



## Philadelphia University

### Faculty of Science/ Department of Clinical Nutrition and Dietetics

### Course description for Clinical Nutrition and Dietetics (2020/2021)

<b>0260115</b>	<b>Fundamentals in Nutrition</b>
Credit ours	3 credit hours (3 theory+ 0 practical)
Prerequisite	0٢٤٠١٠١
	This course focuses on the digestion process in the human body, and the digestion of the energy yielding nutrients. Study carbohydrates, proteins, and lipids. The course also describes the major and minor minerals, water- soluble vitamins, fat- soluble vitamins and water in the body and their deficiency, toxicity, food sources and functions in the body.
<b>0260216</b>	<b>Introduction in Food Science</b>
credit hours	3 credit hours (3 theory+ 0 practical)
Prerequisite	٠٢١٢١٠١
	This course focuses on Chemical composition of food components, their physical properties and their functional roles. It discusses each of the food groups, such as carbohydrates, proteins, fats and oils,..etc. An ecological approach is also targeted so as to link between the climate change and food science. The effect of climate change on food science issues such as; food security, food production and quality is discussed. The concept of going green in food is studied also. Food spoilage factors and their prevention using different food additives, physical, chemical and biological mean are also discussed. It also introduces principles of quality control and sensory evaluation of food.
<b>0260210</b>	<b>Human Nutrition</b>
credit hours	3 credit hours (3 theory+ 0 practical)
Prerequisite	0260115
	This course presents metabolic diseases, most of which can be described in biochemical terms. These metabolic disorders produce symptoms, or complications, which impair the health, quality of life, or potentially lead to death of the individual. The attention is focused on the biochemical mechanisms that may participate in disease development, metabolic pathways, physiological disorders and the clinical manifestations. The role of nutrition, both in prevention of disease development and as part of the therapeutic strategy will be studied along with classical treatments involving lifestyle modification, drugs, and supplements provided as nutraceuticals or functional foods.
<b>0260255</b>	<b>Nutrition and Metabolism</b>
credit hours	3 credit hours (3 theory+ 0 practical)

Prerequisite	• ٢٤٠٣٤٣
	Applications of human nutrition concepts emphasizing the integration of the effect of nutrient and nutritional status of metabolic and physiological function at cellular, tissue, organ and whole body level in humans as related to health and disease; regulation of metabolic homeostasis; health claims and their nutritional implications; dietary standards and their methods of determination under different physiological conditions; drug- nutrient interactions and nutrition and physical fitness
<b>0260236</b>	<b>Food Preparation Theory</b>
credit hours	2 credit hours (2 theory+ 0 practical)
Prerequisite	0260116
	Cookery processes and their properties; structure, composition and nutritive value of foods; the changes that take place during preparation especially those in the nutritive value and the quality of the product
<b>0260237</b>	<b>Food Preparation Practical</b>
credit hours	1 credit hour (0 theory+ 3 practical)
Prerequisite	• ٢٦٠٢٣ ٦corequisites
	Practical application in cookery processes and their properties; structure, composition and nutritive value of foods; the changes that take place during preparation especially those in the nutritive value and the quality of the product
<b>0260250</b>	<b>Nutrition Through the Life Cycle</b>
credit hours	3 credit hours (3 theory+ 0 practical)
Prerequisite	0260210
	The course explains the health habits and lifestyle practices that must be followed in preconception, pregnancy and lactation period. The course focuses on the nutritional rules and habits that must be met in infants, toddlers, preschoolers and adults covering the good nutritional habits and practices in the different age groups.
<b>0260256</b>	<b>Medical Nutrition Therapy (1) Theory</b>
Credit Hours	2 credit hours (2 theory+ 0 practical)
Prerequisite	0260210
	This course focuses on the main nutritional disorders related to deficiency in major macronutrients and micronutrients. Weight management, obesity and overweight and their consequences on health, e.g. diabetes mellitus and metabolic syndrome. The course also describes the nutritional consequences of severe micronutrients deprivation and their relation to different diseases e.g. osteoporosis and hypothyroidism.
<b>0260257</b>	<b>Medical Nutrition Therapy (1) Practical</b>
credit hours	1 credit hour (0 theory+ 3 practical)
Prerequisite	• ٢٦٠٢٥٦corequisites
	This course enables the students to provide therapeutic diets related to macro and micro nutrients deficiencies and to deal with different cases using the scientific systematic methods of nutritional prevention and diagnosis.

