

**ملخص توصيفات المقررات باللغة الإنجليزية - بكلية العلوم : علوم الغذاء والتغذية**

S	Course Code	level	Course Name	Course Description
1	BIOB2106-3	3	Microbiology	Principals of Microbiology--Historical review of the pioneer microbiologist –Development of microbiology –Classification of microorganisms (Bacteria, Fungi, Microalgae, Parasites, in addition to Viruses) – Chemistry of microbial cell - Structure of microbial Cell – Microbial genetics – Nutrition and microbial metabolism – Growth and reproduction – Microorganisms in medicine, industry, agriculture, environment and biotechnology.
2	BIOB2111-3	3	Physiology	This course will emphasize to acquire an appropriate background about the structure and function of the animal cell, tissue and organs, to acquire an appropriate background about the normal structure and function of the animal body and of each of its major systems also know the normal structure and function of the human body and its major systems.
3	CHEM2109-3	3	Analytical Chemistry	Principles of qualitative and quantitative analysis. Tools of analytical chemistry. Introduction on volumetric analysis- reaction in volumetric analysis- neutralization calibration- precipitation calibration- oxidation and reduction calibration, Chemical calculation in volumetric analysis. Acid-base titration, Precipitate titration, Redox titration, Compleximetric titration, Introduction to separation methods, Gravimetric analysis, methods of spectral analysis based on dispersion of radiation – optical analysis-Introduction to spectroscopic methods of chemical analysis, Introduction to electrochemical analysis. Principles of gas-liquid and high-performance liquid chromatography.
4	FUN2102-3	3	Fundamentals of Food Processing	This course deals with studying the principles of food and milk processing-this course includes studying the physical and chemical properties of raw materials involved in food and milk processing. It also studies the principles of industrial operations and the physical and chemical alterations associating with these operations. Organoleptic evaluation of processed food products.
5	FUN2101-2	3	Fundamentals of Human Nutrition	This course will emphasize fundamental principles in dietary components, macronutrients (carbohydrates, proteins and fats) and micronutrients (vitamins and minerals), water and their characteristics, physiological functions, and metabolism. The role and the influence of nutrients in health promotion and disease prevention will addressed too.
6	BIOZ2203-3	4	Molecular Biology	This course deals with the ultrastructure of the cell- structure and functions of cell organelles including cell membrane and macromolecules-Molecular structure of cell components- molecular structure and function of the genetic material represented by DNA and its replication-transcription of DNA-Protein Synthesis-Discussion of some essential and modern techniques in molecular biology.

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7	CHEM2205-3	4	Organic Chemistry	This course is intended the nomenclature of different organic compounds, list the functional groups in organic compounds, explain the preparation of some organic compounds, memorize the chemical reactions of some organic compounds, recognize the properties of some c organic compounds, explain the reaction mechanism of some organic compounds and recognize the difference between alkane, alkene, alkyne, alkyl, and aryl groups.
8	FUN2203-3	4	Chemistry of Food Components	Recognize the major food components such as water, carbohydrates, fats and proteins – Enzymes applied in food industry- Chemical interaction between food components –Vitamins, minerals – pigments - Colorants – Food preservatives.
9	FUN2202-2	4	Community Nutrition	This course is designed to give knowledge of methods of identifying nutritional problems in society, study programs and food policies, organizations and institutions related to nutrition programs, planning mechanisms to nutrition programs in the community.
10	FUN2201-2	4	Preventive Nutrition	This course is designed to give knowledge of global issues affecting preventive nutrition; cancer prevention; cardiovascular disease prevention; diabetes and obesity; prevention of major disabilities and improvement in health outcomes; optimal pregnancy and infancy outcomes; nutrition transitions around the world.
11	FUN2204-3	4	Food Microbiology	This course deals with studying the nature of microorganisms (bacteria, yeasts, and molds) found in foods-Effects of industrial processing on the microbial load of foods- classification of microorganisms in foods according to their effects: useful for food processing, causing food spoilage, or pathogenic)- principles and types of food spoilage- microbial food poisoning- Microbiology of different food products (vegetables, fruits and cereals- milk and dairy products-meat and meat products- fish- eggs- frozen foods and canned foods).
12	FUN3101-3	5	Cereals and Cereal Products Technology	This course deals with studying the composition of different grains and identification of different operations of grain processing, studying the nutritional value and chemical composition of the flourmills products- Rheological and technological properties of flour and the possibility of using it in different products -Studying the composition of the different types of wheat- Processes of cleaning and milling- Study the flourmills products (bread's, pasta's, cake's and biscuit's industries) - Rice hit-The use of flourmills fibers for the production of special foods.
13	FUN3102-2	5	Food Hygiene and Safety	This course deals with studying the sources of microbial and non-microbial contamination of foods -Factors affecting the microbial growth- food borne illness -Sanitation of food processing and storage buildings- Sanitation of food processing machineries and

