Stat201: Statistics- 3 Credits

Students of Statistics will develop the skills needed to be successful in subsequent courses in college of applied science. These skills will enhance their ability to do research, by introducing the statistical methods of collecting, representing, analyzing data and testing Hypothesis. These statistics also help in a better decision making. Students will continue to use the web-based course supplement to access course material and communicate with classmates and the instructor. They will enhance teamwork and leadership skills by working in groups to achieve the solutions to designate exercises.

SOCI101: Sociology 3 Credits

Sociology is a basic course to educate students about the society, social relationships and different social institutions. This course encourages to look beyond individual problems or accomplishments and to understand the inter connections between people and their surroundings. Topics include in this course: Basic concept and History of sociology, Culture, Family, Marriage, Religion, Population and Deviant behavior.

PHYS101: PHYSICS-1 3 Credits

An understanding of the basic concepts of Physics is fundamental for developing students' understanding of the more applied scientific disciplines such as Chemistry , Biology and other Applied Sciences. Physics 101 is an introductory Physics module focusing on basic principles and concepts in Physics. It is designed for students who will continue their undergraduate degree programs in Engineering and Applied Sciences

PHIL101: Introduction to logic 3 Credits

This basic course is designed to inform students: introduction to the meaning of philosophy and its cultural significance; major themes in philosophy, with examples; Western classification of philosophical eras and their neglect of Islam. Comparative historical and analytical approaches are used to stimulate the students' critical faculties. Emphasis will be given to understand the basics of logic which studies reasoning and arguments systematically, and how to formulate and evaluate natural language arguments. The goal is to provide students with the skills for producing formally valid arguments, using different methods of inference. Topics will also include sentential logic, logic of categorical statements and fallacies.

MATH101: Calculus 1 3 Credits

The course will introduce students to the concepts of Limits, Continuity, Derivatives, and Application of derivatives, Asymptotes, Optimization problems and integrations. It will develop mathematical critical thinking and problem-solving skills

ISLAM101: Islamic Civilization 3 Credits

This course aims to introduce students to the concept of civilization, and the composition and evolution factors. And introduce them to the most important political and administrative systems and economic

and social development in the Islamic civilization, and aims to the statement of contributions to Islamic civilization in other civilizations, especially the European civilization, also aims to publicize the importance of the site Oman and how to interact with other previous civilizations in different eras, and the factors that allowed it to be a center of cultural divisions history.

FSHNN482: Emerging Issues in Food Science and Nutrition 2 Credits

In today's modern world, the most reliable guide to predicting future developments in health is a careful examination of current trends in society and progress in research. Emerging health issues are those that pose either a threat or relief from threat to the overall health of the population. This subject explores emerging issues that concern public health today.

FSHNN481: Medical Nutrition Therapy II (481) 3 Credits

The course is offered to students of the Food Science and Human Nutrition Program of the College of Applied Sciences (CAS). It is designed to examine the implementation of diet therapy and nutrition support in the treatment and management of acute diseases and critical illness such as metabolic stress, burns, surgery & brain injury, sepsis, COPD and cancer. It also describes the scientific basis behind using enteral and parenteral nutrition and immune-nutrients to modulate the immune response and improve clinical outcomes in cancer, surgical and critically ill patients. The practical part of the course includes hospital visits and some class-case studies to teach the student how to obtain and analyze the required information from the patients' medical records and design a diet management plan accordingly.

FSHN N472: Dietetic Counseling for Chronic Diseases 3 Credits

Application of counseling and learning theories with individuals and groups in clinical and community settings. Includes discussion and practice in interviewing, counseling, dietary assessment methodology, learning activities, evaluation and documentation. This class is designed to expose you to principles in nutrition counseling.

FSHNN462: Nutrition and Metabolism 3 Credits

The course content focuses on the metabolism, requirements, deficiencies and excesses of nutrients. Essential macro and micronutrients will be covered with the greatest emphasis on macronutrients. Nutrient utilization will be traced from the food source to digestion and absorption, transport, storage, and excretion. Each metabolic pathway dependent on specific nutrients will be evaluated with an emphasis on how the macronutrients facilitate specific biochemical functions. The basis of how nutrient deficiencies and excesses result in metabolic abnormalities with functional and potentially toxic consequences will be detailed

FSHN N461: Cultural Foods 3 Credits

Today's social life encompasses people from diverse countries and origin. Therefore it is important to understand the cultural differences in order to provide the best care to your social network regardless of race, origin, gender, age, religion, sexual orientation, social class, economic situation, and/or disability.