**0260320 Food Microbiology Theory**  
credit hours 2 credit hours (2 theory+ 0 practical)  
Prerequisite 0260216  
Role and significance of microorganisms in quality and safety of foods. Factors affecting life and death of microorganisms in foods. Microbiology of some selected foods is covered with emphasis on safety and quality. Food in relation to disease. Role of microorganisms in food processing. The course provides students with basic knowledge and skills of work in food microbiology practical laboratory.

**0260321 Food Microbiology Practical**  
credit hours 1 credit hour (0 theory+ 3 practical)  
Prerequisite 0260320  
Role and significance of microorganisms in quality and safety of foods. Factors affecting life and death of microorganisms in foods. Food in relation to disease; public health and sanitation. These practical laboratory exercises are designed to complement the material discussed in the lecture and are aimed at providing a hands on opportunity for the student to practice and observe the principles of food microbiology. Students will familiarize themselves with the techniques used to research, regulate, prevent and control the microorganisms found in food. The course provides students with basic knowledge and skills of work in authorized food microbiology practical laboratory.

**0260327 Food Additives**  
Credit hours 2 credit hours (2 theory+ 0 practical)  
Prerequisite 0260420  
This course deals with the advantages and disadvantages of food additives, their uses in food industries, safety evaluation and regulatory aspects. It also deals with the different classes of food additives with respect to chemical and physical nature as well as mode of action.

**0260333 Food Service Institution Managements**  
Credit hours 2 credit hours (2 theory+ 0 practical)  
Prerequisite 0260236  
This course deals with basic principles of institutional food service systems. It discusses methods of food and equipment purchasing, menu planning, quality assurance, and management of a feeding establishment. Other major topics are financial planning of staff food services and the application of food quality systems to institutions. It also describes agri-food systems and impact of climate change on food systems.

**0260355 Medical Nutrition Therapy (2) Theory**  
credit hours 2 credit hours (2 theory+ 0 practical)  
Prerequisite 0260206  
This course focuses on the application of dietetics in the treatment of some diseases, including cardiovascular diseases, respiratory, hepatobiliary, pancreatic and kidney diseases; also conditions as surgeries and severe illnesses such as cancer and AIDS; and the benefits of tube feeding and total paternal nutrition. This course is a continuation of Therapeutic Nutrition (1) and the student.

**0260356 Medical Nutrition Therapy (2) Practical**

credit hours 1 credit hour (0 theory+ 3 practical)

Prerequisite • 260300 corequisites

The practical part of Therapeutic Nutrition 2 includes selected case studies and dietetic applications. Recognize etiologies, diagnosis tools, signs and symptoms, and pathophysiologic correlations of some diseases which require rehabilitation including selected surgeries and severe illnesses resulting from burns and accidents. It focuses on diets planning for cardiovascular, Hepatobiliary, pancreatic, renal and obstructive pulmonary diseases. Understand the role of nutrition and the appropriate diets for hyper-catabolic diseases particularly cancer and AIDS. Be able to prepare tube feeding formulas and understand situations in which they are used. Also to plan and assess diets for the above mentioned diseases in each practical part.

**0260360 Nutritional Status Assessment Theory**

credit hours 2 credit hours (2 theory+ 0 practical)

Prerequisite • 260210

Studying the nutritional status and how to accurately assess it, knowing the relationship between diet and health, focus on the nutritional assessments methods for health and patients, the importance of the nutritional assessment, studying the systems of computerized dietary analysis, the dietary analysis on the Internet, and the nutritional assessment in disease prevention. Studying also the different techniques used in measuring diet and methods for assessment the hospitalized patients.

**0260361 Nutritional Status Assessment Practical**

credit hours 1 credit hour (0 theory+ 3 practical)

Prerequisite • 260360 corequisites

Includes different assessment activities such as anthropometric tests (estimating stature and body weight, different skinfold measurements using calipers), and biochemical tests (studying different profiles such as chemistry, complete blood count and coronary risk profile) as indicators of the nutritional status. It also includes exercises in the use of growth charts for ideal status of children and grownups of both sexes, and food composition tables for the assessment of nutritional status and the relation of good health status to balanced nutrition. Different assessment activities such as 24-hour recall and questionnaires (diet history and food frequency questionnaires) are focused on.

