The University of Jordan

الجامعة الاردنية

Form: Study Plan- Bachelors	Form Number	EXC-01-03-02A
	Issue Number and Date	2963/2022/24/3/2 5/12/2022
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.1	School	Agriculture
.2	Department	Nutrition and Food Technology
3.	Program title (Arabic)	البكالوريوس في تغذية الإنسان والحميات
4.	Program title (English)	B.Sc. Degree in Human Nutrition and Dietetics

5. Components of Curriculum:

The curriculum for the bachelor's degree in **Human Nutrition and Dietetics** consists of (**138**) credit hours distributed as follows

Number	Type of requirement	credit hours
First	University Requirements	27
Second	Faculty Requirements	24
Third	Department Requirements	87
Total		**138**

6. Numbering System:

A- Department number

Number	Department
1	Horticulture and Crop Science
2	Animal Production
3	Nutrition and Food Technology
4	Land, Water and Environment
5	Agricultural Economics and Agribusiness Management
6	Plant Protection

B- Course number

Domain number	Domain title	Domain number	Domain title
0	General	5	Hygiene and diet therapy
1	Basic sciences	6	Population and environment
2	Foods	7	Nutrition counselling and education
3	Human nutrition	8	Laboratory methods
4	Food processing	9	Training, Research and Seminars

C- Course number consists of 7 digits

Faculty		Department		Level	Sequence	(Field)
0	6	0	3	1	0	1

First: University Requirements (27) credit hrs:

All students admitted to the university must apply for a degree examination in Arabic and English and the computer is prepared or approved by the university to determine their level. Based on the results of the examinations, either the student will study one or more of the requirements of the preparatory program.

Compulsory Requirements					
(18 Credit Hours)					
No.	Course Title	Course No.	Credit Hours	Prerequisites	Notes
1	Military Science	2220100	3		
2	National Culture	3400100	3		
3	Learning & Research Skills	3400101	3	3202099 3201099 1932099	
4	Communication Skills	3400102	3	3400101	
5	Introduction to Philosophy and Critical Thinking	3400103	3	3400101	
6	Human Civilization	3400104	3		

7	Campus Life and Ethics	3400105	(Zero credit; one-hour weekly meeting)		

Preparation Program Requirements All students admitted to the university must apply for a degree examination in Arabic and English and the computer is prepared or approved by the university to determine their level. Based on the results of the examinations, either the student will study one or more of the requirements of the preparatory program					
(0 - 15 Credit Hours)					
No.	Course Title	Course No.	Credit Hours	Prerequisites	Notes
1	Basics of Arabic	3201099	3		Pass/Fail
2	Arabic Languages Skills	3201100	3	3201099	Pass/Fail
3	Basics of English	3202099	3		Pass/Fail
4	English Language Skills	3202100	3	3202099	Pass/Fail
5	Basics of Computing	1932099	3		Pass/Fail

Preparation Program Requirements All students admitted to the university must apply for a degree examination in Arabic and English and the computer is prepared or approved by the university to determine their level. Based on the results of the examinations, either the student will study one or more of the requirements of the preparatory program					
(0 - 15 Credit Hours)					
No.	Course Title	Course No.	Credit Hours	Prerequisites	Notes
1	Basics of Arabic	3201099	3		Pass/Fail
2	Arabic Languages Skills	3201100	3	3201099	Pass/Fail
3	Basics of English	3202099	3		Pass/Fail
4	English Language Skills	3202100	3	3202099	Pass/Fail

5	Basics of Computing	1932099	3		Pass/Fail

Electives					
(9 Credit Hours)					
Elective courses: (9) credit hours to be chosen from the first, second and third groups mentioned below. The student has to choose one course from each of the groups.					
(First Group)					
No.	Course Title	Course No.	Credit Hours	Prerequisites	Notes
1	Great Books	3400107	3		
2	Islam and Current Issues	0400101	3		
3	Arab-Islamic Civilization	2300101	3		
4	Jordan: History and Civilization	2300102	3		
5	Jerusalem	3400108	3		
Electives					
(Second Group)					
No.	Course Title	Course No.	Credit Hours	Prerequisites	Notes
1	Legal Culture	1000102	3		
2	Environmental Culture	0300102	3		
3	Physical Fitness Culture	1100100	3		
4	Islamic Culture	0400102	3		
5	Health Culture	0720100	3		
Electives					
(Third Group)					

No.	Course Title	Course No.	Credit Hours	Prerequisites	Notes
1	Entrepreneurship & Creativity	3400109	3		
2	Foreign Language	2200103	3		
3	Electronic Commerce	1600100	3		
4	Social Media	1900101	3		
5	Appreciation of Arts	2000100	3		
6	Special Subject	3400106	3		
7	Administrative skills	1601105	3		

Second: School courses: distributed as follows:

A. Obligatory school courses: (24) credit hours

B. Elective school courses: None

A. Obligatory school courses: (24) credit hours:

Course Number	Course Name	Contact Hours		Credit Hours	Pre-requisite
		Theory	Practice		
0301101	Calculus (1)	3	-	3	-
0333106	General Chemistry for Life Sciences	3	-	3	-
0333109	Experimental General Chemistry for non-Chemistry Students	-	3	1	0333106 or Sim.
0334103	General Biology for life Sciences	3	-	3	-
0304111	Experimental General Biology (1)	-	3	1	0334103 or Sim.
0342103	General Physics for Life Sciences	3	-	3	-
0332113	Experimental General Physics for life Sciences	-	3	1	0342103 or Sim.
0661101	Principles of Plant Production	3	-	3	0334103
0605151	Biostatistics and Data Analysis	3	-	3	1900103

1900103	Modern Digital Skills	3	-	3	1932099

B. Elective school courses: None

Third: Specialty courses: (87) credit hours distributed as follows:

