basic genetics, photosynthesis, etc. The lab session allow students to relate between theory and practical/applications.

Course: ETF 3324 Food Microbiology

Synopsis:

This subject introduced students to the various micro flora associated with food products and their beneficial role as well as deleterious effect on processed food products. Also, this subject covers the laboratory methods used in the microbiological analysis of foods, and with the identifying characteristics of the major groups of microorganisms associated with food spoilage, food borne disease, and food fermentations. Emphasis will be given on the design of media and methods for the identification of the microbial groups.

Course: MPU 3212 Malaysian Economy

Synopsis:

This course provides the student with an overview of the Malaysian economy, the role of the government and its economic interaction with other countries. Various topics will be discussed, including: the government economic policies and activities (primary, secondary and tertiary), Collin Clark's hypothesis of economic development, key growth engines of Malaysian economy towards high income economy (Iskandar, NCER, ECER, SCORE, and SDC), and Economic Transformation Programme (ETP).

Course: ETF 3423 Fundamental of Food Engineering

Synopsis:

This course covers the introduction to food engineering, units and dimensions, mass and energy balances, thermodynamics, fluid flow and heat transfer.

Year 2 Semester 2

Course: ETF 3443 Food Analysis 1

Synopsis:

This subject provides general information on the regulations, standards, labelling, sampling and data handling as background on specific methods to determine the proximate contents and some properties of food products. The chemical properties include pH, total soluble solids, titratable acidity, vitamin and mineral contents etc. A special emphasis is placed on the evaluation of methods and interpretation of result. Expanded topics on analysis of vitamins, mineral, pesticides, mycotoxin and drug residue in food are also included.

Course: ETF 3453 Food Sensory Evaluation

Synopsis:

Overview of the physiological and psychological foundations of sensory functions, methods for sensory testing and fundamentals of analysing data.

Course: ETF 3433 Introduction to Nutrition

Synopsis:

The module covers basic foundations for the study of human nutrition. The students will be introduced to the nutrients and their functions in the body. Students will learn the application of foods and nutrients in energy balance and weight control, in physical activity, in the life cycle, in disease prevention and in hunger.

Course: ETF 3124 Food Analysis 2

Synopsis:

Application of quantitative and qualitative analysis used in instrumental analysis of food products. The analysis instruments include UV-VIS, HPLC, GC, AAS etc. Also, this subject provides information on the techniques needed to analyze the common physical properties of food products such as viscosity, A_w , texture, colour measurement, etc. A special emphasis is placed on the preparation of sample and interpretation of results.

Course: ETF 3513 Technology and Management of Food Waste

Synopsis:

This subject covers the sources and classification of industrial waste, problems in waste management, physical and chemical waste treatment processes, integrated physical and biological processes, thermal waste treatment processes and reduction strategies of waste.

Year 3 Semester 1

Course: ETF 3473 Food Packaging

Synopsis:

An introduction to the physical principles of packaging for the food industry with emphasis on the consequences to food stability and quality. This course is designed to give the student a comprehensive overview of the scientific and technical aspects of packaging foods. The principles of food packaging, function of packaging, types of food packaging, packaging materials and application, typical packaging equipment, packaging regulations and labelling as well as testing will be discussed adequately.

ETF 3464 Food Processing and Preservation

In this course, students will be provided with knowledge and skills use to process and preserve various food products. Initial discussion involve some important definitions; relationship of food processing and preservation; microbial, physical and chemical aspects of food preservation. Further discussion on principles of food processing and preservation techniques will be discussed based on temperature used: ambient, high and low temperature processing. Also include the application of processing techniques on specific food products. For each topic, the effects of processing or preservation techniques towards ingredient/food products would also be discussed.

Course: ETF 3523 Food Safety and Assurance

Synopsis:

This course covers the principles of food safety, designing a safe food processes, sanitation in food manufacturing, determining of hazards, food safety system and management such as HACCP, GHP, GMP, ISO, TQM etc.

Course: ETF 3533 Food Standard and Legislation

Synopsis:

This course covers the principles of foods standards, acts, regulations, enforcement, etc, that is widely practiced in Malaysia and at international level.

Course: ETF 3484 Unit Operation in Food Processing

Synopsis:

This course covers the common unit operations such as drying, evaporation, thermal processing, fluid flow etc., which are commonly applied in food industries. A special emphasize will be given to the process flow, material and energy balances as well as mechanism of the process.

Year 3 Semester 2

Course: ETF 3573 Halal Food

Synopsis:

This course covers the concept of halal and haram in Islam, sources of halal and haram foods, slaughtering methods, halal food processing concept from farm to plate, halal food ingredients and additives.