**0260365 Diet Planning Theory**

credit hours 2 credit hours (2 theory+ 0 practical)

Prerequisite 0260210

Application of basic human nutritional principles in the selection of normal therapeutic diets, emphasizing the elements of nutritional care process, concepts of dietary guides, criteria of the healthful diet, interviewing and counseling techniques and role of the dietitian, common hospital therapeutic diets and major disease requiring diet therapy.

a- Review of basic definitions and food guides and recommendations.

b- Study the food habits and different cultural patterns.

c- Review the regular diets in hospitals and study the balanced and healthy

nutrition during health and disease.

d- Study selected diseases and study the medical nutritional therapy for them.

**0260366**

credit hours

Prerequisite

**Diet Planning Practical**

1 credit hour (0 theory+ 3 practical)

• 260360 corequisites

This course includes steps to be taken in consideration for planning and formulation of different diets for ordinary and with special dietary needs subjects. It also includes training on using the nutrition software, exchange list, food pyramid, and food composition tables. Concentration on calculations of energy- producing nutrients in different food items using the mentioned methods.

**0260367**

credit hours

Prerequisite

**Nutritional Education and Counseling**

2 credit hours (2 theory+ 0 practical)

• 260360

This course provides the students with the scientific nutritional information and skills needed to make significant differences in the health of their communities and to stress the importance of proper nutrition in disease prevention.

Nutrition education is the combination of educational strategies, accompanied by environmental supports, designed to facilitate the voluntary adoption of food choices and other food- related behaviors conducive to health and well-being. It is delivered through multiple venues and involves activities at the individual, institutional, community, and policy levels.

**0260420**

credit hours

Prerequisite

**Food Chemistry and Analysis Theory**

2 credit hours (2 theory+ 0 practical)

• 212241

This course focuses on analysis of chemical components of foods and their effect on quality, types of deterioration in different food structures and methods used in detecting food deterioration.

The chemical reactions that take place during processing, handling and storage are also covered. Food additives such as colorants, emulsifying agents,..etc, and their functional role are discussed. Lipid Oxidation and Food Antioxidants are also highlighted within framework of this course as well as functional foods and chemistry of lipids, vitamins and minerals.

**0260421**

credit hours

Prerequisite

**Food Chemistry and Analysis Practical**

1 credit hour (0 theory+ 3 practical)

• 260420 corequisites

The lab part includes proximate analysis and different analytical methods and application of official standards to identify the selected food items by analytical and instrumental lab methods. Practical experiments are conducted so as to highlight methods of Food analysis, in order to evaluate its content and quality.

<b>0260430</b> Credit hours Prerequisite	<b>Functional Foods</b> 2 credit hours (2 theory+ 0 practical) 0260210 This course deals with definition of functional foods; popularity and uses; chemistry and components which include prebiotics, probiotics, and phytochemicals, herbs, and some animal and plant products. Some active chemicals such as sterols, polyphenols, ergogenic aids and antioxidants. Brief description of their products. In addition to legislative aspects claims and health risks related to them.
<b>0260431</b> Credit hours Prerequisite	<b>Food Processing</b> 2 credit hours (2 theory+ 0 practical) • 260236 This course highlights principles of food processing such as ambient, thermal and non-thermal processing. It covers processing techniques of the major food groups; e.g. cereals, meats, fruits and vegetables as well as food preservation, meal preparation and packaging techniques at both home-based and industrial level.
<b>0260433</b> credit hours Prerequisite	<b>Food Quality Control</b> 2 credit hours (2 theory+ 0 practical) Pass 90 credit hours The course highlights the importance of quality control as applied to food industry. Structure, management and functions of food quality control, systems on industrial and official scales food regulations, standardization, statistical quality control, and related organizations to insure quality and safety of food.
<b>0240436</b> Credit hours Prerequisite	<b>Genetics and Food Immunity</b> 2 credit hours (2 theory+ 0 practical) 0260355 Study of the correlation between nutrigenomics and immunity. Furthermore, Genomics and their associations with nutrients and proteins metabolism, human health, biological homeostasis and tissue integrity; immune system: role and interaction of specific nutrients and consequence immunity responses.
<b>0260427</b> credit hours Prerequisite	<b>Food Biotechnology</b> 3 credit hours (3 theory+ 0 practical) • 260220 Definition of biotechnology and developments in food biotechnology. Principles of fermentations, genetic engineering, cloning and other modern techniques of biotechnology. Introducing the use of biotechnology in the production of fermented foods, production of enzymes, vitamins and proteins, and treatment of food plants wastes.
<b>0260460</b> credit hours Prerequisite	<b>Nutritional Epidemiology</b> 2 credit hours (2 theory+ 0 practical) • 260236