A. Obligatory specialty courses: (75) credit hours

B. Elective specialty courses: (12) credit hours

A. Obligatory specialty courses: (75) credit hours:

Course Number	Course Name	Contact Hours		Credit Hours	Pre-requisite
		Theory	Practice		
0333233	Organic Chemistry for non-Chemistry Students	3	-	3	0333106
0303239	Experimental Organic Chemistry for non-Chemistry Students	-	3	1	0333233 or Sim.
0602301	General Biochemistry	3	-	3	0333233
0633220	Principles of Food Science	2	-	2	0334103 + 0333106
0603231	Fundamentals of Nutrition	3	-	3	0334103 + 0333106
0603303	General Microbiology	2	2	3	0304111
0603203	Anatomy and Physiology	3	-	3	0334103
0603305	Food Analysis Methods	2	3	3	0303239
0643332	Human Nutrition and Metabolism	3	-	3	0602301
0603353	Introduction Dietetics	3	-	3	0603231
0603354	Assessment of Nutritional Status	2	2	3	0603353
0603458	Nutrition Support in Special Cases	2	3	3	0613451
0613430	Techniques in Nutrition Counselling and Communication	2	2	3	0603354
0643431	Nutrition During the Lifecycle	3	-	3	06033540643332 +
0613435	Community Nutrition Systems	2	2	3	0603354
0613451	Medical Nutrition Therapy (1)	2	3	3	0603203+ 0643332 + 0603354
0613452	Medical Nutrition Therapy (2)	2	3	3	0603203+ 0643332 + 0603354

Course Number	Course Name	Contact Hours		Credit Hours	Pre-requisite
		Theory	Practice		
0643453	Food Hygiene	3	-	3	0603303
0613361	Management of Food Services Institutes	3	-	3	0643453
0603463	Meal Management and Preparation	2	2	3	0643453 + 0603353
0663491	Scientific Readings and Research Methods in Human Nutrition and Dietetics	3	-	3	(*)
Employability Readiness					
0662490	Fundamentals of Employment Readiness (Interpersonal skills and professional Development-General)	-	6	3	(*)
0663490	Employment Readiness: Specialized Skills in Human Nutrition and Dietetics	-	6	3	(*)
Practical Training					
0603480	Training and Graduation Project in Human Nutrition and Dietetics	-	8	3	(**)
0613493	Training in Community Nutrition	-	8	3	(**)
0613494	Training in Clinical Nutrition	-	8	3	(**)

(*) Minimum completion of 89 credit hours successfully, in addition to the department approval.

(**) Completion of 110 credit hours and the following courses: Medical Nutrition Therapy 1 + Medical Nutrition Therapy 2 + Nutrition During the Lifecycle + Assessment of Nutritional Status + Management of Food Services Institutes + Techniques in Nutrition Counselling and Communication and Community Nutrition Systems, in addition to the department approval.

B. Elective specialty courses: (12) credit hours:

Course Number	Course Name	Contact Hours		Credit Hours	Pre-requisite
		Theory	Practice		
First Group	**Human Nutrition and Dietetics and Food Science and Technology**	**The student chooses 6 credit hours from the following courses**			
0603333	Nutrition and Genes	3	-	3	0334103 or 0603231
0643410	Sensory Evaluation of Foods	2	2	3	0633220 or 0605151
0603437	Nutrition and Exercise	3	-	3	0643332
0603438	Functional Foods	3	-	3	0603231
0613444	Food Biotechnology	2	3	3	0603303
0603401	Food Microbiology	2	2	3	0603303
0603455	Nutrition and Diseases of Affluence	3	-	3	0613435
0603321	Food Chemistry	3	-	3	0333233
0603464	Total Quality Management Systems	3	-	3	Fourth year level
0702205	Pathophysiology	3	-	3	0603203
Second Group	**Humanitarian Sciences**	**The student chooses 3 credit hours from the following courses**			
2337102	Principles of Psychology	3	-	3	-
0802291	Child Health and Environment Education	3	-	3	-
2305361	Sociology of Communication	3	-	3	-
2305355	Social problems	3	-	3	-
2305356	Social Development	3	-	3	-
Third Group	**Agricultural Sciences**	**The student chooses 3 credit hours from the following courses**			
0602101	Principles of Animal Production	3	-	3	0334103
0605101	Principles of Agricultural Economics	3	-	3	0301101
0635230	Agribusiness Marketing	3		3	-
0606351	Pesticides	2	3	3	0333106
0604334	Green Skills and Sustainability	3	-	3	-
0605322	Innovation and Entrepreneurship for Agribusiness	3	-	3	-

Fourth: Courses offered by other faculties and departments

Course Number	Course Name	Contact Hours		Credit Hours	Pre-requisite
		Theory	Practice		
0301101	Calculus (1)	3	-	3	-
0333106	General Chemistry for Life Sciences	3	-	3	-
0333109	Experimental General Chemistry for non-Chemistry Students	-	3	1	0333106 or Sim.
0334103	General Biology for life Sciences	3	-	3	-
0304111	Experimental General Biology (1)	-	3	1	0334103 or Sim.
0342103	General Physics for Life Sciences	3	-	3	-
0332113	Experimental General Physics for life Sciences	-	3	1	0342103 or Sim.
0661101	Principles of Plant Production	3	-	3	0334103
0605151	Biostatistics and Data Analysis	3	-	3	1900103
1900103	Modern Digital Skills	3	-	3	1932099
0333233	Organic Chemistry for non-Chemistry Students	3	-	3	0333106
0303239	Experimental Organic Chemistry for non-Chemistry Students	-	3	1	0333233 or Sim.
0602301	General Biochemistry	3	-	3	0333233
0662490	Fundamentals of Employment Readiness (Interpersonal skills and professional Development- General)	-	6	3	(*)
0702205	Pathophysiology	3	-	3	0603203
2337102	Principles of Psychology	3	-	3	-
0802291	Child Health and Environment Education	3	-	3	-
2305361	Sociology of Communication	3	-	3	-
2305355	Social problems	3	-	3	-
2305356	Social Development	3	-	3	-
0602101	Principles of Animal Production	3	-	3	0334103
0605101	Principles of Agricultural Economics	3	-	3	0301101