FSHN N371: Institutional food system management 3 Credits

To provide nutritional sciences students with over all view of institutional food management , including cycle menus , delivery systems , meeting special diet needs ,general procurement of food and supplies and providing for quality improvement in the facility .

FSHN N370: Assessment of Nutritional Status 3 Credits

Nutritional assessment is an essential component of applied nutritional sciences that comprehensively studies various methods employed in assessing the nutritional status of individuals and populations. These methods include measuring dietary intakes and anthropometry, estimating biochemical markers of nutrient adequacy or deficiency and clinical examination of individuals in order to determine their nutritional health. Nutritional assessment forms the back bone of nutritional planning and care of patients. Nutrition screening of populations is a prerequisite for formulation of food policies by the governments

FSHN N362: Nutrition in the Lifecycle 3 Credits

Nutritional sciences have attained enormous importance due to advances in food production technology on one hand and relation between diet and health on the other. Role of diet in incidence of so-called diseases of civilization has put further emphasis on studying nutritional sciences as part of the strategy to prevent or reduce the incidence of these disorders and as a tool to decrease the burden on national economies by improving health of the communities. Maintaining a healthy nutritional status throughout life cycle is important in attaining the goal of a healthy community which is productive in terms of national economy and at the same time puts lesser burden on national exchequer

FSHN N261: Principals of Food Preparation 3 Credits

Site selection, engineering and equipment .Basic food preparations, including station assignments , theory , personnel organization , service and storage ; Menu design for food operations ;emphasis on creating balanced menus and nutritionally proportioned ; methods of establishing menu selection , truth in menu regulations and menu engineering as a marketing and merchandising tool . Dining room, school and hospitals operation; a la carte service techniques; coordination of functions and duties; dining room sanitation.

FSHNN162: Introduction To Human Nutrition 3 Credits

This course was designed to familiarize student about human nutrition including digestion and absorption of nutrients, types of nutrients, sources of nutrients, requirements and diseases caused by nutrients deficiency

FSHNF414: Food Engineering 3 Credits

This course provides practical knowledge on modern engineering solutions for food processing and preservation, safety and convenience as well as to maximize the benefits to human nutrition by applying food process engineering principles including; hydronic systems, refrigeration systems, cold storage, optimum cold storage conditions to retain essential nutrients, psychrometics, heat loads, heat sterilization systems, boilers and heat exchange systems, compressed air and vacuum systems, corrosion principles, material selection, food processing equipment, programmable controllers, Newtonian and non-Newtonian fluids, food rheology, process mass and energy balances, food flavour extraction techniques and safety associated with food engineering systems.

FSHN F412: Food Processing and Packaging 3 Credits

This course provides students with the scientific underpinnings of the manufacturing processing various foods such as drying, canning, refrigeration, freezing and others, to produce high quality and nutritional value of food products. This course also Provides knowledge and skills in the handling and packaging of foods, and to develop values about the safety and environmental impact of packaging

FSHN F381: FOOD ANALYSIS LAB 1 Credit

The Laboratory course in Food Analysis includes: Basic principles of analytical chemistry & analysis of major and minor food components (Water, Carbohydrates (CHO), Fats & Lipids, Proteins, Vitamins, Minerals (micro and macro elements). It discusses basic principles of analytical chemistry by using different instrumentation techniques in food analysis. It includes: basic concepts of Food samples and sampling; introduction to spectrum, Beer- Lambert's Law, absorbance, and polarimeter; basic principles of spectroscopy (UV-Vis & Atomic absorption and emission spectroscopy); basics of chromatography; Adsorption chromatography; Partition chromatography (TLC); Ion-exchange chromatography; Size exclusion chromatography; Affinity chromatography, Gas chromatography (GC) & High performance liquid chromatography (HPLC). It will also cover determination of accuracy & precision by evaluation of analytical data by statistical tools. This course is designed for students who will not only require training towards their diploma in Food Science & Human Nutrition (FSHN) but would continue their undergraduate degree program.

