The School of Pharmacy and medical sciences
Major: Nutrition and dietetics

Course Description

Core Requirements			
Code	**Title**	**Credit**	**Course Description**
BIOL125	Basic Biology	3	An introductory level course to Biology through living organisms & cell biology.
BIOL200	General Biology	3	An introductory level course to energy transfer through living organisms, cell biology, membrane transportations, genetics, human physiology, evolution, and morphology and physiology of organ systems, understanding diversity with emphasis on the animal kingdom and evolution. Protozoans are also studied. Co-requisite: BIOL200L
BIOL200L	General Biology Lab	1	This lab course introduces principles of microscopy with emphasis on viewing different animal tissues and cells. A detailed study of the animal kingdom including evolution, classification, and anatomical morphology. Co-requisites: BIOL 200 Co-requisite: BIOL200
CHEM125	Basic Chemistry	3	Basic principles of chemistry & molecular structure and bonding.
CHEM200	General chemistry	3	Basic principles of chemistry, electronic structure of the atom, chemical periodicity, molecular structure and bonding, acids and bases and the states of matter, rates of chemical reactions, and chemical equilibrium are covered in this course. Co-requisite: CHEM200L
CHEM200L	General chemistry Lab	1	The laboratory work involves hands-on experience with chemical systems. Experiments include basic calorimetry, a limited qualitative and quantitative analysis scheme, properties of gases, acid-base and redox titrations. Co-requisite: CHEM200
CHEM255	Basic organic chemistry	3	This course is designed for non-majors. It provide an introduction to the structure, isomerism and chemistry of alkanes, alkenes and some representative functional groups such as alcohols, ethers, aldehydes, ketones, carboxylic acids, amines and amides.. Prerequisite: CHEM200 Co-requisite: CHEM255L
CHEM255L	Basic organic chemistry lab	1	Practical for organic chemistry experiments including acids alkalis…
CLNC400	Clinic training	1	Self-study modules, case studies, reports & discussions are covered in this lab. Co-requisite(s): NUTR 480
FDSC300	Technology of food products	3	Introduction to the different technologies involved in food production from raw materials to the end product. Application of biotechnology to the production of raw materials, as well as to the production, processing, storage, packaging, preparation of food products is briefly discussed. Different chemical, microbiological, and physical changes that occur to food are introduced. Prerequisites: ENGL 150 Prerequisite: ELC103
FDSC345	Food microbiology	3	Pathogenic and spoilage Microorganisms in foods and their control. Influence of food system on growth and survival of microorganisms. Principles of culturing,

			isolation, enumeration, and identification of different microbes. Effect of microbes and their enzymes on food fermentation and spoilage. Control of food spoilage and poisoning. Prerequisite: BIOL 200 Prerequisite: BIOL200 Co-requisite: FDSC345L
FDSC345L	Food microbiology Lab	1	Use of sterile techniques, media preparation, identification, isolation of spoilage and pathogenic bacteria in food are covered. Co-requisite(s): FDSC 345 Prerequisite: BIOL200 Co-requisite: FDSC345
FDSC370	Food Chemistry	3	Chemical composition of food. Structure and physical properties of food component, including water, carbohydrates, protein, lipids other nutrients, and food additives. Chemistry of changes occurring during processing, storage, and utilization. Prerequisites: BIOC 300 Prerequisite: CHEM255 Co-requisite: FDSC370L
FDSC370L	Food Chemistry lab	1	The course will cover the various chemical and analytical techniques used in determination of food composition as well as detection of adulteration. Co-requisite: FDSC370
MATH245	Statistics for health sciences	3	General introduction to statistical methods used in the health, biological, biomedical sciences, pharmacy and medical sciences. Topics include research methods and design, descriptive statistics, performance characteristics of diagnostic tests, graphical methods, probability, estimation, hypothesis testing, p-values, regression and correlation, and clinical trials. Prerequisite: ENGL 150 Co-requisite: PHAR300
NUTR250	Basic Nutrition	3	The course will introduce the students to nutrients including their food sources, digestion, absorption and metabolism, functions and requirements in humans.
NUTR295	Basic Human Physiology	3	Study of the physiological function of the various organ systems in the Human body including respiratory, digestive, endocrine, skeletal, nervous, cardiovascular, urinary system and fluid homeostasis. Prerequisite: BIOL200 Co-requisite: NUTR295L
NUTR295L	Basic Human Physiology lab	1	The course will involve a series of experiments to demonstrate physiological function of the various organ system on the Human body Prerequisite: BIOL200 / Co-requisite: NUTR295
NUTR310	Biochemistry for nutrition	4	The course will cover the various metabolic pathways of nutrient metabolism including Dietary fats, Proteins, Carbohydrates as well as that vitamins and Minerals. Prerequisite: BIOL200 & CHEM255
NUTR460	Sport Nutrition	3	This course introduces the student to the physiology of exercise and its relation to nutrition and health. It discusses the different nutritional regimens used by athletes and individuals who exercise. It also discusses the requirements and nutritional needs for all types of physical activity as well as all types of athletes. This course touches upon the macronutrient as well as micronutrient needs of athletes. It also goes into detail about ergogenic aids and dietary supplements, along with sports drinks. The course also discusses nutrition and exercise during different stages of the life span. It also touches upon some of the important nutrition related diseases and physical activity as therapeutic management.
NUTR465	Nutrient- drug interaction	3	The course will introduce the students to the interactions between food and certain drugs taken for diseases throughout life cycle.