0635230	Agribusiness Marketing	3		3	-
0606351	Pesticides	2	3	3	0333106
0604334	Green Skills and Sustainability	3	-	3	-
0605322	Innovation and Entrepreneurship for Agribusiness	3	-	3	-

Fifth: Guided Study Plan for Human Nutrition and Dietetics Program Students

First Year

Fall			**Spring**		
Course Number	**Course Name**	**Credit Hours**	**Course Number**	**Course Name**	**Credit Hours**
0333106	General Chemistry for Life Sciences	3	0301101	Calculus (1)	3
0333109	Experimental General Chemistry for non-Chemistry Students	1	0333233	Organic Chemistry for non-Chemistry Students	3
0334103	General Biology for Life Sciences	3	0303239	Experimental Organic Chemistry for non-Chemistry Students	1
0304111	Experimental General Biology (1)	1	1900103	Modern Digital Skills	3
0342103	General Physics for Life Sciences	3	0661101	Principles of Plant Production	3
0332113	Experimental General Physics for life Sciences	1		University requirement	3
	University requirement	3			
Fall Total		**15**	**Spring Total**		**16**
Summer			**University requirement**		**3**
			University requirement		**3**
Summer Total		**6**	**Academic Year Total**		**37**

Second Year

Fall			Spring		
Course Number	Course Name	Credit Hours	Course Number	Course Name	Credit Hours
0603231	Fundamentals of Nutrition	3	0603353	Introduction to Dietetics	3
0633220	Principles of Food Science	2	0643332	Human Nutrition and Metabolism	3
0603203	Anatomy and Physiology	3	0603354	Assessment of Nutritional Status	3
0605151	Biostatistics and Data Analysis	3	0603305	Food Analysis Methods	3
0603303	General Microbiology	3		University requirement	3
0602301	General Biochemistry	3			
Fall Total		**17**	**Spring Total**		**15**
Summer			**University requirement**		**3**
			University requirement		**3**
Summer Total		**6**	**Academic Year Total**		**38**

Third Year

Fall			Spring		
Course Number	Course Name	Credit Hours	Course Number	Course Name	Credit Hours
0613435	Community Nutrition systems	3	0613451	Medical Nutrition Therapy (1)	3
0643453	Food Hygiene	3	0603463	Meal Management and Preparation	3
0603431	Nutrition During the Lifecycle	3	0613430	Techniques in Nutrition Counselling and Communication	3
	Elective department requirement	3		Elective department requirement	3
	University requirement	3		Elective department requirement	3

Fall Total		**15**	**Spring Total**	**15**
Summer	0662490	Fundamentals of Employment Readiness (Interpersonal skills and professional Development-General)		3
	0663490	Employment Readiness: Specialized Skills in Human Nutrition and Dietetics		3
		University requirement		3
Summer Total		**9**	**Academic Year Total**	**39**

Fourth Year

Fall			**Spring**		
Course Number	**Course Name**	**Credit Hours**	**Course Number**	**Course Name**	**Credit Hours**
0613361	Management of Food Services Institutes	3	0613493	Training in Community Nutrition	3
0613452	Medical Nutrition Therapy (2)	3	0613494	Training in Clinical Nutrition	3
0603458	Nutrition Support in Special Cases	3	0603480	Training and Graduation Project in Human Nutrition and Dietetics	3
0663491	Scientific Readings and Research Methods in Human Nutrition and Dietetics	3			
	Elective department requirement	3			
Fall Total		**15**	**Spring Total**		**9**
Summer			-		-
			-		-
Summer Total		-	**Academic Year Total**		**24**

Sixth: Course Description

Speciality Courses Offered by the Department

(0) General

Course Number : 0603303	Course Name :General Microbiology	Credit Hours : 3
Pre-requisite:- (0304111)		
Description Gain knowledge about the diversity of microorganisms; what they are made of, and how they live and function, evolutionary relationships and taxonomy; microbial cell structure and functions; genetic systems of microorganisms; nutrition, physiology and energy; extrinsic and intrinsic relationship of microorganisms and the environment; control of microorganisms; introduction to immunology, and how they can affect our life and how to deal with the biorisk associated with them. In practical session, students will gain intensive training on microscopy, staining and culturing techniques; enumeration, isolation and biochemical identification of microorganisms.		
Course Number: 0603203	Course Name :Anatomy and Physiology	Credit Hours: 3
Pre-requisite:- (0334103)		
Description The study of the structure and function of the human body focusing on the general principles of physiology, studying the homeostasis of cell and tissue physiology, the physiology of the nervous system, the heart and circulatory system, the respiratory system, the renal system, the glandular system, the digestive system, the skeletal system, the muscular system and the reproductive system, in addition to integrative physiology.		
Course Number: 0643401	Course Name : Food Microbiology	Credit Hours: 3
Pre-requisite:- (0603303)		
Description The study of the structure and function of the human body focusing on the general principles of physiology, studying the homeostasis of cell and tissue physiology, the physiology of the nervous system, the heart and circulatory system, the respiratory system, the renal system, the glandular system, the digestive system, the skeletal system, the muscular system and the reproductive system, in addition to integrative physiology.		

(1) Basic Sciences

Course Number: 0643410	Course Name :Sensory Evaluation of Foods	Credit Hours : 3
Pre-requisite:- 0633220 or 0605151		

Description
Study if the importance of sensory evaluation of food. The proper conditions needed for conducting the sensory evaluation tests. The different methods used in the sensory evaluation. How taste, odor and aroma as well as the additional sensations and threshold tests are evaluated. Understand how sensory evaluation tests are performed on selected local fresh and/or processed foods including some traditional foods. How to apply statistical analysis methods to the results gained.