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				equipment-Cleaning and sanitation of food processing plants- Personal hygiene of personnel dealing with foods-Pest control- Sanitary disposal of wastes of food processing plants –Hygienic and biosafety measures within the food ( Meat, Vegetables , Milk ...etc.) processing factories.
14	FUN3105-2	5	Therapeutic Nutrition (1)	This decision is designed to provide extensive information on how to assess the nutritional and therapeutic situation for hospital patients in addition to nutrition after surgical operations-the rapporteur focuses on the planning, treatment and follow-up of the patient in the following pathological conditions: gastrointestinal diseases such as stomach, gallbladder, diarrhea, constipation and other diseases of this device.
15	FUN3103-2	5	Food Additives	The course is designed to deliver the knowledge about food additives, classification, functions, EU food categories, toxicology and safety. Different types of food additives (antioxidants, colorants, antimicrobials, emulsifiers, stabilizers, thickeners, nutritional, sweeteners, flavoring, flavor enhancers, pH controller, enzymes, fat substitute, bleaching agents, maturing agents, and starch modifiers).
16	TECH3101-3	5	Genetic Improvement in Plant	This course deals with studying the application of different traditional and modern techniques for creation and characterization of genetic traits of plants- Application of modern techniques of genetic engineering and plant tissue culture for improvement of preferred economic traits (increase of productivity and improvement of nutritional properties of agricultural crops) or exclusion of non-preferred traits
17	FUN3104-3	5	Food Metabolism	Recognize the major classes of food metabolism like carbohydrates metabolism, lipids metabolism, amino acids (protein) metabolism, show the different metabolic pathways of glucose and other small molecules, show the structure and functions of different enzymes responsible about food metabolism, memorize the important and biological effects of different kinds of hormones in metabolic process, list the scientific concepts of roles of some vitamins in the regulation of carbohydrate, lipid, and protein metabolism.
18	FNU3208-3	6	Analytical Food Chemistry	The aim of this course develops the ability to recognize the basic principles and utilize modern analytical techniques employed in food analysis and as well as developing critical and creative thinking to determine the composition and quality of food products and the fundamentals and applications of physical, chemical, and instrumental quantitative techniques to determine the composition and quality of food products.
19	FNU3201-3	6	Food preservation Technologies	This course deals with studying the principles of food preservation- Mechanisms of reduction of the declined nutritional quality properties-Different aspects of post harvesting processes of raw and fresh products and their derivatives-Preparation of raw material for preservation- Assessment of the preserved food quality- Food preservation by heat treatment (sterilization, pasteurization, desiccation, refrigeration and freezing)- Food preservation by radiation- Food preservation by salting- Food preservation by concentration- Food preservation by smoking- Food preservation by canning- Food preservation by preservatives- Food preservation by fermentations-Effect

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				of different preservation procedures on the physical and chemical properties of foods.
20	FNU3202-3	6	Nutrition through the Life Cycle	The aim of this course is nutrition needs throughout stages of the life cycle including pregnancy and lactation, infancy, adolescence, and aging; and the socioeconomic, cultural and psychological influences on food and nutrition behavior.
21	FNU3203-3	6	Fats and Oils Technology	This course is planned to impart the knowledge and different skills about fats and oils technology, sources, classification, extraction methods, physic-chemical characteristics, refining methods, hydrogenation, deterioration and preservation, manufacture of some oil products, essential oils
22	MATH3210-3	6	Biostatistics	This course aims to descriptive Statistics, Quantitative and Qualitative data, Graphic presentation. Measures of central tendency, measures of dispersion. Probability rules, Conditional Probability - specificity, sensitivity and Bayes' rule, Predictive value positive and negative- pdf, Binomial distribution. Poisson distribution. Normal distribution- Sampling for mean and proportion-Confidence intervals of one and two population means and proportions. Tests of Hypothesis about means and proportions and paired data.
23	FNU3204-3	6	Field Training	Internship at the different food processing plants under close technical and academic supervision. The trainee should participate in all the manufacturing procedure, including the quality control practices, internship at the different food service department within specific populations like hospitals and educational institutes under close technical and academic supervision, the trainee should participate in all the processing procedures including the designing nutritional programs, internship at the different laboratories of food and drug authority under close technical and academic supervision and the trainee should participate in performing all available routine and specialized tests in food science and nutrition, and be able to comment and interpret the results.
24	FNU4101-3	7	Food Quality Control	This course deals with studying of different methods of food quality control- recognizing of the local and international quality control systems- recognizing the food-related laws and legalizations-recognizing the local and international food standards- Studying the application of quality control systems within food-producing factories- The significance of the application of quality control systems within food-producing factories-Methods and detection of adulteration- Organoleptic, chemical and microbiological food examination- Organoleptic examination methods and their significance in food evaluation- Hygienic measures in food-producing factories- The quality control systems: International Standards Organization (ISO), Hazard Analysis Critical Control Points (HACCP) and Good manufacturing Practice (GMP).
25	FNU4104-3	7	Fruits and Vegetables Processing Technology	This course is designed to deliver the knowledge and different skills in the fruits and vegetables processing technology- Rheological properties of fruits and vegetables- Nutritional properties of fruits and vegetables- Signs of deterioration and spoilage of fruits and vegetables - postharvest and pre-manufacturing processing - Preparation and processing of fruits and vegetables- Selected fruits and