Major Requirements			
Code	**Title**	**Credit**	Course Description
FDSC420	Food processing	**3**	Industrial methods to prepare and preserve food are studied. It provides the students with different methods for food preservation and technology to improve chemical and physical properties of raw food. The effect of food processing on nutritional value, microbiological safety, chemical and physical qualities of food is discussed. It includes traditional basic food technology (drying, fermentation and pickling), thermal treatments (pasteurization, sterilization, canning, cooling, freezing, and dehydration), irradiation, and microwave technology. Field trips to food plants to see the different procedures are recommended. Prerequisites: FDSC 300, FDSC370 Prerequisite: FDSC300 & FDSC370 Co-requisite: FDSC420L
FDSC420L	Food processing lab	1	Laboratory Exercises in food preservation and processing. Co-requisite: FDSC 420 Co-requisite: FDSC420
FDSC460	Food service management	**3**	It discusses techniques of management of functional operation of food service: Purchasing, budgets, and control management. It will focus on the development of small and large scale cooking skills, menu planning and standard recipe manipulation in keeping with dietary modifications. It will also develop the necessary skills and knowledge base to assist in and manage the provision of meals via an institutional food service. Aspects of organizational design, leadership, motivation, negotiation, resource management, marketing, production, safety and sanitation issues are discussed. Prerequisites: Management of organizations (Principles of management, introduction to management). Prerequisite: NUTR250, NUTR300
NUTR300	Human Nutrition	4	Sources and roles of nutrients that are essential for humans are examined with emphasis on structure, function metabolism and factors affecting utilization. Effect of nutrients on biochemical process and symptoms of deficiency and excess. Prerequisites: NUTR 250 Prerequisite: NUTR295
NUTR350	Nutritional assessment and counseling	3	Provides hands on experience in anthropometric, biochemical, and dietary nutrition assessment techniques of individuals. Laboratory exercises include the measurement of body composition, use of food composition tables, and classification of nutritional status. Prerequisite: NUTR300
NUTR360	Pathological basis for diseases.	3	The course will focus on human diseases relevant to dietetics professionals. The focus areas are cardiovascular disease, obesity and related metabolic disorders, gastrointestinal and liver diseases, renal diseases, food allergies and other chronic diseases as well as nutrient deficiencies and toxicities. The content will address the etiology, pathogenesis, pathophysiologic effects of risk factors and morphologic changes resulting from the disease, and their clinical consequences. The overall learning objective is to provide students with a general understanding of the pathophysiologic bases for diseases and potential treatment
NUTR400	Nutrition through life span	**3**	Role of nutrients and diets in growth, development, maturation, and aging throughout the state of life from pre-conception through old age. Nutrients requirements throughout the different age groups are discussed. Prerequisites:

			NUTR 300 Prerequisite: NUTR300
NUTR410	Therapeutic Nutrition	3	The study of the role of nutritional therapy in the prevention and care of acute and chronic illness is discussed. Topics covered include: Nutritional assessment, nutritional pharmacology starvation, infection, trauma, cancer, diabetes mellitus, and renal, cardiovascular, pulmonary, skeletal, neurological, liver, and gastrointestinal disorders. Prerequisite: NUTR360, NUTR 350 Prerequisite: NUTR350 Co- requisite: NUTR410L
NUTR410L	Therapeutic nutrition lab	1	Self-study modules, case studies, reports & discussions are covered in this lab. Prerequisite: NUTR350 Co- requisite: NUTR410
NUTR440	Obesity and regulation of body weight	3	This course is a multidisciplinary discussion of the causes, effects, and treatments of human obesity. Topics include the biopsychology of eating behavior, the genetics of obesity, the role of activity and energy metabolism, the psychosocial determinants of obesity, anorexia nervosa, Bulimia, therapy and its effectiveness, and social discrimination.
NUTR450	Community Nutrition	3	Application of the science of nutrition to the population benefit. It promotes good health through nutrition and prevention of diet-related illness in communities through application of nutrition principles to the planning, funding, implementation, monitoring and evaluation of community nutrition programs and activities. Practical experience with community nutrition programs is recommended. Prerequisite: NUTR 300 Prerequisite: NUTR300
NUTR475	Inborn errors of metabolism	3	Deals with congenital defects that require special diet planning and manipulation. Metabolic pathways and food chemical composition in relation to the inborn errors are discussed. Prerequisite: Senior Standing Prerequisite: NUTR310 Co-requisite: NUTR475L
NUTR475L	Inborn errors of metabolism lab	1	The course will involve a series of case studies covering the various metabolic disorders covered in NUTR 475 course. Co-requisite: NUTR475
NUTR480	Tutorial in nutrition	2	This course merges the pathophysiology of disease with nutritional sciences. The student will relate disease to nutrition, and therefore will know the appropriate nutritional care provided for specific cases. It teach the student to manage different diseases through nutrition therapy.
NUTR490	Nutrition seminar	1	This course allows the student to learn how to give a scientific talk to a knowledgeable audience. The student must present a self-selected recent nutrition/food science topic and prepare a scientific presentation and report. The audience will participate actively in the presentation by asking questions and pointing out strengths and limitations of the topic at hand. This course also allows the students to learn about the most recent advances and topics in the nutrition and food science field.
NUTR495	Nutrition senior project	3	The main purpose of the project is to demonstrate the student's ability to make independent use of information and training and to finish objective evidence of constructive powers in a chosen field. Students must present a thesis that must show familiarity with previous work in the field and must demonstrate ability to carry out research and to discuss results and conclusions.
NUTR500	Clinical training and practice I	3	Clinical Training & Practice I course is supervised educational training program designed for the Nutrition & Dietetics student to prepare them to achieve basic

			level of competencies in community nutrition care, management of food services systems. This training course will introduce the philosophy and practice of basic principle of Nutrition Care Process including nutritional assessment, diagnosis, and intervention. Monitoring, and evaluation. Under nutritionist supervision and through 12 weeks each student will conduct interdisciplinary rotation in hospitals, Nutrition Clinic, Primary Care facility, food manufacture, and Food Service System. During this training course student will learn and practice how to design and provide nutrition care support plan for people with various culture and through different stages of life span, regulation of body weight, diet planning for athlete's people. Part of this training will emphasize on regulation and coordination of nutrition care service, management of food service system, and assessment of food safety and HACCP in food factories.
NUTR550	Clinical training and practice II	3	Clinical Training & Practice II is educational Supervised training education program designed for the Nutrition & Dietetics students to acquire basic and advance skills in the field of therapeutic nutrition care for patient with selected medical conditions and to make decisions based on professional knowledge and judgment. In this training course each student will learn and practice to prepare evidence-based Medical Nutrition Therapy (MNT) plan, to choose and apply appropriate feeding route and formula based on patient status and medical case and managing food-drug interaction. During 12 weeks and under nutritionist supervision each student will conduct several rotations within hospital wards in which they will learn to design and apply individualized Medical Nutrition Therapy for patient in Intensive Care Unit, Cardiology, Endocrinology, Nephrology, Gastrointestinal, Respiratory, Surgery, Burn, Neurology, and Oncology wards in the hospital , with emphasis on providing diet consultation, lifestyle modification for patient with common chronic diseases and providing advices on preventive foods and nutrient for people at risk of specific diseases.
General Education Requirements			
Code	**Title**	**Credit**	**Course Description**
ARAB200	Arabic Language and Literature	3	This course is a comprehensive review of Arabic Grammar, Syntax, major literature and poetry styles, formal and business letters.
COMM105	Essentials of Mass Communications	3	The course is designed to improve the communication skills of the student. Topics covered are: group communication, organizational communication, cross culture and leadership communication and communication ethics. this course enhances the public speaking and presentation skills
CSCI100	Basic Computing Skills	3	Learn basic computer skills with topics including hardware, application and system software. The course aims at making students competent in computer-related skills. It is supposed to develop basic computer knowledge by providing an overview of the computer hardware and basic components of the computer such as inputs, outputs and storages as well as the differences between the operating systems and application programs. There is an interest in this course in making the students competent in Internet and its uses too. This course also provides a practice on common software applications such as MS-Word, MS-PowerPoint and internet/E-mail technology using MS-Outlook.
CSCI200	Introduction to Computers	3	Learn advanced computer concepts with topics including digital security, networking, communications, operating systems, database management, programming languages, information systems development and career opportunities in computer field and computer trends. This course also provides