(2) Foods

Course Number: 0633220	Course Name: Principles of Food Science	Credit Hours : 2
Pre-requisite:- (0334103 + 0333106)		
Description Study of the main definitions and principles of food science and technology; the composition of foods and their role in food processing; and the influence of processing on food attributes; The causes of food spoilage and explaining the principles of how the food is preserved by several methods.		
Course Number: 0603321	**Course Name: Food Chemistry**	Credit Hours: 3
Pre-requisite:- (0333233)		
Description Studying the major and many of the minor food components; the importance of water and colloids in foods; the major food components; how they are chemically classified, what is their structure, occurrence, properties, and functions. The chemical changes may occur during handling, storage, preservation, and processing. Explaining the minor natural food components such as: enzymes, flavors, colors and a view on food additives		
Course Number: 0603305	Course Name :Food Analysis Methods	Credit Hours : 3
Pre-requisite:- (0333239)		
Description Learn how the food chemically analyzed, what are the methods of sampling, recording, and interpreting of results, know the experimental errors; the spectroscopy theory, how to analyse metals using atomic absorption, spectrophotometry. The chromatographic techniques and how paper, thin layer, GLC and HPLC are applied in food analysis.		

(3) Human Nutrition

Course Number: 0603231	Course Name :Fundamentals of Nutrition	Credit Hours: 3
Pre-requisite:- (0334103 + 0333106)		

Description Identifying the basic concepts in nutrition, explaining nutrients and how they are metabolized and the biochemical transformations taking place within the living body, with a focus on comparing the fate of different nutrients and how they are interrelated and integrated into energy metabolism in the body; and recognize pathological problems resulting from malnutrition and its symptoms.		
Course Number: 0643332	**Course Name :Human Nutrition and Metabolism**	**Credit Hours: 3**
Pre-requisite:- (0602301)		
Description Gain insight about the applications of human nutrition concepts explaining the integration of the effect of nutrients and nutritional status of metabolic and physiological function at cellular, tissue, organ, and whole-body level in humans as related to health and disease; emphasizing how metabolic homeostasis is regulated; appreciate various types of health clams and their nutrient implications; recognize dietary standards and what are their methods of a determination under different physiological conditions; focus on how drugs and nutrients have interacted in humans; explain how nutrition can affect human physical fitness.		
Course Number: 0613430	**Course Name :Techniques in Nutrition Counselling and Communication**	**Credit Hours: 3**
Pre-requisite:- (0603354)		
Description Defining the concept and techniques of nutrition extension and its importance in improving the dietary habits of individuals, groups and communities for achieving nutrition/ health purposes. In addition to developing and applying communication skills in various extension activities to achieve nutritional and health goals. The student defines the principles and methods necessary to communicate with individuals, groups and groupings, as well as the barriers to effective communication. The students apply communication skills in planning and implementing nutrition education programs to raise the competence of individuals, families and communities in making the right decision.		
Course Number: 0643431	**Course Name :Nutrition During the lifecycle**	**Credit Hours: 3**
Pre-requisite:- (0603354 + 0643332)		
Description Study of physical growth and important physiological and psychological developments during growth prenatally and postnatal; the important physiological changes during pregnancy and lactation and mechanism of milk production and relationship with nutritional needs and feeding; physiological and		

psychosocial changes for the elderly and their nutritional requirements; in addition to explaining how some concerns are related to nutrition during the various stages and their management.		
Course Number: 0603333	**Course Name: Nutrition and Genes**	**Credit Hours: 3**
Pre-requisite:- (0603231 or 0334103)		
Description In this course, students will acquire fundamental concepts on the importance of nutrition from the molecular to the organismal levels in health and disease. Particularly, how significant nutrients regulate genes and how certain genes regulate the metabolic pathways involved in nutrient homeostasis. Furthermore, students will cultivate awareness and obtain skills necessary to be constantly updated in the fields of nutrigenomics and personalized nutrition by exploring and discussing recent scientific articles on the topic. Experts people will be invited to give students lectures or a variety of interactive activities.		
Course Number: 0613435	Course Name :Community Nutrition Systems	Credit Hours : 3
Pre-requisite:- (0603354)		
Description Study the target community and its nutritional status, including diagnosing and regulating its nutritional status, monitoring nutritional problems and conducting nutritional intervention to solve them. The students also defines the role of the community nutritionist, which includes planning and managing governmental and non-governmental community nutrition programs, including groups at risk of malnutrition, and participating in the development of nutritional and environmental awareness programs via media.		
Course Number: 0603437	Course Name :Nutrition and Exercise	Credit Hours : 3
Pre-requisite:- (0643332)		
Description Providing students with sound principles of exercise and nutrition and their interaction for the promotion of health and performance in certain population groups; the optimum nutrient and hydration needs for exercise of varying intensities and duration; fundamentals of strength, power, and muscular endurance assessment; explain the facts and fallacies about the available supplements and ergogenic aids; and study how these topics are applied in nutrition and exercise for weight management and chronic diseases prevention.		
Course Number: 0603438	**Course Name: Functional Foods**	**Credit Hours: 3**
Pre-requisite:- (0603231)		
Description The student knows the definition of functional foods and learn their uses and components which include prebiotics, probiotics, phytochemicals, herbs, some animal and plant products, some active chemicals such as		

sterols, polyphenols and antioxidants. In addition the student learns the benefits and health claims and risks related to their misuse.

(4) Food Processing

Course Number: 0613444	Course Name : Food Biotechnology	Credit Hours: 3
Pre-requisite:- (0603303)		
Description In this course, students will get an overview on several current food biotechnological tools, such as recombinant DNA, bioreactors, and Nanobiotechnology. The theoretical part is divided into four main topics: Molecular biotechnology, fermentation and enzymes, plant and animal biotechnology, and Food safety testing and quality monitoring using biotechnology. In the practical part, students will apply the acquired theoretical knowledge by performing or simulating experiments such as food color gel electrophoresis, production of enzymes, vitamins or organic acids using continuous fermentation, and detecting genetically modified food using PCR.		