Course: ETF 3563 New Food Development

Synopsis:

This course introduces the students to the food product development stages including preliminary product description, prototype development, product testing and the formal presentation of a new product development. Students will learn the importance of

teamwork, product specification, food formulation, food ingredient, ingredient interaction and how to conduct and terminate a project in an orderly manner.

Course: ETF 3543 Final Year Project I

Synopsis:

In the beginning of the course, students are required to attend a research workshop where they will be taught on how to execute a research, conduct literature review, decide appropriate methodology, collect, interpret and analyse data. Later, students will be guided by the respective supervisors on how to plan for research which will be conducted later in the course entitled Final Year Project II. Students will carry out weekly discussion with their supervisor on the research topic, objective, scope, research programme, and the extent of the development of the research proposal. A report and a presentation of the research proposal are required at the end of the course.

Year 4 Semester 1

Course: ETF 3583 Food Management and Business

Synopsis:

This course covers the topics such as planning, organizing, leading and control the organization. Also, this course introduces students to the business models, communicating, reporting and analysing the business models.

Course: ETF 3556 Final Year Project II

Synopsis:

This course provides a platform for the students to experience the process of executing a research project (as continuity of ETF3543 Final Year Project I).

Course: MPU 3113 Hubungan Etnik

Synopsis:

This course focuses on the concepts of culture and ethnic relations, specially emphasises on the latest development in Malaysia. It includes the concepts of ethnic relations, insights of ethnic relations in Malaysia in the aspects of economics, politics, constitutions and religions in Malaysia. It also discuss about the challenges for the enhancement of the ethnic relation and the roles of the government and the society.

Course: UCS 3212 Creativity and Innovation

Synopsis:

This subject explores the creativity and innovation of thinking skills with an exposure of principles of thinking, methods of generating ideas, creativity in problem solving techniques, creativity in writing as well as giving the experience of producing creative and innovative product through project given.

Year 4 Semester 2

Course: ETF 3912 Industrial Training

Synopsis:

Tenth to twelve weeks on job training at any food and beverage suppliers, food consulting and manufacturing firms, dietician clinics, government department and statutory bodies related to food technology practices. Nature of works encompasses supervisions, measurements, research etc. Work experience is recorded in work diary, training report and presentation upon completion.

Elective Subjects

Course: ETF 3613 Palm Oil Technology

Synopsis:

This course covers the major processing technology of palm oil based industries in Malaysia as well as the fundamental structure, chemistry, fatty acids compositions, properties of palm oil and food products derived from palm oil. This course also reviewed the issues related to palm oil technology such as health conscious, trans fat, standard and quality control during processing and etc.

ETF 3623 Aqua-Product, Meat and Dairy Technology

This course covers aqua-products, meat and dairy technology starting from the production/capture through the utilization as a muscle foods. Fundamentals in live animal evaluation, slaughter/cleaning, fabrication, fresh meat/fish, by-product utilization and processed products. The physical, chemical, physiological and microbiological properties of meat/fish as related to meat/fish composition, quality, nutrition and safety. Also, this course covers the multifaceted nature of milk and possibilities of contaminations from grass to consumers table, appreciation of relationship between raw materials, processing technologies and marketing requirement or product quality and the use multivariate statistics in product design and process optimization. Microbiological, chemical and physical analyses, quality control and regulation of milk and dairy products. Evaluation of refrigeration, pasteurization, concentration, homogenization, product manufacture (milk, cheese, ice cream, yogurt, etc.), automation, and sanitation operations.

Course: ETF 3633 Bakery and Confectionery Technology

Synopsis:

Students will be introduced to the scientific properties of bakery and confectionery products. The reactions of ingredient, chemical, physical and nutritional components will be discussed along with the fermentation and baking processes.

Course: ETF 3643 Food Ingredient

Synopsis:

This course covers the principles and utilization of food ingredients, regulations and practices as well as the differences in additive usage in other countries. The students will be exposed to various aspects of food ingredients including the properties of food with emphasis on the chemical basis of the food quality attributes of flavour, texture, colour, nutrition, and chemical safety. Flavour, colour and food additives are important aspects of food processing from consumer acceptability point of view. Standards have been laid down for type and concentration of food additives.

Course: ETF 3653 Enzyme Technology

Synopsis:

This subject covers the fundamental of enzymes classifications, immobilization, kinetics, sources, preparation and productions, safety and regulatory aspects as well as application of enzymes in food industries. Biosensors, recent technology and future prospects of enzymes technology will also be covered.

Course: ETF 3663 Starch Technology

Synopsis:

This module covers the major cereal-based industries in Malaysia, as well as the fundamental structure, chemistry, functional properties of starches and their utilization in food applications. The module also reviews the various types of cereals that produce starches and factors that should be considered when choosing and using starches. The application of starches in many food systems is presented in depth along with some practical sessions. The most current starches and new market opportunities will be discussed.