Study of purposes, principles and methods of nutritional epidemiology, emphasizing advanced developments of nutritional epidemiological research designs, implementation, processing and interpretation.

**0260461**

Credit hours

Prerequisite

**Research Methodology in Clinical Nutrition and Dietetics**

2 credit hours (2 theory+ 0 practical)

Pass 95 credit hours

This course focuses in the study of the basics of scientific research; identification of research problem; formulation of its hypothesis, data collection and statistical analysis; ethics in scientific research; training in writing a research proposal.

**0260462**

credit hours

Prerequisite

**Community Nutrition Theory**

2 credit hours (2 theory+ 0 practical)

• 260360

This course describes the theoretical principles of the science of community nutrition with particular emphasis on the local and national community nutrition policies, and intervention programs.

**0260463**

credit hours

Prerequisite

**Community Nutrition Practical**

1 credit hour (0 theory+ 3 practical)

• 260462 corequisites

This course describes the practical applications of the science of community nutrition with particular emphasis on the local and national community nutrition policies, and intervention programs.

**0260464**

Credit hours

Prerequisite

**Sports Nutrition**

2 credit hours (2 theory+ 0 practical)

0260210

This course presents the scientific basis for sports nutrition emphasizing basic nutritional concepts, energy expenditure during resistance and endurance exercise, the diet during training, the timing and composition of the pre- and post-competition meals, the use of nutrients supplements and ergogenic/ergolytic, and the special needs of various athletic groups. The course provides practical information for the competitive athlete and people of all ages wishing to incorporate nutrition into an active, healthy, lifestyle.

**0260465**

credit hours

Prerequisite

**Seminar in Clinical Nutrition and Dietetics**

1 credit hour (1 theory+ 0 practical)

Pass 95 credit hours+ Department agreement

The student chooses a current topic in nutrition and dietetics and discusses it in an article using recent references and presents it for an hour using audiovisual aids. Emphasis is placed on new developments in the field and evidence-based approach. Students are trained in the proper use of library references.

- 0260466 Selected Topics in Clinical Nutrition and Dietetics**  
 Credit hours 2 credit hours (2 theory+ 0 practical)  
 Prerequisite 0260355  
 Developing and extending student's knowledge and skills in both nutrition and applied dietetics, and highlighting the latest development in selected current issues of special interest
- 0260451 Training in Diet Therapy Practical**  
 credit hours 3 credit hours (0 theory+ 6 practical)  
 Prerequisite Pass 95 credit hours  
 This course deals with the application of techniques and methods in therapeutic nutrition that students have learned, in a medical setting such as hospitals and nutrition centers. The course lasts 16 weeks with an average of 40 hours per week.
- 0260435 Training in Community Nutrition and Counseling Practical**  
 credit hours 3 credit hours (0 theory+ 6 practical)  
 Prerequisite Pass 95 credit hours  
 The aim of this course is oriented the students in developing skills in the nutrition of healthy people at different ages and physiological stages in the area of: nutritional assessment, nutritional education and counseling, diet and meal planning, community nutrition program, by utilizing electronic nutrition software.
- 0260455 Training in Healthy Nutrition Practical**  
 credit hours 3 credit hours (0 theory+ 6 practical)  
 Prerequisite Pass 95 credit hours  
 This course deals with determining diet needs for patients using assessment of medical information and planning to prepare special meals. Methods to improve skills which are necessary for team work in clinical nutrition and dietetics are practiced.