(5) Hygiene and Diet Therapy

Course Number: 0603353	Course Name :Introduction to Dietetics	Credit Hours: 3
Pre-requisite:- (0603231)		
Description Gain insight into the applications of basic human nutritional principles emphasizing how can utilize them in the selection of normal and therapeutic diets; explain the elements of nutritional care process; focus on the concepts of healthy dietary guides and food exchanges; recognize the criteria of the healthful diet; appreciate the various techniques of clients interviewing and counselling; understand the role of the dietician; acknowledge common hospital therapeutic diets and what are main diseases requiring diet therapy.		
Course Number: 0603354	Course Name :Assessment of Nutritional Status	Credit Hours : 3
Pre-requisite:- (0603353)		
Description The students will know the fundamentals of assessing the nutritional status of paediatrics, adults, elderly, and pregnant and lactating women. Describe what are the main tools and skills needed to assess the nutritional status of the body in health and disease. Focus on how to assess the nutritional status through determining food and nutrients intake, anthropometric measurements, biochemical, clinical, social, economic and psychological criteria for the purpose of appropriate nutritional intervention according to		

age and physiological status. Show the students how to use all the collected information in applying the nutrition care process. Train the students on how to use and interpret the growth charts of the paediatrics in the practical sessions. Train on the most appropriate nutrition assessment methods in different situations by using nutrition care process approach in diverse case studies during the practical sessions.		
Course Number: 0613451	**Course Name : Medical Nutrition Therapy (1)**	**Credit Hours : 3**
Pre-requisite:- (0603354+ 0643332 +0603302)		
Description The student will learn in this course the importance of applying diet therapy and nutrition counselling in the adjustment of physiological, biochemical, and clinical disorders in the human body. The diseases covered in this course include infants' diseases, particularly inborn errors of metabolism, and diseases of the gastrointestinal tract, liver, pancreas, obesity and diabetes mellitus. The practical part includes studying selected case studies of these diseases and treating them with the right diet plan.		
Course Number: 0613452	**Course Name : Medical Nutrition Therapy (2)**	**Credit Hours : 3**
Pre-requisite:- (0603354+ 0643332 +0603302)		
Description This course is a continuation of (Medical Nutrition Therapy 1). The student learns to apply diet therapy in the following diseases: cardiovascular, respiratory, kidney, and gout diseases, besides applying dietetics in severe disease conditions requiring nutritional rehabilitation such as situations of surgeries, burns, accidents, cancer and AIDS, and the use of tube feeding and total paternal nutrition. The practical part includes studying selected case studies of these diseases and treating them with the right diet plan.		
Course Number: 0643453	**Course Name :Food Hygiene**	**Credit Hours : 3**
Pre-requisite:- (0603303)		
Description The student learns in this course the concept of food hygiene and its importance. How hazards are associated with foods and the epidemiology of foodborne illness. What are the hygienic requirements in food production, harvesting areas and in food establishments. In addition to learning the design and construction requirements for hygienic food handling, processing and storage and how to prevent cross contamination. Understanding personal hygiene and health requirements, cleaning and disinfection and pest control. And how to apply hazard analysis and critical control point (HACCP) system and ISO 22000 in food establishments.		
Course Number: 0603455	**Course Name :Nutrition and Diseases of Affluence**	**Credit Hours : 3**
Pre-requisite:- (0603401)		

Description
Identify the relationship between nutrition and contemporary changes in dietary intake patterns and the development of chronic diseases of affluence: What type of associations between dietary behaviors and non-communicable disease. How evidence-based dietary interventions affect those diseases. Explain the biological basis of nutrition and the mechanisms by which diet can influence health. Develop quantitative skills required for the evaluation of diet and disease relationships in epidemiologic studies.

Course Number: 0603458	**Course Name: Nutrition Support in Special Cases**	**Credit Hours: 3**
Pre-requisite:- (0613451)		
Description In this course, the student learns the application of intensive medical nutrition therapy in special conditions and critically ill adult patients who are requiring critical care in intensive care unit (ICU) and optimal modalities in administration of nutritional therapy. The critical cases included in this course are mechanical ventilation in medical intensive care units (ICUs), medical and surgical conditions, acute and severe malnutrition, cases receiving nutrition support, primarily in the form of eternal nutrition (EN), or as parenteral nutrition (PN). Additionally, the student will learn the dietetic application of EN and PN in adult hospital practice, based on best current available evidence recommendations in selected case studies.		

(6) Population and Environment

Course Number: 0613361	Course Name :Management of Food Services Institutes	Credit Hours :3
Pre-requisite:- (0643453)		
Description Students will get information about foodservice industry including types of organizations and trends in foodservice. Be familiar with processes (systems) of foodservice organizations and get acquaintance and understanding of their organizational structure. Have information about what equipment and furnishings are in use in foodservice organizations and why it is vital to select the right ones. Students will realize the importance and role of the menu and know how to carry out menu planning and evaluation, and learn how to manage purchasing, receiving, storage and inventory. Students will learn how to manage production and service activities in foodservice organizations and understand how to manage quality control, human resources and operations.		
Course Number: 0603464	Course Name :Total Quality Management Systems	Credit Hours : 3
Pre-requisite:- (Fourth year level)		

Description
Students will be introduced to the concept of quality and developments in management of quality and other systems. Have information about the International Organization for Standardization (ISO) and ISO 9000 series of international standards related to quality management. Be familiar with quality management principles, and get acquaintance and understanding of vocabulary related to quality and quality management. Be informed about processes and requirements of ISO 9001 standard for quality management. Be familiar with the concepts of quality audit, conformity assessment, laboratory accreditation and good laboratory practice. In the practical part students will learn how to develop, implement and maintain a quality management system based on the ISO 9001. The student will be familiar with what business excellence models are currently in use and how to compliment them with the management of other quality systems. Understand what tools are used in quality management and when and how to use them.

Course Number: 0603463	Course Name: Meal Management and Preparation	Credit Hours: 3
Pre-requisite:- (0643453 + 0603353)		
Description In this course, the student will learn the principles of meal management; what process of controlling every aspect of diet from food store to mealtime, how menu is planned, how is the food selected, how is recipe standardized, how to purchase and prepare food, what is meal service and how food sanitation and hygienic practice during preparation affecting food safety.		

