



كلية الصيدلة جامعة الزيتونة الأردنية
Faculty of Pharmacy
Al-Zaytoonah University of Jordan

" نحو تعليم صيدلاني متميز "
Toward Excellence in Pharmaceutical
Education

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"Tradition and Quality"

Detailed Course Description - Course Plan Development and Updating Procedures/ Pharmacy Department	QF02/0408-3.0E
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Faculty	Pharmacy	Department	Pharmacy
Course number	0201552	Course title	Clinical Nutrition
Number of credit hours	3	Pre-requisite/co-requisite	0201413

Brief course description

This course is intended to demonstrate the fundamental concepts of nutrition and the role of nutrition and dietetics in promoting health and in preventing and treating diseases. The course explains macro- and micronutrients in terms of chemical structure, biological role, dietary sources and requirements, consequences of deficiency and toxicity, in addition to pharmacy- related aspects such as dietary supplements and food-drug interactions. The course also explains energy balance and management of body weight with an emphasis on obesity and its adverse health consequences.

Course goals and learning outcomes	
Goal 1	To introduce the fundamental concepts of nutrition including key terms and definitions such as nutrients, food groups, dietary guidelines, healthy diet, effect of nutrition on health, food labeling, nutritional assessment and food safety.
Learning outcomes	1.1) Recognizing the six classes of nutrients, the five food groups, the dietary guidelines and the criteria of healthy diet. 1.2) Knowing how to read and understand food labels. 1.3) Knowing the different approaches and tools used to plan diets and / or assess the nutritional status emphasizing the dietary guidelines (My Plate). 1.4) Understanding the effect of nutrition on health and its role in health and disease.
Goal 2	To know the three classes of macronutrients (carbohydrates, lipids and proteins) in terms of structure, function, dietary sources and requirements, in addition to any special nutritional considerations.
Learning outcomes	2.1) Recognizing the different classes of carbohydrates & their effect on health, introducing the concept of "dietary fibers" and "glycemic index". 2.2) Recognizing the different classes of lipids & their effect on health, introducing the concept of regulatory lipids "eicosanoids". 2.3) Recognizing the function of dietary and body proteins and their effect on health, introducing the concept of essential amino acids, protein quality and complementation.
Goal 3	To know micronutrients (vitamins and minerals) including electrolytes and the pertaining physiological role of water, recognizing their classification, function, dietary sources and requirements, deficiency and toxicity in addition to any special nutritional considerations such as dietary supplements and antioxidants.



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Learning outcomes	<p>3.1) Understanding the different classes of vitamins including fat- soluble and water-soluble vitamins in terms of their structure, function, dietary sources and requirements, deficiency and toxicity in addition to any special nutritional considerations.</p> <p>3.2) Understanding the different classes of minerals including major and trace minerals in terms of their chemistry, function, dietary sources and requirements, deficiency and toxicity in addition to any special nutritional considerations.</p> <p>3.3) Understanding electrolytes and the physiological role of water.</p> <p>3.4) Understanding dietary supplements and anti-oxidants in terms of their definition, types, health effects, and usage.</p>
Goal 4	To understand "energy balance" and management of body weight highlighting obesity and its adverse health effects.
Learning outcomes	<p>4.1) Understanding "energy balance" including the concepts of body energy, energy intake, energy expenditure with its three main components (BMR, TEF, EEPA).</p> <p>4.2) Understanding obesity in terms of its definition, classification (BMI scale), etiology, management, its adverse health effects including metabolic syndrome, in addition to recognizing the normal composition of the body emphasizing the adipose tissue.</p> <p>4.3) Recognizing body weight- related nutritional disorders such as anorexia nervosa and bulimia nervosa.</p>
Goal 5	To recognize the role of nutrition in the management of different types of disease (Diet therapy).
Learning outcomes	<p>5.1) Understanding the role of nutrition in the management of nutritionally –related diseases such as diabetes, hypertension, hyperlipidemia, hyperuricemia, renal dysfunction, hepatic dysfunction, gastrointestinal disorders and cancer.</p> <p>5.2) Understanding the different modes of feeding hospitalized patients (EN & TPN).</p> <p>5.3) Understanding the "Food and Drug Interaction (FADI)", recognizing the most important examples.</p>
Textbook	<ol style="list-style-type: none"> Mahan, Kathleen and Raymond, Janice (2017). Krause's Food & the Nutrition Care Process. Saunders; 14th ed. Whitney, Eleanor Noss and Rolfes, Sharon Rady (2016), Understanding Nutrition. Wadsworth Publishing; 14th ed.
Supplementary references	<ol style="list-style-type: none"> Gropper, S., Smith, J. and Carr, T. (2017). Advanced Nutrition and Human Metabolism (MindTap Course List). Wadsworth Publishing; 7th Ed. Manual of Clinical Nutrition, 2013. Compass Group: https://bscn2k15.weebly.com/uploads/1/2/9/2/12924787/manual_of_clinical_nutrition2013.pdf Biesalski, K. and Grimm, P. (2011). Pocket Atlas of Nutrition. Thieme; 8th Ed.