FSHN F313: FOOD MICROBIOLOGY 3 Credits

Food is necessary for human survival and it's shelf-life plays an enormous role in the global economy and sustenance. Although, microbes play an essential role in food preservation since time immemorial and

more recently in food biotechnology, however, their unwanted propagation and presence in food poses an acute & chronic risk to human health with both imperative aspect needs to be considered as food degradation reactions continues in presence of microorganisms. Food Microbiology is a major course in Food Science & Human Nutrition undergraduate curriculum at ASU and has been designed to give students an understanding of the role of microorganisms in food processing and preservation; the relationship of microorganisms to food safety, food spoilage, food-borne illness, i.e., food infections or food intoxication, extrinsic & intrinsic factors related to food and its quality, along with food fermentation; food biotechnology; hygienic production of food; the impact of molecular mechanisms of infectious microbes and their role in human health.

FSHN F311: FOOD ANALYSIS 3 Credits

Food is a complex mixture of chemical components that not only play a vital role on sensory (taste and aroma) and functional properties of food but also affect the nutritional and food safety aspects of food. In order to detect, identify and quantify such food components, this course of food analysis has been designed to encompass the chemical analysis of food beside physical analysis (rheological properties). Chemical food analysis also forms an important part of quality control/assurance in the food industry, and it is important that a broad knowledge of chemical analysis methods applicable to the food matrix is gained. Therefore, this course involves the application of various chemical analytical methods and techniques to determine such properties with the aid of instrumentation with the application of established standard methods, i.e., AOAC methods, for the determination of levels of food components with emphasis on nutritional and safety concerns. In summary, this course involves studies of the chemistry of food components with respect to their identification and quantification using classical and modern instrumental analytical techniques.

FSHN211: Food Sanitation 3 Credits

Food-borne illness account for several hundred thousands of hospitalizations and several thousand deaths, globally. Foodborne illnesses result due either through food infection or food intoxication. Cases of food-borne illnesses are underestimated due the lack of surveillance and reporting to the health-care facilities. However, in order to reduce such incidence, it is essential to understand the characteristics of different physical, chemical and biological hazards and their common sources. This course has been designed to introduce the aspects of food contamination, food hygiene and handling, food sanitation and safety issues and practices, involved in the food preparation process. Prevention of all types of Food contamination and food safety management system, i.e., Hazard Analysis Critical Control Points (HACCP) is emphasized. Food Safety Management helps safeguard quality and safety throughout the whole food supply chain including raw and semi-manufactured foodstuffs and final products in all principal food segments. Establishing a food safety management system and getting it certified is an important step in ensuring control over your supply chain. HACCP can be used in restaurants, school food service and other sites to keep food as safe as possible. Other related aspects include, physical, chemical and microbiological safety of food in Supply chain, and retail foods industries is presented to the students.

FSHN F111: Introduction to Food Science 3 Credits

This course introduces students to important food science concepts such as chemical, physical and microbiological nature of food. Further, students will learn how these factors are employed to produce safe, nutritious and high quality food. This course begins with an overview of food science, describes the interdisciplinary nature of the field, and presents avenues of advanced study and career opportunities in the field. Introduction about key food groups and composition and the functional properties of the major food components. It includes an outline of food additives, nutrition labeling, food law, food engineering and food regulation. It also covers introductory understanding of processing methods, food commodities, microbiology and fermentation, food handling and safety, food contamination and HACCP principles.