(9) Training, Research, Seminars and Graduation Project

Course Number: 0662490	Course Name: Fundamentals of Employment Readiness (Interpersonal skills and professional Development- General)	Credit Hours : 3
Pre-requisite:- (*)		
Description This course aims to help students acquire the skills, experiences and competencies necessary to enter the labour market efficiently, and to make graduates distinguished in their professional fields and able to solve the problems they face by providing them with the skills and competencies required for the labour market. The course will focus on enhancing the technical, professional and personal capabilities of students while discussing the concepts of leadership, creativity, innovation, productivity, administrative hierarchy and capacity development. The course also includes a description of the local and regional labour market and		

the jobs available for the academic program, with an introduction to the laws, regulations and legislation in force related to the profession, in addition to presenting the reality of graduates of the School of Agriculture in general. The course is characterized by giving an effective role to experts and pioneers from the public and private sectors to meet with students to discuss the work environment and job requirements in the major, in addition to presenting their experiences in their respective fields.		
Course Number: 0663490	**Course Name : Employment Readiness: Specialized Skills in Human Nutrition and Dietetics**	**Credit Hours : 3**
Pre-requisite:- (*)		
Description Preparing the student through a comprehensive review of all the skills and competencies required for the job market in the field of nutrition and dietetics, and assessing the students' ability to apply these skills and competencies proficiently, including solving nutritional problems and making appropriate decisions in various medical cases, and their readiness for the job market as a graduation requirement. Acquiring skills in applying current information technologies to manage and analyze nutritional information for use in assessing nutritional status, conducting nutrition education and guidance, as well as meal planning, and using electronic nutrition programs. Practicing according to the legislation, accreditation standards, and the code of ethics for the dietetics profession recently issued by the American Academy of Nutrition and Dietetics. Enabling the student to prioritize and manage time to efficiently perform the required tasks within the work team and within the specified time frame according to job market requirements; acquiring professional scientific writing skills in preparing therapeutic nutritional plans and nutritional communication and counselling. Using effective communication, education, and counselling skills with the public to facilitate changes in dietary behaviours and patterns among community groups. Understanding how to design nutrition plans tailored to meet the medical needs of patients; and learning about appropriate modifications for oral nutritional supplements, or enteral or parenteral nutrition. Applying the acquired skills and competencies through studying various practical case studies.		
Course Number: 0663491	**Course Name: Scientific Readings and Research Methods in Human Nutrition and Dietetics**	**Credit Hours: 3**
Pre-requisite:- (**)		
Description The students discuss selected published scientific papers in human nutrition and dietetics, where each student is asked to choose a research published in scientific journals, summarize, and discuss it in front of		

the students, focusing on its importance, methodology, results and conclusions. This trains the student to use, analyse and criticize scientific references, and train them to write scientific papers. Acquiring knowledge in basis of scientific research and its application, and knowledge about suitable research methodology and tools which are required to implement research project that is specified in the field of food and nutrition, highlight basic skills for scientific project that is emphasize the process of identifying the research, put hypothesis, select sample, design experiment, data collecting and analysis and ethics of scientific research and train students in critical readings of scientific papers.

Course Number: 0613493	Course Name :Training in Community Nutrition	Credit Hours: 3
Pre-requisite:- (**)		
Description Trainings in community nutrition for different age groups and physiological states with the aim of providing the student with the necessary skills in assessing nutritional status, conducting nutritional education and guidance, as well as meal planning, diets and menus, and the use of electronic nutrition programs. The student also acquires the necessary knowledge to manage nutrition institutions, manage human resources and various operations from purchasing to service, in addition to quality management, control and assurance.		

Course Number: 0613494	Course Name : Training in Clinical Nutrition	Credit Hours : 3
Pre-requisite:- (**)		
Description Training the students on how to apply the various elements of the medical nutrition care plan including nutrition assessment, nutrition diagnosis, nutrition intervention, and nutrition monitoring and evaluation in planning appropriate diets in selected illnesses. To know what feeding modality can be designed to match the medical needs of the patient; and recognize what modifications can be appropriate for oral supplementation, enteral formula, or parenteral nutrition. To know when and how to use information technologies, particularly those related to nutrition and lifestyle choices.		

Course Number: 0603480	Course Name: Training and Graduation Project in Human Nutrition and Dietetics	Credit Hours: 3
Pre-requisite:- (**)		
Description To provide the student with practical experience in solving nutritional problems, especially those related to chronic diseases associated with lifestyle. The student must choose a specific research project within the		

specialization of human nutrition and dietetics, provide a brief description of the methods used in the research, data analysis and a brief evaluation of the results, and then present the project to the audience.

(*) Minimum completion of 89 credit hours successfully, in addition to the department approval.
(**) Completion of 110 credit hours and the following courses: Medical Nutrition Therapy 1 + Medical Nutrition Therapy 2 + Nutrition During the Lifecycle + Assessment of Nutritional Status + Management of Food Services Institutes + Techniques in Nutrition Counselling and Communication and Community Nutrition Systems, in addition to the department approval.

Courses offered for Department\Faculty\University Students

Course Number: 0603101	**Course Name: Principles of Food and Nutrition**	**Credit Hours : 3**
Pre-requisite:- (0334103)		
Description Introduction to the nutrients with respect to classification; dietary sources, functions and body requirements, the concept of balanced diet; the aetiology and management of malnutrition. Introduction to types and causes of food spoilage, food preservation, and food-borne diseases, emphasizing the status of nutrition and food industries in Jordan.		
Course Number: 0603233	**Course Name : Applied Nutrition in Health and Illness**	**Credit Hours :3**
Pre-requisite:- (0702205 or Sim.)		
Description Basics related to nutrients and food energy in terms of digestion, absorption, metabolism, vital functions, food sources, malnutrition diseases and human needs in different stages of life, methods of evaluating nutritional status, foundations of creating healthy meals, planning nutritional programs, education and nutritional guidance, and the use of food and diets in the treatment and management of some common diseases and chronic diseases of the affluence that affect different body systems.		