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Course timeline				
Week	Number of hours	Course topics	Pages (textbook)	Notes
01	1	Part I: Fundamentals of Nutrition		
	1	Introduction to Nutrition (Key terms)		
	1	The Dietary Guidelines DRI		
02	1	Food Labeling -1		
	1	Food Labeling -2		
	1	The Food Composition Table and the Exchange List		
03	1	Nutritional Assessment		
	1	Food Safety		
	1	Part II: Macronutrients		
04	1	Carbohydrates -1		
	1	Carbohydrates – 2		
	1	Lipids -1 Lipids -2		
05	1	Proteins -1		
	1	Proteins -2		
	1	Part III: Micronutrients (Vitamins & Minerals)		
06	1	Fat-soluble vitamins (A, E, K)		
	1	Fat-soluble vitamins (Vitamin D)		
	1	Water-soluble vitamins (B1, B2, B3, B5, B6, B7) Water-soluble vitamins (folate, B12, vitamin C)		
07	1	Major Minerals (Ca)		
	1	Major Minerals (P, Mg, S)		
	1	Trace Minerals (Fe and anemia).		
08	1	Trace Minerals (Zn, I and others)		
	1	Water and Electrolytes		
	1	Antioxidants		
09	1	Dietary Supplements		
	1	Food and Drug Interaction (FADI)		
	1	Part IV: Energy and Body Weight Management Energy Balance		
10	1	Obesity and management of body weight-1.		
	1	Obesity and management of body weight-2.		
	1	Obesity and management of body weight-3.		
11	1	Part V: Diet Therapy		
	1	Diabetes Mellitus.		
	1	Cardiovascular diseases (dyslipidemia & hypertension). Gout / Gastrointestinal Disorders.		
12	1	Renal & hepatic dysfunction.		
	1	Allergy & food intolerance / Cancer.		



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	1	Diet for hospitalized patients: Enteral & Parenteral nutrition.		
13	1 1 1	Part VI: Nutrition throughout the life cycle: Pediatrics & Geriatrics Nutrition. Special adult groups' nutrition: Athletes nutrition, Nutrition in pregnancy and lactation.		
14	1 1 1	Seminars		
15+16		FINAL EXAMS		

Course evaluation methods and weight	First exam: 25% Second exam: 25% Final exam: 50% (Plus assignments and a seminar)
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Approved by head of department	Dr. Abdelqader Albawab	Date of approval	
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Extra information (to be updated every semester by corresponding faculty member)

Name of teacher	Dr. Amani Alhadid	Office Number	414
Phone number (extension)	ext. 293	Email	amani.alhadid@zuj.edu.jo
Office hours	to be determined at the beginning of each semester.		