FSHNN471: Community Nutrition 3 Credits

This course will broaden knowledge and provide skills relevant to community nutrition. They will learn how to conduct need assessment of community, measurement of nutritional and health status, food and nutrition policies, as well as community programs for mother ,infants and children. The concepts and skills needed for the delivery of community nutrition services will be applied to program planning, interventions and evaluation of community based nutrition program

FSHNN262: Nutritional Biochemistry 3 Credits

The course provides basic information about nutrients along with their function in metabolism and link this information to the role of nutrition in long-term health and prevention of disease. It will provide information about the biochemical mechanisms associated with digestion and absorption of macro, micronutrients. The course will also deal with chemistry, biochemistry of both fat and water soluble vitamins, role of macro minerals and trace elements. Submission of a well written review/report for assessment is compulsory

FSHNF480: NEW FOOD PRODUCT DEVELOPMENT 3 Credits

This course is developed to equip students with a basic know how of the food product development process in food processing industry. By use of lectures, and practical based formulation activities, students will learn how to initiate, organize, and conduct a product development project. This course will also provide basic understanding about sensory evaluation and food product development and to strengthen the students inner abilities to develop food products and evaluate them organoleptic ally. This course will cover food product related projects, project planning, recipe development, quality control and how to select type of food packaging for developed products. . Students will be able to develop their ability to develop sensory evaluation Performa for different food products and conduct sensory analysis.

FSHNF416: Meat and Poultry Technology 3 Credits

"Slaughtering process: pre-slaughtering care and handling of meat animals, stunning methods, bleeding methods – modern, Halal & Islamic, Kosher, Jhatka, others. Meat carcass: dressing, post-mortem

changes, carcass evaluation. Factors affecting quality of meat. Preservation of beef and lamb: chilling, freezing, canning, dehydration, curing, salting, smoking, irradiation. Primary poultry processing: live-bird supply, stunning, slaughtering, scalding, plucking, evisceration, giblet harvesting, whole-carcass packaging. Portioning and deboning operations. Preservation: Canning, freezing, drying, chemical treatments, irradiation. Packaging: materials, selection. Quality assurance. carcass evaluation. Factors affecting quality of meat. Preservation of beef and lamb: chilling, freezing, canning, dehydration, curing, salting, smoking, irradiation.Primary poultry processing: live-bird supply, stunning, slaughtering, scalding, plucking, evisceration, giblet harvesting, whole-carcass packaging. Portioning and deboning operations. Preservation: Canning, freezing, drying, chemical treatments, irradiation. Packaging: materials, selection. Quality assurance."

FSHN F411: Food Chemistry 3 Credits

The course applies basic scientific principles to food systems and practical applications. Chemical/biochemical reactions of carbohydrates, lipids, proteins, and other constituents in fresh and processed foods are discussed with respect to food quality. Reaction conditions and processes that affect color, flavor, texture, nutrition, and safety of food are emphasized. Students are given a role in the learning experience through group discussions and independent projects related to real world problems associated with the food industry

FSHN470: Internship 3 Credits

Students will participate in 126 hours (42 hours per registered credit hour) for 6 weeks + 2 Weeks for Draft Preparation & Presentation) of industrial or fieldwork experience to gain skills in the areas of Food Chemistry, Food Microbiology, Food Engineering, Food Safety and Sanitation, Food Service Management, Human nutrition, Nutritional Assessment, Epidemiological data Sampling in Nutritional status and other applied nutrition field studies. Students will demonstrate their understanding of food science and human nutrition in an industrial, clinical, community and/or laboratory setting and the concepts and skills related to successful learning of teamwork and professional development.

FSHNF413: Food Law & Regulation 3 Credits

This course will provide comprehensive information of laws and government regulations in the food industry, as well as the requirements and expectations of customers and consumers. Food laws include: food this course will provide to the basic need for quality and quality assurance in food production process and food marketing. The quality system & standards will be also discussed in this coursesafety; food contamination i.e. microbial, chemical, plant and animal adulterants. Routes of contamination of major food groups, analysis and control.