Courses offered by other faculties and departments

Course Number: 1900103	Course Name: Modern Digital Skills	Credit Hours: 3
Pre-requisite:- (1932099)		
Description		
Course Number: 0301101	Course Name: Calculus (1)	Credit Hours: 3
Pre-requisite:- (-)		
Description Functions: domain, operations on functions, graphs of functions; trigonometric functions; limits: meaning of a limit, computational techniques, limits at infinity, infinite limits ;continuity; limits and continuity of trigonometric functions; the derivative: techniques of differentiation, derivatives of trigonometric functions; the chain rule; implicit differentiation; differentials; Roll's Theorem; the mean value theorem; the extended mean value theorem; L'Hopital's rule; increasing and decreasing functions; concavity; maximum and minimum values of a function; graphs of functions including rational functions (asymptotes) and functions with vertical tangents (cusps); antiderivatives; the indefinite integral; the definite integral; the fundamental theorem of calculus ; the area under a curve; the area between two curves; transcendental functions: inverse functions, logarithmic and exponential functions; derivatives and integrals; limits (the indeterminate forms); hyperbolic functions and their inverses; inverse trigonometric functions; some techniques of integration.		
Course Number: 0342103	Course Name: General Physics for Life Sciences	Credit Hours : 3
Pre-requisite:- (-)		
Description Motion in a Straight Line, Motion in two Dimensions, Newton's Laws of Motion, STATICS, Work, Energy, and Power, Linear Momentum, Temperature and the Behaviour of Gases, Thermodynamics, Thermal Properties of Matter, Electric Forces, Electric Fields, Electric Potentials, Direct Currents.		
Course Number: 0332113	Course Name: Experimental General Physics for life Sciences	Credit Hours :1
Pre-requisite:- (0342103 or Sim.)		
Description Students perform 12 experiments of 3 hr/week duration. These experiments are: Measurements and Uncertainties, Collection and Analysis of Data, Vectors: Force Table, Newton's 2nd Law of Motion, Simple Harmonic Motion: Simple Pendulum, The Falling Sphere Viscometer, The Laws of Gases, Measurement of		

Resistance, The Potentiometer, Specific Charge of Copper Ions, Introduction to the Oscilloscope, Joule Heat, Lenses.		
Course Number: 0333106	**Course Name : General Chemistry for Life Sciences**	**Credit Hours: 3**
Pre-requisite:- (-)		
Description This course covers basic topics including: The scientific method, measurements and significant figures, units and dimensional analysis, naming simple inorganic compounds, stoichiometry, basic reactions in aqueous solutions and solution stoichiometry, properties of gases and kinetic molecular theory, measurements and calculations of energy associated with physical changes and chemical reactions, basic quantum theory and the electronic structure of the atoms, atomic periodic properties, ionic bonding, covalent bonding, molecular geometry, and hybridization of atomic orbitals.		
Course Number: 0333109	**Experimental General Chemistry for non-Chemistry Students**	**Credit Hours: 1**
Pre-requisite:- (0333106 or Sim.)		
Description Safety and laboratory rules; chemical observations; Avogadro's number; stoichiometry; volumetric analysis; oxidation and reduction; colligative properties; thermochemistry and equilibrium.		
Course Number: 0333233	**Course Name :Organic Chemistry for non-Chemistry Students**	**Credit Hours: 3**
Pre-requisite:- (0333106)		
Description Hydrocarbons: alkanes, cycloakanes, alkenes, alkynes; aromatic compounds; stereochemistry; halides; alcohols; phenols; ethers; amines; carbonyl compounds and carboxylic acids.		
Course Number: 0333239	**Course Name : Experimental Organic Chemistry for non-Chemistry Students**	**Credit Hours : 1**
Pre-requisite:- (0333233 or Sim.)		
Description The course involves separation, purification of and identification organic compounds through their physical properties: melting point, distillation, crystallization, extraction, and chromatography; preparation of simple organic compounds; qualitative tests for selected classes of organic compounds.		
Course Number: 0334103	**Course Name : General Biology for Life Sciences**	**Credit Hours : 3**

Pre-requisite:- (-)		
Description This course covers the fundamental principles of biology, focusing on the chemical basis of life, cell structure and function, energy transformations, and cellular processes. The course provides a comprehensive overview of biological concepts and processes, preparing students for advanced study in agricultural sciences.		
Course Number: 0304111	**Course Name : Experimental General Biology (1)**	**Credit Hours : 1**
Pre-requisite:- (0334103 or Sim.)		
Description Laboratory experiments in microscopy and cells, chemical aspects of cells, plant and animal issues, animal and plant physiology. Mammalian anatomy, and systematic of major living groups.		
Course Number: 0602301	**Course Name :General Biochemistry**	**Credit Hours: 3**
Prerequisite: (0333233)		
Description This course provides an overview of the structural and functional properties of carbohydrates, lipids, amino acids, proteins, nucleic acids, and biological membranes. Emphasis is placed on enzyme kinetics, catalytic mechanisms, and regulatory processes. The course also introduces key concepts in the metabolism of carbohydrates, fats, and proteins, as well as an introduction to signal transduction pathways and their role in cellular communication and regulation		
Course Number: 0702205	**Course Name : Pathophysiology**	**Credit Hours: 3**
Pre-requisite:- (0603203)		
Description This course focuses on the physiological changes that occur as a result of internal and external environmental stressors and pathological responses of the body that lead to the appearance of the signs and symptoms of the disease in response to these changes. This course reviews the concepts and fundamentals of the most common health problems. The content focuses on the special health needs over individual's life.		
Course Number: 2337102	**Course Name: Principles of Psychology**	**Credit Hours: 3**
Pre-requisite:- (-)		
Description		