			a hands-on practice on common software applications such as, spreadsheet applications (MS-Excel), Database applications (MS-Access) and simple view of programming language.
CULT150	National Culture	3	This course discusses several topics such as citizenship, Islam, Yemen before Islam, Yemen during Islam, challenges facing Yemen, and unity.
CULT200	Introduction to Arab - Islamic Civilization	3	The aim and purpose of this course is to investigate Arab-Islamic civilization by focusing on two major aspects, namely the intellectual and cultural aspects by calling attention to the achievements and contributions made by the Arabs and Islam to the civilization of East and West.
ENGL150	English Composition & Rhetoric	3	ENGL150 is mainly about how to write paragraphs. In addition to capitalization rules, punctuation rules and subject–verb agreements, students in this course learn how to write different kinds of sentences correctly. They learn three types of sentences: simple sentences, compound sentences and complex sentences. Then they learn how sentences are combined to make paragraphs. They effectively practice writing topic sentences, supporting sentences and concluding sentences. Students, on the other hand, become aware of avoiding grave sentence errors such as fragments, run-ons and comma splices. ENGL150 is the major base for all writing courses needed for a university student. The writing courses which come after ENGL150 at the LIU are ENGL200, ENGL250 and ENGL350 and for all of them, it is crucial to know how to structure a complete sentence correctly.
ENGL200	Advanced English Composition & Rhetoric	3	ENGL200 is mainly about how to write essays. It comes directly after ENGL150 English Composition & Rhetoric which teaches students how to write paragraphs. Generally speaking, students who know how to write paragraphs well find this course a piece of cake, for an essay is a combination of paragraphs. As students in ENGL150 know what constitutes a paragraph, in ENGL200 they learn what constitutes an essay. They learn how to write different kinds of essays by practicing writing essays on a weekly basis. After students write essays in class, the teacher corrects those essays and gives them back to the students to re-write them without any errors. This way, students are going to improve their writing greatly. As ENGL150 is a prerequisite for ENGL200, ENGL200 is an inevitable requirement for ENGL250 Technical Writing and ENGL350 English Communication Skills. In other words, ENGL150, ENGL200 and ENGL250/ENGL350 have to be learned respectively.
ENGL207	English Reading skill	3	ENGL207 Basic Reading Skills is intended for students who need improvement in basic reading skills. It aims to help students develop basic reading skills, such as previewing and making predictions, scanning, skimming, making inferences, building powerful vocabulary and finding main ideas. Students are supposed to learn five units. Each unit is accompanied by vocabulary and comprehension exercises for consolidating the skills and for testing comprehension. The last part of the textbook includes three units and each unit has passages followed by practical multiple-choice questions. To make students enjoy reading, this course attempts to familiarize students with some basic speaking skills related to the reading topics.
ENGL250	Technical writing	3	This intermediate writing course is designed to teach students the academic skills needed to succeed in college and university content courses. It basically focuses on how to use the APA (American Psychological Association) and MLA (Modern Language Association) writing styles to do research. Students will have opportunities to effectively use these two international writing styles in paraphrasing paragraphs and summarizing articles in forms of paragraphs.

			Further, this course clarifies how to take short and long quotations according to the APA and MLA rules. Using the MLA and APA rules, students learn how to write in-text citations, bibliographies, works-cited and references All the LIU students, especially those who are interested in doing research papers, take this practical writing course to know how to paraphrase, summarize and quote something without committing plagiarism.
ENGL350	English Communication Skills	3	ENGL350 is a writing-speaking course which has two different complementary categories. The first category is the written skills based on particular writing techniques and the language structure. Students learn the writing processes at work. They learn how to write memos, faxes, emails, business letters, business proposals, effective short reports, resumes and job application letters. The second category is the oral category which is based upon listening and speaking skills. The course requires planning, organizing, illustrating and delivering individual and team presentations of different types and purposes using the relevant terminologies and proper visual aids. The presentations necessitate pre-prepared written documentations. The oral presentations focus on three different issues: speaking with confidence, analyzing the audience, and organizing a speech. The assessments should meet the requirements of the course and the students have to reach an acceptable spoken-written level to pass the course.
HUMN210	Human Rights – Global Perspective	3	This course will consider the development of human rights through the exploration of the problems of achieving human rights in developing societies. The course will focus its discussion on problems that occur in developing societies, diverse in their structures, resources, history, and aspirations. The courses aim will be to acquire insights and understanding of social, economic, cultural, legal, and political processes by which development and human rights advance or retract in various societies.
POLS440	The Arab Israeli Conflict	3	This course explores the causes, development, and implications of the Arab-Israeli conflict from its inception in the late 19th century until the present day.