FSHNF311: FOOD ANALYSIS 2 Credits

Food is a complex mixture of chemical components. In order to detect, identify and quantify food components, this course of food analysis has been designed. This course encompasses the chemical

analysis of food beside physical analysis (rheological properties). Chemical food analysis also forms an important part of quality control/assurance in the food industry, and it is important that a broad knowledge of chemical analysis methods applicable to the food matrix is gained. Therefore, this course involves the application of various chemical analytical methods and techniques to determine such properties with the aid of instrumentation with the application of established standard methods, i.e., AOAC methods, for the determination of levels of food components with emphasis on nutritional and safety concerns. In summary, this course involves studies of the chemistry of food components with respect to their identification and quantification using classical and modern instrumental analytical techniques. It is designed for training students towards their diploma in Food Science & Human Nutrition (FSHN) and would help them to continue to their undergraduate degree program

ENGL102: ENGLISH COMMUNICATION SKILLS 2 3 Credits

It is designed to support college students in their English Skills and help prepare them to cope with their academic studies, especially when writing essays. In addition, students will further enhance their ability to discuss/debate or argue their opinions on a topic. Continuous assessment of the learning outcomes will be employed through quizzes, portfolios, participation, presentations and essays and there is also a mid and final exam

ENGL101: English Communication Skills 1 3 Credits

It is designed to support college students in their English Skills and help prepare them to cope with their academic studies, especially when writing essays. In addition, students will further enhance their ability to discuss/debate or argue their opinions on a topic. Continuous assessment of the learning outcomes will be employed through quizzes, portfolios, participation, presentations and essays and there is also a mid and final exam

CHEM 281: ORGANIC CHEMISTRY Lab 1 Credit

This is a one-semester laboratory course intended as the co-requisite for Organic Chemistry 201 theory course, and is an introductory lab course focusing on basic principles and concepts in organic chemistry. In this course, students will investigate various organic reactions and a wide range of laboratory techniques and instruments. Topics include laboratory techniques, melting points, recrystallization, extraction, isolation of natural products (e.g. caffeine), distillation, test of functional groups, qualitative analysis of carbohydrates, proteins and fats, preparation of aspirin, soap, cyclohexene, cyclohexanone, benzoic acid, nitration of methyl benzoate, etc

CHEM 201: ORGANIC CHEMISTRY 3 Credits

This course introduces basic concepts of Organic Chemistry to students who have completed one semester course on Chemistry I. Organic Chemistry course deals with topics such as classification and nomenclature of organic compounds, functional groups, isomerism, structure, properties and bonding of organic molecules, chemical reactions and reaction intermediates, aromatic compounds, polymers, and

biomolecules such as carbohydrates, proteins, fats, etc. Upon completion, students should be able to demonstrate an understanding of the fundamental concepts in Organic Chemistry needed for the understanding of higher courses

CHEM181: CHEMISTRY-1Lab 1 Credit

This is a one-semester laboratory course intended as the companion course for Chemistry 101 theory and is an introductory lab course focusing on basic principles and concepts in Chemistry. It provides the basis for further studies in physical and biological sciences, environmental sciences, various engineering disciplines, applied sciences such as food sciences and nutrition, geology and metallurgy, pharmaceuticals, interdisciplinary areas like nano science and technology etc. Topics include laboratory safety, chemical measurements, significant figures, laboratory techniques, naming and chemical formulae of compounds, chemical reactions - acid –base titrations and cation & anion analysis, stoichiometry problems, calorimetric experiments for heat of reactions etc

CHEM182: CHEMISTRY-2 Lab 1 Credit

This is a one-semester laboratory course intended as the companion course for Chemistry 102 theory and is a lab course focusing on principles and concepts in Chemistry for students who have completed Chemistry 1. It provides the basis for further studies in physical and biological sciences, environmental sciences, various engineering disciplines, applied sciences such as food sciences and nutrition, pharmaceuticals, interdisciplinary areas like nano science and technology etc. Topics include laboratory safety, bonding in molecules, experiments on solutions, solubility and factors affecting solubility, colligative properties, colloids and emulsions, Chemical kinetics, Chemical equilibrium, pH and acid –base properties, buffer and salt hydrolysis, chromatography etc.