A general overview of theories and applications of psychology. It includes psychology development, biological basis of behavior, perception, sensation, learning, memory, intelligence, language, emotions, motivation, personality, psychological health, mental disorders, psychotherapy, and social psychology		
Course Number: 0802291	**Course Name: Child Health and Environment Education**	**Credit Hours: 3**
Pre-requisite:- (-)		
Description This course addresses the physical, motor and sensory growth characteristics of the child and the identification of its recording tools. Environmental and genetic factors and their impact on the child's development in the physical and sensory-motor domains. Identify childhood diseases and methods of detection, prevention and care for children during them. The vaccines required for the child and their role in protecting the child from diseases. Creating a healthy environment for the child, taking into account the conditions of security and safety. Nutrition and its role in children's health, and first aid.		
Course Number: 2305361	**Course Name: Sociology of Communication**	**Credit Hours: 3**
Pre-requisite:- (-)		
Description Introducing different aspects of the foundations of communication, the components of human communication, levels of communication, and the needs and functions of communication in societies. The course also deals with theories of the media and its effect on individuals, culture and society, in addition to the media as a provider of knowledge and culture.		
Course Number: 2305355	**Course Name: Social problems**	**Credit Hours: 3**
Pre-requisite:- (-)		
Description Causes and consequences of social problems on different institutions in society, including the family. The course also deals with different theories of social problems, and different types of social problems in society, such as inequality, poverty, unemployment, population explosion.		
Course Number: 2305356	**Course Name: Social Development**	**Credit Hours: 3**
Pre-requisite:- (-)		
Description		

Understanding factors essential to the organization of societies, planning and coordinating and organizing as means and goals for development and growth, as well as exchange of information which are essential for planning and field training.		
Course Number: 0661101	**Course Name: Principles of Plant Production**	**Credit Hours : 3**
Pre-requisite:- (0334103)		
Description Horticultural crops including classification, structure, growth and development, reproduction, horticultural environment, horticultural technology, propagation, mineral nutrition, training and pruning, growth regulation, horticultural and production systems		
Course Number: 0602101	**Course Name :Principles of Animal Production**	**Credit Hours: 3**
Pre-requisite:- (0334103)		
Description The student will learn the following topics: Importance of farm animals for production of food; breeds of farm animals (dairy cattle, beef cattle, dairy sheep, mutton sheep, wool sheep, dairy goats, chevon goats, chicken broilers, egg-laying chicken); edible (meat, milk and table eggs) and inedible (animal fiber) animal products; physiology of digestive and reproductive systems; increasing animal productivity through proper management of breeding, nutrition, reproduction and health; classification of feedstuffs based on the content of fiber, protein and energy; an overview on livestock sector in Jordan (population of farm animals, breeds, production of meat, milk and table eggs) and challenges facing this sector within the context of climate change.		
Course Number: 0606351	**Course Name : Pesticides**	**Credit Hours: 3**
Pre-requisite:- (0333106)		
Description Students will learn groups of pesticides, toxicity; chemical structure and nomenclature, methods of application and safety regulations.		
Course Number: 0605151	**Course Name: Biostatistics and Data Analysis**	**Credit Hours: 3**
Pre-requisite:- (1900103)		
Description Study the basic concepts of statistics and the methods used in data collection, analysis and presentation, especially in agriculture. To describe basic principles of data analysis, methods for calculating some statistical measures such as measures of central tendency and dispersion. The concept of simple linear correlation and regression as a method for measuring the relationship between two phenomena. Distinguishing between		

quantitative and descriptive variables, and providing the student with the ability to address some of the problems that they encounter in their working lives in a scientific manner based on a scientific method.		
Course Number: 0605101	**Course Name :Principles of Agricultural Economics**	**Credit Hours : 3**
Pre-requisite:- (0301101)		
Description Economic concepts, resources and systems, analysis of input-output, input-input, and output-output relationships, analysis of costs of production, input and output decisions of agricultural firms, demand and supply and their related elasticities, market equilibrium, determination of prices and quantities, and types of markets. Basic agricultural economic concepts concerning resource use, price determination, and profit maximization are emphasized.		
Course Number: 635230	**Course Name : Agribusiness Marketing**	**Credit Hours : 3**
Pre-requisite:-		
Description The concept and functions of agricultural marketing, methods of determining prices, estimating marketing margins, marketing channels, factors affecting prices and marketing channels, marketing institutions, and methods of conducting marketing studies. The course deals with the various trading activities that affect the sales of products in the food marketing system, and those that occur in retail stores		
Course Number: 0605322	**Course Name :Innovation and Entrepreneurship for Agribusiness**	**Credit Hours : 3**
Pre-requisite:-		
Description This course aims to introduce students to the concepts of innovation and entrepreneurship and provide them with the basic knowledge and skills to develop ideas into viable projects in the agricultural sector. This course also uses theoretical and practical methodologies to train students and prepare them to discover opportunities and unleash their energies in this field. It includes the following topics: culture and systems of innovation and creative thinking, entrepreneurship and its modeling, management of agricultural projects and small companies, social entrepreneurship, intellectual property, technology marketing and sources of funding. Success in this course requires students to develop a business plan for a new viable project or idea.		
Course Number: 0604334	**Course Name : Green Skills and Sustainability**	**Credit Hours : 3**
Pre-requisite:-		
Description		

Throughout this course, the students' skills and knowledge in sustainability and green skills will be expanded to build more sustainable practices in the land, water, plant and animal husbandry sectors. Students will learn how to identify sustainability issues, conduct environmental surveys, restore habitats, and understand conservation methods. The course combines academic studies with practical learning in a variety of settings, providing learners with real-world experience. The course will also cover topics such as carbon neutrality, working towards net zero, and how to increase sustainability in agriculture and the environment. Emphasis will be placed on promoting low-carbon technology to help advance education in agricultural areas and create a new understanding of a sustainable future. The agricultural sustainability management approach will contribute to future options for addressing environmental and sustainability issues within the Sustainable Development Goals.