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				vegetables preservation processes- Undesirable changes in fruits and vegetables- Effects of primary processing on the quality of the products of fruits and vegetables.
26	FNU4102-3	7	Laboratory Techniques in Life Sciences	This course deals with studying of the principles and applications of the laboratory techniques applied in molecular biology and protein chemistry. Basic knowledge of recombinant DNA (rDNA) techniques: isolation of RNA, reverse transcription, PCR, restriction Enzymes and recombining of DNA and synthesis of rDNA and recombinant proteins; Protein purification by liquid chromatography, polyacrylamide gel electrophoresis (PAGE), Western blot analysis, ELISA and protein microarray. Protein structure, function, folding and degradation as well as protein sorting and transport. Implantation of the abovementioned techniques for the detection of authenticity, GM, toxins, microbes and harmful substances in food.
27	FNU4103-2	7	Food Packaging	This course deals with studying the significance of food packaging- Raw materials used for manufacturing of food packages- Properties and conditions of appropriate packaging materials- Packaging Techniques-Methods of food packages sterilization-common artifacts and faults of the food packages materials.
28	FNU4105-2	7	Therapeutic Nutrition-2	The course aims to identify nutrition in some cases of renal failure and dialysis, describe nutrition in cases of liver disease and cancer, recall information on nutrition of Alzheimer's patients, the impact of food on the psychological state, and also plan and prepare meals and fit and fit with bone diseases from fragility and fractures.
29	FNU4203-3	8	Dairy Technology	This course deals with the definition of milk and various dairy products- New manufacturing methods of various dairy products- Application of quality assurance standards and safety of milk and dairy products during manufacturing, transportation, handling and storage.
30	FNU4204-3	8	Meat and Fish Technology	This course aims to study the composition and characteristics of meat, fish and poultry; their processing for the production of different food products- This includes the chemical composition, the fibro-muscular configuration, Rigor Mortis changes, procedures of preparation and processing- Manufacturing of pastrami, Mortadella, Sausage and Burger- canning and methods of preservations.
31	FNU4203-2	8	Recycling of Food Industry Wastes	This course deals with recognition of the wastes found in the food-producing factories and their chemical and microbiological properties and the possibility of their use for production of economically and nutritionally valuable products-Properties and applications of fruits and vegetables industry wastes- Properties and applications of fish industry wastes- Properties and applications of flourmills wastes- Properties and applications of sugar industry wastes- Properties and applications of dairy industry wastes.

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32	FNU4202-3	8	Food Biotechnology	This course deals with studying the physical and chemical properties of foods and their transformability- Applications of biotechnology in food processing- Full-recognition of the so-called genetically modified foods (GMF)- Food additives produced by means of biotechnology- Techniques applied for inspection and detection of GMF- Rules, instructions and legalizations controlling the approval of GMF- Legal, ethical and technical responsibilities of GMF producers- Applications of genetic engineering in recycling of food wastes- Biosafety of GMF.
33	FNU4205-3	8	Graduation Project	This course deals with studying the explain the importance of research for country development, recognize principles of scientific research, solve a problem with scientific thinking, describe how to write and publish a scientific article, understand the ethics and rules of scientific research, choose up to date research points and downloading of multimedia tools explaining the research procedures.