CHEM101: CHEMISTRY-1 3 Credits

This is an introductory Chemistry course focusing on the basic chemical principles and concepts that are needed for the understanding of Chemistry for students who have already cleared Chemistry-I. The course covers introductory concepts of covalent bonding including Valence Bond and Molecular Orbital theories, Introductory chemical kinetics and Chemical equilibria, Solutions and colloids, colligative properties, Solid state Chemistry , Acids and bases, basic Electrochemistry, Free energy and entropy concepts, and basics of Analytical Chemistry

BIOL 201: Microbiology 3 Credits

Microbiology is the study of invisible, small microorganisms (characteristics, advantages and disadvantages) that form part of our world. These microorganisms include bacteria, viruses, fungi, algae and protozoa. Microbiology has been and will continue to be one of the pillars in the creation of opportunities for human progress and for the advancement of new knowledge to improve the quality of life. It has numerous applications in health and disease and in the development of new technologies in the various fields of microbiology like food and industrial microbiology, immunology, medical mycology,

diagnostic microbiology, etc. This course is intended to prepare students for various careers and opportunities in the different fields of microbiology

BIOL281: Microbiology Laboratory 1 Credit

This course seeks to provide students with an understanding of important scientific concepts, laboratory techniques, an ability to think critically, and an understanding of the importance of microbiology to society in general. This course prepares students to pursue advanced and professional degrees successfully and enter the workforce with the tools to continue life-long advancement, and to contribute to our ever-expanding understanding of biological processes. Numerous laboratory methods will be utilized in demonstrations and student experiments. Students will exercise critical thinking for interpreting laboratory results

BIOL101: Biology I 3 Credits

This course provides an opportunity to explore the nature of cells from prokaryote to eukaryotes. Biology is the study of different life forms and their interconnectedness with all other life forms. It provides opportunities to learn about the processes of all living things. Biologists contribute to medical and biotechnological advances. By studying Biology, students become more aware of ecological issues and develop more sustainable ways of using our natural resources e.g. soil, land, or water. The study of biology forms a firm foundation for all the other related courses including Food Science, Human Nutrition, Biomedical Science etc. that are relevant to the students of the College of Applied Science

BIOL181: Biology 1 Lab 1 Credit

This course provides an opportunity to explore the nature of cells, from prokaryote to eukaryotes. Biology 1 Laboratory offers a variety of laboratory exercises on current concepts in cell and molecular biology using research-grade scientific equipment. Different teaching techniques, materials and instruments will be employed to provoke student's interest to enrich their understanding about the basic concepts and principles in cell and molecular biology. Numerous laboratory methods will be utilized in demonstrations and student experiments. Students will exercise critical thinking for interpreting laboratory results.

Arab 101: Arabic 3 Credits

This course aims to provide students skills of literary appreciation, skills of some types of expression: written, oral, practical and creative. At the same time, it focuses on two important language skills: reading and listening, with brief review for foundational Grammars and spelling roles, especially which are related to practical side of language using. To achieve that mission, students will study many texts from literature of some famous Arab poets and writers from many periods: old, medium, modern

APSC310: Human Anatomy and Physiology 3 Credits

The course is designed to provide the students applied scientific disciplines with knowledge about the normal function and mechanism of various physiological and systems basis on the anatomical and histological correlation, including: cells physiology and body fluid, membranes physiology, nerves and muscles, contractions of skeletal muscles, excitation contraction coupling, Neuromuscular transmission, Autonomic nervous system, Sensory nervous system, Cardiovascular system, Digestive system, Respiratory system, Reproductive system, and finally Endocrine system and Vitamins

APSC381: Human Anatomy and Physiology Lab 1 Credit

The course is designed to provide the students applied scientific disciplines with knowledge about the normal function and mechanism of various physiological and systems basis on the anatomical and histological correlation, including: cells physiology and body fluid, membranes physiology, nerves and muscles, contractions of skeletal muscles, excitation contraction coupling, Neuromuscular transmission, Autonomic nervous system, Sensory nervous system, Cardiovascular system, Digestive system, Respiratory system and finally Endocrine system

APSC201: Management and Business skills 3 Credits

Developing Management Skills is a theory-based, though highly practical course on developing management and leadership skills individually, interpersonally and collectively within teams and the broader organizational culture as a whole. this course is designed to enable students to manage their own life and relationships with others, to develop themselves as leaders within their organizations and to discover first-hand their Passion for personal and professional development. Management and leadership development concepts used in the course will be immediately applicable for students, but also set the stage for life long professional development. This course will focus primarily on your personal quest to thrive, by examining your own leadership strengths (and limitations), and professional experiences that enhance your capacity to lead and manage authentically.